Self-leadership and Culture:

Examining Construct Validity, Cross-cultural Differences among Eastern and Western Populations and Work Outcomes of Self-leadership in Chinese Organizations

Jessie Ho

BA (Business Administration), MPhil (Industrial and Organizational Psychology)

A thesis submitted in partial fulfillment of the requirements for the degree of

Doctor of Philosophy

Macquarie Graduate School of Management

Macquarie University

June 2013

Abstract of Thesis

The radical changes in business markets in the past two decades are particularly characterized by globalization, rapid technological advances and flexible, decentralized organizational structures. People with high levels of capacity and skills in self-direction and self-influence should respond more successfully and effectively to the dynamic changes of organization structures and environments (Ensley, Hmieleski, & Pearce, 2006). Despite the importance of employees' self-leadership strategies to the new organizational environment, most empirical research has been conducted mainly in the United States. Only a few studies address how self-leadership influences employees' work outcomes in a non-Western context. Thus it is not clear whether the theory of self-leadership could be applied in an Asian organizational context. Consequently, there have been calls for more empirical research to examine the intercultural aspects of self-leadership (Neck & Houghton, 2006). The present research was designed to address this important and neglected area.

The first chapter presents an introduction of the thesis and includes a summary of the topics covered in each chapter. The second chapter presents a review of the theoretical context as well as the historical development for self-leadership theory. The research limitation of self-leadership is also discussed. This thesis also presents a series of research papers that: (1) develops a reliable scale of self-leadership that could be applied across Eastern and Western cultures; (2) examines the psychometric properties and the extent of measurement equivalence of the scale; (3) explores how culture shapes individuals' use of self-leadership strategies; and (4) investigates the relationship of self-leadership with work performance and job satisfaction and determines whether the relationships between self-leadership and work outcomes could be strengthened by the moderator of job autonomy in Chinese organizational settings. The thesis is written in the format of thesis-

by-publication.

The first study (Chapter 3) of this thesis found that the modified 38-item self-leadership questionnaire (MSLQ) is a reliable measure which captures different aspects of self-leadership theory. This finding suggests that all constructs of self-leadership originally conceptualized by the Western scholars could be generalized to the Chinese contexts.

Results of the second study (Chapter 4) also revealed that the modified self-leadership questionnaire (MSLQ) exhibited a satisfactory condition of psychometric properties across cultures. A series of multi-sample confirmatory factor analyses demonstrated that the MSLQ possesses measurement invariance, suggesting that it is appropriate for cross-cultural research assessing differences of self-leadership behaviors across the Chinese and Western cultures.

The third study (Chapter 5) builds on the findings of the second study that the MSLQ is a reliable measure to make cross-group comparisons between English and Chinese-speaking participants. Using the MSLQ as measurement tool, the third study is a follow-up research on examining how differences in self-construals (people's views about the self) and regulatory focus between individualistic and collectivistic cultures influence the use of self-leadership strategies among Hong Kong and Australian students. Results of the third study found that cross-cultural differences in self-views (interdependent/independent self-construal) and regulatory focus result in differences in the use of some self-leadership dimensions. It has been suggested that cultural differences in the value of academic achievement may also shape individuals' use of some self-leadership strategies.

The fourth study (Chapter 6) explored the impact of self-leadership on work outcomes in Chinese organizations. Results of this study supported the hypotheses that self-leadership behaviors are positively related to supervisor performance rating and job

satisfaction, even when controlling the personality trait of conscientiousness. In addition, job autonomy moderated the relationships between self-leadership behaviors and work outcomes of performance rating, objective work performance and job satisfaction. Indeed, the linkages between self-leadership behaviors and performance and job satisfaction have been explored mainly in the United States to date. This research provided evidence that such linkages can also be generalized to Chinese organization settings. The theoretical and managerial implications of these results are also discussed in this chapter. The final chapter (Chapter 7) summaries all research findings reported in previous chapters and discusses the major contributions and limitations of the thesis as well as the future research directions.

Declaration

I hereby declare that this thesis is my own work and that, to the best of my knowledge and belief, it reproduces no material previously published or written, non material that has been accepted for the award of any other degree or diploma, except where due acknowledgement has been made in the text. Ethics Committee approval was granted for the primary data collection component of this thesis. The Ethics Protocol number is: 5201000672(D) (see Appendix F) and HE28MAR2008-D0569.

Signature :

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Name   :   Jessie Ho

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CHAPTER ONE

INTRODUCTION

1.1 Overview

In the past, employees worked in stable environments dictated by high levels of managerial control. Organizational success, to a certain extent, depended on the leadership skills of managers. Thus management research placed a great deal of emphasis on understanding leadership, exploring how supervisors and leaders influence their followers. However, in contemporary organizations, the work environments are more turbulent and complex, being influenced by the pressure of globalization, rapid technological advances, as well as declining resources and increasing costs (Kinicki, McKee, & Wade, 1996; Murphy, 2002). Because of these changes in contemporary organizations, "employees, once viewed as relatively passive agents, are now seen as active agents in terms of interpreting the environment and directing their behavior" (Kanfer & Heggestad, 1997; p.3). This type of active role requires employees to take greater responsibility for their own job tasks and work behaviors (Ensley, Hmieleski, & Pearce, 2006). Consequently, a different perspective of leadership has emerged in the last 20 years (Manz & Sims, 1980; Blanchard, 1995; Cashman, 1995; Manz, 1991; Manz & Sims, 2001; Sims & Manz, 1996; Waitley, 1995), which focuses on how people manage and lead themselves in the management literature. This perspective has been referred to as self-leadership.

Self-leadership refers to a set of self-influence strategies that people use to guide themselves toward higher levels of performance and effectiveness (Manz, 1986; Manz & Neck, 2004). Self-leadership strategies are typically classified into three categories,

namely behavior-focused strategies, natural reward strategies, and cognitive or thought pattern strategies (Manz & Neck, 2004; Prussia, Anderson, & Manz, 1998; Sims & Manz, 1996). Behavior-focused self-leadership involves using action-oriented strategies to accomplish tasks that are difficult or are neither enjoyable nor motivating. Sims and Manz (1996) identified various behaviour-focused self-leadership strategies, including self-observation, self-goal setting, self-reward, self-punishment, and self-cueing strategies. Natural reward strategies are designed to enhance intrinsic motivation for better performances which include focusing one's attention on the pleasant aspects of a given job and engaging in job- or task-redesign (Manz & Neck, 2004). Constructive thought strategies involve visualizing successful performance, engaging in positive self-talk, and examining individual beliefs and assumptions to align cognitions with desired behavior (Neck & Manz, 1996; Neck, Stewart, & Manz, 1995). Research on the use of self-leadership strategies has found it to be effective at enhancing performance in clinical, athletic, and educational settings (Neck & Manz, 1992), and in employment contexts (Neck & Manz 1996; Stewart, Carson, & Cardy 1996).

1.2 Research limitations

Some researchers have argued that employees' self-leadership skills have become the most essential asset for job success as their motivation to achieve high performance levels increasingly depends on how well they manage themselves rather than the leadership skills of their supervisors (Gronn, 1999; Lovelance, Manz, & Alves, 2007; Manz & Sims, 1980). Yet, despite the potential use of self-leadership strategies in organizations, there is a lack of empirical research on the nature of self-leadership and its relationship to work outcomes, especially work performance (Neck & Houghton, 2006). One reason for the

lack of extensive empirical research may be due to the fact that a valid self-leadership measurement scale has been slow to develop (Neck & Houghton, 2006; Alves et al., 2006).

In addition, the majority of self-leadership research has been conducted in the United States and as such its development and supporting research may reflect Western cultural values (Alves et al., 2006; Neck & Houghton, 2006; Neubert & Wu, 2006). Hence, how national cultures shapes the emergence of self-leadership remains largely unexplored to date. Thus, Alves et al. (2006) call for more empirical research to determine whether the concept of self-leadership theory could be generalized across different cultures. One way in which the contextual problem is manifested is the lack of a reliable scale that is generalizable across different cultures. While a valid self-leadership scale has been developed in the Western culture of U.S.A (Houghton & Neck, 2002), its generalizability to the Chinese context is problematic (Neubert & Wu, 2006). Therefore, one of the aims of this thesis is to address the issue of scale development in self-leadership that could be generalized across Eastern and Western cultures. In Chapter 3 and 4 of this thesis, research related to the development of self-leadership scale is presented.

Another limitation of self-leadership research is the lack of research exploring the boundary conditions of self-leadership. Markham and Markham (1995, p.349) have asked whether self-leadership is "a universally applicable theory that will work with all employees under all circumstances" or a "contingency theory that best fits certain boundary conditions". Also, Alves et al. (2006) argued that while self-leadership behavior is a generally universal concept, different cultures value different attributes and practices. Thus, self-leadership behaviors may be applied differently across cultures. The second aim of this thesis is to examine how culture influences the practice of self-leadership strategies in Chinese and Western cultures. In particular, are certain leadership strategies

more typically associated within these different cultures? In Chapter 5 of the thesis, research related to the association between self-leadership strategies and cultures is presented.

Apart from the study of culture, another contingency factor of self-leadership research that has been generally ignored by management researchers is the moderating role of job characteristics measured at the individual level. Self-leadership theorists have suggested that encouraging follower self-leadership may not be relevant in all work roles (Manz & Sims, 2001; Neck & Houghton, 2006). For example, Manz and Sims (1994) have suggested that self-leadership may be more appropriate for employees who have higher degrees of autonomy and flexibility over how work is done. Thus, a third aim of this research is to explore the relationship of self-leadership with work performance and job satisfaction in Chinese organizational settings and whether job autonomy would strengthen the relationships between self-leadership behaviors and work outcomes. Theoretical discussion about the relationship of self-leadership to work outcomes and the moderating role of job autonomy is presented in Chapter 6.

1.3 Research Aims

In summary, the thesis is written in the format of thesis-by-publication. It presents a series of journal articles and conference papers that aims to:

(1) develop a reliable self-leadership scale to enhance the generalizability of self-leadership measurement to the Chinese population;

(2) examine the psychometric properties and measurement invariance of the scale to determine whether it is applicable across Eastern and Western cultures;

(3) explore how culture shapes individuals' use of self-leadership strategies; and

(4) investigate the relationship of self-leadership with work performance and job satisfaction in Chinese organizational settings and determines whether these relationships could be strengthened by the moderator of job autonomy.

1.4 Importance of the Research

It is proposed that the outcomes of this research make several contributions to knowledge. First, the development of a self-leadership scale provides researchers a useful instrument to conduct cross-cultural comparison research of self-leadership behaviors across Eastern and Western cultures. Second, this research advances understanding relating to how individuals from Eastern and Western cultures lead themselves to reach their goals. Third, this research provides human resources practitioners and managers with insights in relation to the importance of self-leadership skills of their employees. Specifically, the research shows that employees' competence in self-leadership impact employees' performance, and job satisfaction. Fourth, research on examining the boundary condition of self-leadership helps organizational managers to understand how to provide the right work context for employees to exercise their self-leadership skills.

1.5 Overall Structure of Dissertation

As previously stated, this thesis is written as a thesis-by-publication. The thesis is comprised of a number of chapters that relate to papers that have been published and/or submitted to refereed academic journals and conferences. Prior to the presentation of these chapters, a detailed literature review, which examines the theory and past empirical research of self-leadership, is presented in Chapter 2.

Chapter 3 is a published paper (Ho & Nesbit, 2009; see original paper at Appendix

A), which presents research related to the development of self-leadership scale that is applicable in a Chinese context. This paper also outlines the psychometric property and construct validity of this new scale.

Chapter 4 is a second published paper (Ho, Nesbit, Jepsen, & Demirian, 2012; see original paper at Appendix B). This chapter presents research which investigates whether the self-leadership scale developed in Chapter 3 is applicable in both Eastern and Western cultures.

Chapter 5 presents research which investigates how cultural differences in self-concept and regulatory focus shape individuals' use of self-leadership strategies. This research paper has been submitted to *Journal of Managerial Psychology* (Ho & Nesbit, under review a). An earlier version of this paper was presented at the Academy of British Management Conference in 2012 (Ho & Nesbit, 2012; for full version of this conference paper, see Appendix C).

Chapter 6 presents research which provides theoretical discussion about the impact of self-leadership on work outcomes such as performance ratings, objective work performance and job satisfaction. The paper also examines the extent to which job autonomy moderates the relationship between self-leadership and these work outcomes. This research paper has been submitted to *Group and Organization Management Journal* (Ho & Nesbit, under review b). An earlier version of this paper was presented at the 71st Annual Meeting of the Academy of Management in 2011 (Ho & Nesbit, 2011; for full version of this conference paper, see Appendix D).

Chapter 7 is a final chapter of the thesis that synthesizes key themes and insights generated through the research of the thesis. This chapter also discusses limitations of this research and directions for future research.

1.6 List of publications by candidate

In summary, this thesis contains a set of journal articles and conference papers written for achieving the research objectives stated above. While Chapter 3, 4, 5 and 6 are written as four separate journal articles for publications, each paper introduces the definition and nature of self-leadership as well as the research background and limitations for different audiences in different journals. Consequently, there are inevitably some repetitions of concepts among these four chapters. The following table lists out the thesis chapter that corresponds to the respective published papers or conference papers.

Chapter 3	**Study One: Published Paper** • Ho, J., & Nesbit, P.L. (2009). A refinement and extension of the self-leadership scale for the Chinese Context. *Journal of Managerial Psychology,* 24, 450-476. (*2010 ISI Impact factor: 2.31*)
Chapter 4	**Study Two: Published Paper** • Ho, J., & Nesbit, P.L., Jepsen, D., & Demirian, S. (2012). Extending self-leadership research to the East: Measurement equivalence of the Chinese and English versions of the MSLQ. *Asian Journal of Social Psychology, 15,* 101-111. *(2010 ISI Impact Factor: 0.90).*
Chapter 5	**Study Three: Journal and Conference Paper** • Ho, J., & Nesbit, P.L. (2012, September). *Self-leadership strategies: A comparative study of Hong Kong Chinese Students and Australian Students.* Paper presented at the British Academy of Management Conference, Cardiff, UK. • Ho, J., & Nesbit, P.L. (under review a). Exploring Self-leadership across Eastern and Western cultures. *Journal of Managerial Psychology.* (*2010 ISI Impact factor: 2.31*)
Chapter 6	**Journal and Conference Paper** • Ho, J., & Nesbit, P.L (2011, August). *Self-leadership and job autonomy: Independent and interactive effects on work outcomes in a Chinese context.* Paper presented at the 71st Annual Meeting of

| | the Academy of Management, San Antonio, TX. |
| | • Ho, J., & Nesbit, P.L. (under review b). Self-leadership in a Chinese context: Work outcomes and the moderating role of job autonomy. *Group & Organization Management Journal.* (*2010 ISI Impact factor: 2.43*) |

It is important to note that the candidate is the first author of all journal/conference papers listed above. The role of the candidate in each of these papers is: establishing research framework, synthesizing and summarizing literature, writing of manuscript, designing research methodology, conducting data collection and analysis, and preparation of tables.

CHAPTER 2

LITERATURE REVIEW

2.1 Overview

In this chapter, the extant literature on self-leadership is discussed. While each of the journal papers includes separate literature review sections, this chapter provides a coherent overview of the self-leadership literature. The chapter is divided into four sections. The first section introduces the defining characteristics of self-leadership. Self-leadership is made up of three categories of strategies, namely behavioral-focused self-leadership, natural reward self-leadership, and constructive thought self-leadership. The nature of each category of self-leadership strategies will be fully introduced. In section two, the historical overview of the development of self-leadership concept is presented. This section draws out the distinction between self-management and self-leadership. The third section provides a general review of the past empirical research on examining the link between self-leadership and work outcomes. In the fourth section of this chapter, the boundary conditions of self-leadership related to national cultures and work contexts which may shape the application of self-leadership are discussed. Research limitations of self-leadership study and the objectives of this thesis study are highlighted in the last two sections of this chapter.

2. 2 Definition of Self-leadership

Self-leadership is defined as "the process of influencing oneself to establish the self-direction and self-motivation needed to perform" (Neck & Houghton, 2006, p. 2). The concept of self-leadership is founded upon several related theories of self-influence

including self-control theory (Cautela, 1969; Mahoney & Arnkoff, 1978), self-determination theory (Deci & Ryan, 1985), social cognitive theory (Bandura, 1991), and clinical cognitive psychology (Burns, 1980; Ellis, 1975). Building on these theoretical foundations, self-leadership comprises specific behavioral and cognitive strategies designed for helping individuals to lead themselves (Manz, 1986; Manz & Neck, 2004). Self-leadership strategies are generally divided into three broad categories: behavior-focused strategies, natural reward strategies and constructive thought pattern strategies (Manz & Neck, 2004; Manz & Sims, 2001; Prussia, Anderson, & Manz., 1998).

2.2.1 Behavior-focused self-leadership strategies

Behavior-focused strategies are designed to heighten one's self-awareness in the pursuit of one's tasks, including those that are unpleasant but necessary for goal achievement (Manz & Neck, 2004). Based on self-control and self-management theory, behavior-focused strategies include self-goal setting, self-observation, self-reward, self-punishment, and self-cueing strategies. Self-observation involves closely examining one's own behavior to understand when, why, and under what conditions one engages in specific behaviors (Mahoney & Arnkoff, 1978; Manz & Sims, 1980). This enhanced self-knowledge help individuals identify what behaviors that need to be strengthened, removed, or changed (Mahoney & Arnkoff, 1979). Armed with increased awareness of current behaviors, individuals become more effective in setting appropriate personal goals for themselves (Manz, 1986; Manz & Neck, 2004; Manz & Sims, 1980). A large number of research studies suggest that the process of setting challenging and specific goals leads to higher individual performance levels (Locke & Latham, 1990). In addition, self-reward consists of self-applying motivational reward imposed for goal achievement. Self-rewards may be something tangible, such as a special vacation or a meal at a favorite restaurant, or

something more intangible such as self-praise for completing a difficult task. Self-rewards, when used in conjunction with self-set goals, are effective means for directing behaviors toward goal attainment (Mahoney & Arnkoff, 1978, 1979; Manz & Sims, 1980).

Self-punishment involves self-criticism or self-correcting feedback leading to the elimination of undesirable behaviors. However, the improper use of self-punishment involving excessive self-criticism and guilt can be detrimental to performance and should be eliminated (Manz & Sims, 2001). Houghton, Neck, and Manz (2003, p. 128) emphasized that "an introspective yet positively framed examination of negative behaviors and failures can be much more effective in correcting such behaviors than excessive self-punishment based on habitual guilt and self-criticism." Self-cueing involves the activity of constructing environmental cues used for shaping desirable behaviors (Manz & Neck, 2004). Examples of self-cueing are lists, notes, screensavers and motivational posters that can help individuals direct their attention on goal attainment. In short, behavior-focused self-leadership strategies are designed to increase self-awareness for encouraging positive desirable behaviors, while eliminating negative, undesirable behaviors that lead to unsuccessful self-control (Neck & Houghton, 2006).

2.2.2 Natural Reward Self-leadership Strategies

Self-leadership's conceptualization of natural rewards is based primarily on the intrinsic motivation literature, particularly Deci and Ryan's (1985) self-determination theory. According to Deci and Ryan (1985), an important dimension of motivated action is the extent that an activity evokes intrinsic motivation within the person. In particular, "intrinsic motivation concerns activity engagement with tasks that people find interesting and that, in turn, promote growth…Intrinsically motivated behaviors are those that are freely engaged out of interest without the necessity of separable consequences, and, to be

maintained, they require satisfaction of the needs for autonomy and competence" (Deci &

Ryan, 2000, p. 233). The need of competence involves the need to feel confident of

performing well in certain activities, while the need of autonomy involves the need to feel

free to follow their inner interests without any external pressures. Feelings of autonomy

and competence are a central focus in the natural rewards strategy component of self-

leadership (Manz & Neck, 2004). There are two primary natural reward strategies

identified within self-leadership. The first involves building more pleasant and enjoyable

features into a given activity so that the task itself becomes naturally rewarding (Manz &

Neck, 2004; Manz & Sims, 2001). The second strategy involves changing one's

perception by shifting attention away from the unpleasant aspects of a task while focusing

on its intrinsically rewarding aspects (Manz & Neck, 2004; Manz & Sims, 2001). These

strategies assume that once activities and task can be re-designed or perceived in ways

that increase feelings of competence and self-determination, the enjoyment of the task

and the intrinsic motivation to engage in it will be enhanced, resulting in higher task

performance (Neck & Houghton, 2006). Ilgen and Hollenbeck (1991) also asserted that

while most jobs involve some aspects that are non-routine, most employees have the

opportunity to redesign their job to intrinsically enrich their work activities. For example,

nurses could enjoy the mundane tasks (e.g. bathing patients) more by noticing how such

tasks promote patient comfort and health (Gagné & Deci, 2005). A number of research

studies have shown that employees who take an active, self-directing approach to

influence their work perceptions, or who create environmental changes, to highlight the

intrinsically rewarding dimensions of their work tend to perform better than employees

who focus only on the objective dimensions of the task (Crant, 2000; Fuller & Marler,

2009). In summary, natural reward strategies are designed to help employees experience

feelings of competence and autonomy, which in turn energizes individuals to strive for

better performance.

2.2.3 Constructive Thought Pattern Self-leadership Strategies

Constructive thought strategies focus on the formation of healthy thought patterns that can positively impact performance (Manz & Neck, 2004; Neck & Manz, 1992). Thought self-leadership is derived primarily from Bandura's (1986, 1991) social cognitive theory, which argues that human behavior is a function of reciprocal influences between a person's cognitions, the behavior, and the environment (Davis & Luthans, 1980). Thus, individual behavior is influenced not only by the external environmental factors, but also by the self-regulation of cognitive processes. In other words, what people think, believe, and feel affects how they behave (Diskell, Copper & Moran, 1994; Neck & Manz, 1996b). Specific thought-oriented strategies include self-evaluation of assumptions and beliefs, mental imagery, and positive self-talk.

Evaluating beliefs and assumptions aims to help one recognize one's dysfunctional thinking and destructive beliefs, learn to challenge them, and replace them with more constructive thoughts. Just as we develop behavioral habits that are dysfunctional, we may develop unhealthy habits in our thinking that distort feedback, which reflects what we expect instead of the objective reality (Carver & Scheier, 1998). Once feedback becomes less distorted, self-regulation effort increases in effectiveness. A survey of 3,580 managers found that thought patterns of higher performing managers significantly differed from those of lower performing managers (Manz, Adsit, Cambell, & Mathison-Hance, 1988). The study provided evidence that, compared with lower performing managers, higher performing managers place a greater emphasis on overcoming obstacles in their work contexts. Such thought patterns enable them to cope with the obstacles more effectively by directing their attention away from their personal skills deficiencies which

may impair their perceptions of self-efficacy and personal control.

Self-talk is defined as what people privately talk to themselves about (Ellis, 1975). By carefully evaluating self-talk patterns, individuals can recognize their own pessimistic self-talk and replace them with more optimistic internal dialogues (Burns, 1980; Manz & Neck, 2004). Mental imagery refers to imagining successful performance of the task prior to actual performance (Neck & Manz, 1992, 1996a). The effects of self-talk and mental imagery on performance have been empirically supported in sports psychology (Andre & Means, 1986; Ryan & Simons, 1981), clinical psychology (Bonadies & Bass, 1984; Crowder, 1989), counseling psychology (Hazler & Hipple, 1981; Morran, 1986), education (Swanson & Kozleski, 1985), and communication (Boice, 1985).

In addition, in the organizational literature, individuals who received thought self-leadership training intervention experienced increased mental performance, positive affect and job satisfaction (Neck & Manz, 1996a). Judge and Lock (1993) and Wanberg and Kammeyer-Mueller (2000) reported that employees who were less susceptible to irrational thoughts felt more positively about their jobs. To summarize, thought self-leadership strategies are designed to enhance the formation of productive thought patterns, which may lead to greater effort and persistence in the pursuit of goals.

2.3 Historical Development and Expansion of Self-leadership

Over the last three decades, modern organizations in the U.S. downsized, restructured, and moved toward decentralized, organic-type organizational structures (Conger & Kanungo, 1988) in business markets. Since individuals working within these organizations were required to take greater responsibility for their own job tasks and work behaviors (Ensley, Hmieleski, & Pearce, 2006), the notion of employees' self-regulation or self-control received considerable attention in the management literature (Kerr &

Jermier, 1978; Slocum & Sims, 1980; Luthans & Davis, 1979; Manz & Sims, 1980, 1987).

The concept of self-regulation or self-control originated in the field of clinical psychology (Cautela, 1969; Kanfer & Karoly, 1972; Mahoney & Arnkoff, 1978, 1979; Thoresen & Mahoney, 1974). As stated by Thoresen and Mahoney (1974): "a person displays self-control when in the relative absence of immediate external constraints he or she engages in behavior whose previous probability has been less than that of alternatively available behaviors" (p.12). Self-control researchers propose that individuals could exert self-control in clinical contexts by applying several self-influence strategies designed to help them to eliminate self-destructive behaviors (e.g. eating disorder) and increase healthy desired behaviors (e.g. dieting, exercise). These strategies include: self-observation, self-goal setting, cueing strategy, self-reinforcement, self-punishment, and rehearsal (Kanfer & Karoly, 1972).

Inspired by the concept of "substitutes for leadership" (Kerr & Jermier, 1978), Manz and Sims (1980) further applied the concept of self-regulation and self-control strategies to organizations to introduce the term "self-management". Drawing from the cybernetic control theory (Luthans & Davis, 1979; Andrasik & Heimberg, 1982; Carver & Scheier, 1981), Manz and Sims (1980) suggested that an individual's self-regulation process may work like an operation of a mechanical thermostat. A thermostat detects the deviation between the current temperature and a given standard and signals appropriate action to reduce the discrepancy (Neck & Houghton, 2006). In a similar vein, individuals in organizations possess self-generated goals and standards, engage in self-evaluation processes (comparing the current performance level with the self-set standards) and self-administer rewards and punishment based on their judgment about their success in reducing the performance discrepancy from existing standards or goals (Manz & Sims, 1980). Manz and Sims (1980) delineated various "self-management" strategies used by

individuals to manage their goal-striving behaviors. These self-management strategies became the basis for self-leadership's behavior-focused strategies (Manz 1986; Manz & Neck, 2004).

In the mid-1980s, Manz (1986) introduced the concept of self-leadership, as an expansion of self-management. Manz (1986) describes self-leadership as a "a comprehensive self-influence perspective that concerns leading oneself toward performance of naturally motivating tasks as well as managing oneself to do work that must be done but is not naturally motivating" (p. 589). Manz (1986) stresses that self-leadership is a broader view of self-influence which goes beyond self-management in respect of three important elements: (1) the reduction of performance discrepancy of self-leadership is based on the employees' internalized, superordinate standards of behavior rather than the external standards set by the workers' supervisors or organizations; (2) it incorporates the concept of intrinsic work motivation with strong emphasis on the natural enjoyment inherent in performing the tasks; and (3) it provides some additional self-influence strategies which include building natural rewards into tasks and also the constructive management of thought patterns (Manz & Neck, 2004; Prussia, Anderson, & Manz, 1998; Manz & Sims, 1987).

Throughout the period between the late 1980s and the early 1990s, the concept of self-leadership was largely applied in the context of self-managing work teams (Manz & Sims, 1986; 1987, 1994; Manz, 1990). In self-managed work teams, workers are given authority over work processes such as assigning work to each member, scheduling work activities, and monitoring their own performance (Cohen & Ledford, 1994). Consequently, the role of the supervisors (the formal leader) was less involved in day-to-day work activities of the teams (Fisher, 1993) but increasingly related to helping employees develop self-leadership skills (Manz & Sims, 1986). The concept of "SuperLeadership",

the process of leading workers to lead themselves, was introduced by self-leadership theorists to encapsulate this new role for supervisors for improving the productivity of self-managing work teams (Manz & Sims, 1989, 1991, 1994; Manz, 1991). One empirical study published in *Administrative Science Quarterly* in 1987 was the first to examine the role of self-leadership in self-managing teams (Manz & Sims, 1987). This study suggested that the most effective behaviors of the external leaders are those that facilitate team's self-management through self-observation and self-reinforcement.

A few years later, the theoretical conceptualization of constructive thought pattern strategies was more fully developed (Manz & Neck, 1991; Neck & Manz, 1992). Neck & Manz (1996a) conducted a training-intervention based field study and demonstrated the practical value of constructive thought self-leadership. The results of this study suggested that employees who attended the thought self-leadership training reported higher mental performance, positive affect (enthusiasm), and job satisfaction than those not attending the training (Neck & Manz, 1996a). Throughout the last 20 years, self-leadership theorists have further advocated the application of self-leadership concepts in a wide range of management settings such as performance appraisals (Neck, Stewart, & Manz, 1995); organizational change (Neck, 1996); total quality management (Neck & Manz, 1996b); entrepreneurship (Neck, Neck, & Manz, 1997) ; diversity management (Neck, Smith, & Godwin, 1997); team performance (Stewart & Barrick, 2000); and succession planning (Hardy, 2004) .

2.4 Empirical Research of Self-leadership and Associated Outcomes

Although self-leadership has enjoyed substantial popularity as reflected by a large number of practitioner oriented self-leadership books and articles (e.g., Blanchard, 1995; Cashman, 1995; Manz & Neck, 2004; Manz & Sims, 2001), the majority of self-leadership has been conceptual with a lack of empirical studies examining the individual level of self-leadership in organizational settings (Neck & Houghton, 2006).

While self-leadership theory indicates three different sets of self-influence strategies (Manz, 1986; Neck & Manz, 2004), most empirical research has narrowly focused on a single category of self-leadership strategies such as behaviour-focused strategies or self-management (Frayne & Latham, 1987; Latham & Frayne, 1989; Frayne & Geringer, 2000; Neck & Manz, 1996a; Politis, 2005; Houghton & Jinkerson, 2007). It is noteworthy that previous research studies reported mixed findings in respect of the relationship between a single set of self-leadership behaviors and work outcomes (Langfred, 2000; Uhl-Bien & Graen, 1998). For example, Uhl-Bien & Graen (1998) found that behavior-focused self-leadership strategies showed a strong, positive relationship with effectiveness in function work units, but a weak relationship with effectiveness in cross-functional teams. Moreover, while Frayne & Geringer (2000) indicated that training of behavior-focused strategies provided for salespeople could significantly improve their ratings of performance appraisal, Neck and Manz's (1996a) training intervention study of thought self-leadership found no significant differences between the training and control group in performance ratings. In view of these mixed findings, it is argued that past investigations of one narrow aspect instead of a full set of self-leadership strategies may fail to capture the whole impact of self-leadership on work outcomes (Millikin, Hom, & Manz, 2010).

The relationship between the fully conceptualized constellation of self-leadership and job performance has received limited empirical attention in organizational settings. In one study, Prussia, Anderson, and Manz (1998) found that a general combination of self-leadership behaviors influenced self-efficacy perceptions, which subsequently positively impacted academic performance. Another study by Stewart, Carson, and Cardy (1996) found that training of behavior-focused, natural reward and constructive thinking was more effective for increasing self-directed behavior of low conscientious employees than for high conscientious employees. While these results support the positive role of self-leadership in goal-focused behavior, neither of these two studies focused on the relationship between self-leadership and actual job performance. Thus, empirical evidence is lacking concerning the effectiveness of self-leadership on employees' productivity.

In sum, while a few research studies discussed above supported a positive relationship between a specific component of self-leadership and work-related outcomes, the extent to which the constellation of self-leadership strategies is associated with work outcomes, especially job performance, is less understood. One of the major objectives of this study is to bridge this research gap by exploring the relationship between a general combination of self-leadership strategies and work outcomes. In Chapter 6 of this thesis, further theoretical discussion about the impact of self-leadership on work outcomes such as performance ratings, objective work performance and job satisfaction is presented.

2.5 Empirical research of the Contextual Factors of Self-leadership

In addition to the need for further research on the link between self-leadership and organizational outcomes, some researchers call for more research to examine whether the effectiveness of self-leadership depends on the context (Stewart, Courtright, & Manz,

2011). Lord, Brown, Harvey, and Hall (2001) emphasized that leadership effectiveness, to a certain extent, depends on the situation because "leadership perceptions are grounded within a larger social, cultural, task and interpersonal environment" (p. 332). Thus, leadership practices are bounded by the contextual contingencies such as cultural differences, job characteristics, environmental stability and industry type (Avolio, 2007). In a similar vein, Markham and Markham (1995, p.349) have raised the issue about the boundary conditions of self-leadership asking whether self-leadership is "a universally applicable theory that will work with all employees under all circumstances" or a "contingency theory that best fits certain boundary conditions". To date, little research effort has been devoted to examining the boundary conditions of self-leadership. In particular, researchers have recognized the lack of research on investigating how cultures and work context shape individual's practice of self-leadership (Stewart, Courtright, & Manz, 2011).

2.5.1 Self-leadership and Culture

A number of researchers (Adler, 1997; Blunt & Jones, 1997) have noted that leadership theories typically reflect the perspective and practices associated with US cultural values. To illustrate this, Adler (1997, pp. 174-5) argues that:

> Rost (1991) concluded that leadership has most frequently been seen as rational, management-oriented, male, technocratic, quantitative, cost-driven, hierarchical, short-term, pragmatic, and materialistic. Not surprisingly, many of these listed descriptors reflect some of the core values of American culture. For example, relative to people from most other cultures, Americans tend to have a more short-term orientation (e.g., they emphasize this quarter's results and daily reported share prices), a more materialistic orientation (e.g., forty percent of American managers still think that "the bottom line" is the criterion for corporate health, whereas in no other nation can find even thirty percent of its managers who take this view; see Hampden-Turner, 1993), and a more quantitative orientation (e.g., emphasizing measurable contributions and results rather than relying on less easily quantified qualities such as success in relationship-building)

However, research comparing the application of leadership theories across cultures suggests that leadership practices are strongly bounded by cultures. In fact, Adler (1997) states that there are no universal theories of leadership that apply across national cultures despite the increase of research over the past few years on culture and leadership (Dickson, Den Hargog, & Mitchelson, 2003). In addition, Blunt and Jones (1997) have argued that the US and other Western models of leadership are not applicable to East Asian countries because these non-Western people have different mindsets concerning the leaders' roles and authority. For example, Western leaders are inclined to be more participatory in decision-making and encourage involvement and ideas from their employees. In contrast, subordinates in Asian cultures are expected to show loyalty, conformity, and deference to their supervisors voluntarily and open challenges to superiors are seen as improper and undesirable. In return, the role of Asian leaders is to provide protection and care to the subordinates (Blunt & Jones, 1997). This view is supported by the research of Jung and Avolio (1999) who found cultural differences in preference and influence of leadership styles. Their research findings suggested that leadership styles that emphasized relationships between leaders and followers play an important role in performance in collectivistic cultures.

In a similar vein, it has been argued that self-leadership is also influenced by cultural orientations (Alves et al., 2006). Drawing on Hofstede's (1980, 2001) cultural dimensions framework, Alves et al. (2006) highlighted how the application and understanding of self-leadership may differ across cultures and argued that "the examination of self-leadership from a global perspective should not be made independent of cultural dimensions" (p. 356). These authors considered that each element of Hofstede's cultural framework, high-low power distance, high-low uncertainty avoidance, collectivism-individualism, masculine-femininity, and long-term-short-term orientation, could potentially impact

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cultural representations of self-leadership. For example, masculine cultures reflect assertiveness, toughness, material and economic aspects of life, while feminine cultures reflect nurturing, social relations, and quality of life (Hofstede, 2001). Alves et al. (2006, p. 354) suggested that "as a concept that originated in the USA, self-leadership reflects a degree of masculinity, which is particularly evident in the natural rewards component for its emphasis on tasks rather than relationships… when applying self-leadership to a feminine culture, for example Sweden, one might want to consider natural rewards that are based on both tasks and relations".

To date, self-leadership has developed largely within the context of the individualistic culture of the USA and little research has been devoted to examining self-leadership in non-Western contexts (Neck & Houghton, 2006). As a result, the usefulness and applicability of self-leadership should be examined across a variety of national cultures. Indeed, such efforts are already under way. For example, Georgianna (2007)'s cross-cultural research was the first study to examine the influence of culture on young adults' use of self-leadership strategies. This study provided evidence that the US respondents expressed higher levels of self-leadership than the Chinese respondents. However, the reliability of the findings was open to question as each self-leadership strategy was measured by only one item and so may not adequately capture the theoretical conceptualization of self-leadership proposed by self-leadership theorists (Manz, 1986; Manz & Sims, 1980; Manz & Neck, 2004). Alves et al. (2006), based on Hofstede's (1980, 2001) cultural dimensions framework, also examined how differences in national cultures impact on the understanding and meaning of the concept of self-leadership. However, Alves et al.'s (2006) only provided a conceptual framework for the cultural analysis of self-leadership which has not been tested empirically.

In summary, the majority of self-leadership research has been conducted in the U.S.

The intercultural aspects of self-leadership have not been fully explored to date. Consequently, cross-cultural research on examining how national cultures shape the emergence and outcomes of self-leadership has lagged behind (Neck & Houghton, 2006; Alves et al., 2006). One reason for the lack of cross-cultural empirical research on self-leadership may be due to the fact that a reliable measurement scale which is applicable across Eastern and Western cultures has not been developed (Neck & Houghton, 2006). Indeed, Neubert and Wu (2006) conducted a first study to examine the psychometric properties and construct validity of the Houghton and Neck (2002) Revised Self-leadership Questionnaire (RSLQ) in a Chinese context. They found that four out of nine self-leadership factors had unsatisfactory reliability and failed to emerge in the same manner as factors found in Houghton and Neck (2002)'s original validation study conducted in the U.S. context. This suggested that although RSLQ was found to be a valid scale with promising reliability and construct validity in USA samples (Houghton & Neck, 2002), its generalizability to the Chinese context was problematic. Thus, there is a pressing need to develop a valid self-leadership scale that is applicable across Eastern and Western cultures.

The purpose of the present research is to address this gap by modifying self-leadership scale to enhance its construct validity and reliability, as well as its generalizability to the Chinese context. As noted earlier, detailed discussion about the scale refinement of self-leadership would be provided in Chapter 3 which is a published journal paper (Ho & Nesbit, 2009). Next, to further ensure that the English and Chinese version of self-leadership questionnaire (MSLQ) is a reliable scale that could be used for making cross-cultural comparison research, multi-group confirmatory factor analysis (MGCFA) was conducted to test whether the MSLQ possess measurement equivalence. In-depth illustration of the statistical procedure of measurement invariance would be

provided in Chapter 4, which is another published paper (Ho, Nesbit, Jepsen, & Demirian, 2012). Finally, given that the MSLQ is equivalent between the Chinese and Australia students that enable meaningful cross-cultural comparisons of self-leadership behaviors, further explorations of how national culture shapes the practice of self-leadership is undertaken. Such empirical research would be presented in Chapter 5.

2.5.2 Self-leadership and Work Context

Concern for the contingent factors of self-leadership has led some researchers to question whether self-leadership should be encouraged across all types of situations. In response to these concerns, Houghton and Yoho (2005) have presented a comprehensive contingency leadership model that described the circumstances and situations under which self-leadership should be encouraged. The model suggests certain key contingency factors, including follower development, situational urgency and task structure, determine the effectiveness of several leadership approaches such as directive, transactional, transformational and empowering. In particular, Houghton and Yoho (2005) pointed out that empowering leadership style would be most appropriate for followers in unstructured task environments involving creative, analytical or intellectual work with high discretion in decision-making. Indeed, Manz, Mossholder, and Luthans (1987) have stated that self-leadership will be more or less effective depending on the work context in which the self-influence process is executed. For example, routine tasks with predictable workflows, allow management to install control systems that requires little individual discretion (Slocum & Sims, 1980) and minimal cognitive involvement on the part of the individual (Van de Ven, 1979). In contrast, creative and non-routine tasks such as performing an entrepreneurial function or designing a new product demand greater flexibility, and higher level of cognitive involvement (Manz & Sims, 1980) on the part of the individual. This

type of task places greater responsibilities on the individuals and provides the occasion for the workers to play an active part in self-regulation (Manz et al., 1987). Furthermore, highly dynamic environments that typically require high levels of adaptability in response to the changing environmental demands (Burns & Stalker, 1961) provide workers with more opportunity to control the workflows and hence require higher level of self-regulation (Manz et al., 1987).

The above discussion points to the conclusion that work that give employees higher degree of autonomy and flexibility over how the work is done would influence the appropriateness of self-leadership (Manz & Sims, 1994; Manz & Neck, 2004). However, empirical research investigating the impact of work contexts were only conducted for the team level of self-leadership (Stewart & Barrrick, 2000; Liden, Wayne, & Bradway,1997; Landfred, 2005). Liden, Wayne, and Bradway (1997) further demonstrated that increasing group control over decision in self-managing work teams results in high performance only for team characterized by high task interdependence. Landfred (2005) replicated this finding in that team-level autonomy was found to positively affect team performance only under conditions of high task interdependence. Despite the fact that the moderating effect of task characteristics seems to hold for team self-leadership, very little empirical research has been done to examine individual-level job autonomy as a potential moderator to the relationship between individual self-leadership and work outcomes.

In sum, the identification of boundary conditions of self-leadership largely remains unexplored (Manz, et al., 1987; Manz & Sims, 1994; Neck & Houghton, 2006). To address these issues, the study discussed in Chapter 6, seeks to examine the extent to which job autonomy experienced by employees moderates the influence of self-leadership on job performance and job satisfaction. Full discussion of this research will be provided in Chapter 6 of this thesis.

CHAPTER THREE - STUDY ONE

A REFINEMENT AND EXTENSION OF THE

SELF- LEADERSHIP SCALE FOR THE

CHINESE CONTEXT

Author: Jessie Ho[1], Paul L. Nesbit[1]

[1]Macquarie Graduate School of Management, Macquarie University, Australia.

Statement of Contributions of Joint Authorship

Jessie Ho: **(Candidate)**

synthesized and summarized literature, provided conceptual overviews, writing of manuscript, designed research methodology, conducted data analysis, and preparation of tables.

Paul L. Nesbit: **(Thesis Supervisor)**

supervised and assisted with manuscript editing and co-author of manuscript.

Chapter Three

Linkage of Paper to Thesis Objectives

This chapter is a journal article which has been published in the *Journal of Managerial Psychology*. It presents research related to the modification of an existing self-leadership scale (RSLQ). As discussed in chapter 1, most empirical research of self-leadership has been conducted mainly in the United States. Due to the lack of a valid self-leadership measurement scale which is applicable across Eastern and Western cultures, little empirical research has been done to examine whether the theory of self-leadership could be applied in a non-western context. The purpose of the study is to modify the existing self-leadership scale (RSLQ) in order to make the application of self-leadership theory and measurement more relevant to the Chinese culture. As noted in Chapter 1, the outcome of this research may provide researchers with a useful scale used for conducting self-leadership research in Eastern cultural contexts. Furthermore, two subsequent research studies of the thesis would further utilize this modified scale to examine how culture influence individuals' practice of self-leadership strategies and the associations between self-leadership and work outcomes in Chinese organizational settings.

Study One: A Refinement and Extension of the Self-leadership

Scale for the Chinese Context

Abstract

Purpose:

Although the measurement of self-leadership (RSLQ) has been developed and validated with samples from the US with promising reliability and construct validity, its generalizability to the Chinese context is problematic. The purpose of the study is to modify the existing self-leadership scale (RSLQ) in order to make the application of self-leadership theory and measurement more relevant to the Chinese culture. This modification includes: (1) enhancing the generalization of self-leadership measurement to the Chinese context by refining the items of four existing dimensions (self-observation, evaluations of beliefs and assumptions, natural rewards, and self-punishment) found to have low-reliabilities in one previous validation study; and (2) extending the breadth of some self-leadership components based on the cross-cultural theory about self-concept differences between individualism and collectivism. Three self-leadership subscales are newly developed through extending three self-leadership components (natural rewards, self-observation and evaluating beliefs and assumptions) with the incorporation of social/relation-based features associated with collectivism.

Design/methodology:

The modified RSLQ was administered to 569 Chinese students. The reliability and construct validity of this modified self-leadership scale was explored using exploratory

(EFA) and confirmatory factor analysis (CFA). Test of association with self-efficacy was also examined.

Findings

Results from the EFA demonstrated good reliability and stable factor structure for the modified scale and CFA demonstrated acceptable model fit for 11 factors of the modified self-leadership scale. Most notably, the refinement of four existing dimensions (self-observation, evaluations of beliefs and assumptions, natural rewards, and self-punishment), which had failed to reach acceptable levels of reliability in Neubert and Wu's (2002) Chinese sample, showed increases above the commonly recommended level of 0.7. Two new extended dimensions, relation-based natural rewards and social-oriented evaluation of beliefs and assumptions, consistently emerged in two independent student samples. More interestingly, the items of another extended dimensions, relation-based self-observation, consistently merged with the task-based self-observation (the original subscale) to form one factor, suggesting that in Chinese culture, task-based self-observation cannot be separated from relation-based self-observation. The modified RSLQ was also positively and strongly associated with self-efficacy.

Research limitation/implications

Further validation work is required to examine whether the refined RSLQ could be generalized to other collectivistic country such as Korea or Japan.

Practical implications

Managers will benefit from understanding how culture shapes an individual's use of self-leadership strategies.

Originality/value –

This study makes a significant contribution to the universal application and generalizability of self-leadership measurement to the Chinese population. Our validation

works supports that our modified 38-item RSLQ is a superior measure with higher internal consistency and more stable factor structure than that of the existing instrument (Houghton and Neck, 2002) which could be generalized to a Chinese context.

Introduction

The Revised Self-leadership Questionnaire (RSLQ): A Review and Assessment

Self-leadership is a self-influence process through which people seek to direct their cognitions and actions in order to reach desired goals (Manz, 1986; Manz and Neck, 2004). Individuals differ in their skills and use of self-leadership strategies and these differences can influence how effectively they achieve their goals (Manz, 1986; Neck and Manz, 1992, 1996a; Prussia, Anderson, and Manz, 1998). The self-influence process associated with self-leadership consists of specific behavioral and cognitive strategies designed to positively influence personal effectiveness (Manz, 1986; Manz and Neck, 2004). Self-leadership strategies are usually grouped into three primary categories of behavior-focused strategies, natural reward strategies, and constructive thought pattern strategies (Manz and Neck, 2004; Manz and Sims, 2001; Prussia, Anderson and Manz, 1998). Behavioral-focused strategies include using self-goal setting, self-observation, self-cueing, self-reward and self-punishment to promote effective behavior and discourage ineffective behavior (Manz and Neck, 2004). Natural reward strategies are designed to leverage intrinsic motivation to enhance performance (Manz and Neck, 2004). Constructive thought strategies involve visualizing performance, engaging in positive self-talk, and examining individual beliefs and assumptions to align cognitions with desired behavior (Neck and Manz, 1996a; Neck et al., 1995).

Despite the potential use of self-leadership strategies in organizations, the majority

of self-leadership research has been conceptual with only a few empirical studies examining its application in organizational settings. This lack of extensive empirical research may be due to the fact that a valid self-leadership measurement scale has been slow to development (Neck and Houghton, 2006). The first published self-leadership assessment instrument, Anderson and Prussia's (1997) 50-item Self-Leadership Questionnaire (SLQ), was based to a large extent on self-leadership research of Manz and Sims (1991) and Manz (1992). Nevertheless, the Anderson and Prussia SLQ suffered from a number of psychometric problems and required further refinement. Subsequently, a revised Self-Leadership Questionnaire (RSLQ) has been developed (Houghton and Neck, 2002) and has shown a greater degree of reliability and construct validity than the earlier SLQ. Working with the Anderson and Prussia scale, Houghton and Neck (2002) eliminated ambiguous items that loaded on unanticipated factors, dropped a factor related to self-withholding, reworded a few items and added items to enhance the natural rewards dimensions. Confirmatory factor of the resulting RSLQ displayed nine stable factors: (1) visualizing successful performance; (2) self-talk; (3) self-goal setting; (4) self-reward; (5) self-punishment; (6) natural rewards; (7) self-observation; (8) evaluating belief and assumptions; and (9) self-cueing (Houghton and Neck, 2002).

The cross cultural validity of the RSLQ scale was explored by Neubert and Wu's replication study (2006) in a Chinese context. Alpha coefficients for RSLQ sub-scales in their sample ranged from 0.45 to 0.72 and using the Nunnally (1978) criteria of 0.70, five out of nine sub-scales failed to yield acceptable levels of reliability. In their post hoc analyses, the best fitting model was a five-factor model that included the factors of goal setting, visualizing successful performance, self-talk, self-reward, and self-punishment. Natural rewards, self-observation, evaluating beliefs and assumptions, and self-cueing did not uniformly generalize to the Chinese context. These findings indicate that some RSLQ

items may not be understood by Chinese respondents in the same manner as US respondents used in the development of the RSLQ. Furthermore, since self-leadership has developed largely within the context of the culture of U.S., such findings may reflect the fact that some conceptual dimensions of self-leadership may be culturally bound.

The purpose of this study is to address the cross-cultural application problem of self-leadership measurement in a non-Western context. Based on cross-cultural theory (Hofstede, 1984, 2001; Hofstede & Bond, 1984) highlighting differences between individualist and collectivist societies, we refine and extend the existing RSLQ in order to enhance its generalizability to a Chinese context. First, we discuss the cross-cultural theory of individualism/collectivism and propose how differences between people with these different cultural values may influence their self-leadership behaviors. In particular, we extend three component dimensions of RLSQ, namely natural rewards, evaluation of beliefs and assumptions, and self-observation by incorporating the concept of relationship building, which is conceptualized as more relevant for the Chinese culture (Alves et al, 2006). Next, we briefly discuss how we refine those ambiguous items of some self-leadership existing subscales found to have low reliabilities in Neubert and Wu's (2006) cross-cultural validation study. We report the results of an exploratory factor analysis (n = 284). Finally, we use confirmatory factor analysis to examine the model fit and factorial structure of the data of the modified RSLQ scale in a second validation study (n = 285). In addition, we also further confirm the construct validity of self-leadership by examining the association of the modified scale with one outcome variable- general self-efficacy. Implications of the scale improvement are discussed and a future research agenda is proposed.

Cross-cultural perspective in extending the measurement of self-leadership

A number of researchers (Adler, 1997; Blunt and Jones, 1997) have noted that leadership theories typically reflect the perspective and practices associated with US cultural values. Blunt and Jones (1997) have argued that US and other Western models of leadership are not applicable to East Asian and African developing countries because these non-Western people have different viewpoints in terms of authority, loyalty and interpersonal relations. This view is supported by the research of Jung and Avolio (1999) who found cultural differences in preference and influence of leadership styles. Their research findings suggested that leadership styles that emphasized relationships between leaders and followers play an important role in performance in collectivistic cultures.

While emerging Western perspectives on transformational leadership also emphasizes the importance of leaders developing effective relationships with and among employees (Bass, 1997; Chen & Farh, 2001), Asian leaders have traditionally been concerned about relationships within the workplace (Hwang, 1987; Jacobs, 1980). Based on the collectivist, harmony, and social order values of Asia, paternalistic leaders expect employee obedience, and develop personal caring, and open relationships where they discuss and dialogue with their employees (Tjosvold, Wong, and Hui, 2004). Personal relationships, in particular, are thought to contribute to effective leadership (Hui, Law, & Chen, 1999). Studies have shown that employees with high quality relationships with leaders perform their own jobs well and are willing to contribute as good citizens to the organization (Hui, Law, and Chen, 1999; Law, Hui, and Tjosvold, 1998). For example, strong relationships helped Hong Kong managers and employees believe they were powerful, productive, and democratic (Tjosvold, Hui, and Law, 1998).

As with the general view of leadership, it has been argued that self-leadership is also influenced by cultural orientations (Alves et al, 2006). Drawing on Hofstede's (1980,

2001) cultural dimensions framework, Alves et al (2006) highlighted how the application and understanding of self-leadership may differ across cultures and argued that "the examination of self-leadership from a global perspective should not be made independent of cultural dimensions" (p.356). These authors considered that each element of Hofstede's cultural framework, high-low power distance, high-low uncertainty avoidance, collectivism-individualism, masculine-femininity, and long-term-short-term orientation, could potentially impact cultural representations of self-leadership. Of the cultural characteristics that have been identified, individualism and collectivism have received the most attention in cross-cultural organizational research (Robert, Lee, & Chan, 2006; Triandis, 1994). The essence of individualism-collectivism can be described as a culture's emphasis on the importance of membership in particular groups and one's network of relationships within them (Hofstede, 1980; Triandis 1995).

Of particular relevance to the study of self-leadership is the development and salience of cultural differences within the self-concept (Erez, 1997; Singelis, 1994; Singelis & Brown, 1995; Triandis, 1989). Markus and Kitayama's (1991) seminal work of self-concept proposed that the self is construed to be more independent among individualists from western culture and more interdependent among collectivists from Asian culture. Other cross-cultural researchers have also noted the central role of cultural orientation in shaping self-concept which, in turn, influences cognitive, affective, and motivational processes (Erez and Earley, 1993, Gudykunst et al, 1992 and Triandis, 1995), especially those relating to self-regulation (Markus and Wurf, 1987). Given our focus on the measurement of self-leadership, which is concerned with personal effectiveness, we limit our attention to the dimension of collectivism-individualism, which represents a most obvious distinction between US and Chinese cultures (Markus and Kitayama, 1991, Neubert and Wu, 2006), as the most relevant starting point to explore self-leadership in

the Chinese culture.

Collectivist and Individualist Cultures

According to Markus and Kitayama (1991), the cultures of North America and Northern and Western Europe have been identified as generally individualistic. They suggest that people in this type of culture (referred to as 'Individualists' in the remainder of the paper) possess independent self-construal. Individualists perceive a clear boundary that separates the self from others, and give higher priority to their personal goals than to group goals. Individualists value independence and the expression of one's unique configuration of needs, rights, and capacities. These people perceive themselves as consisting of a unique set of attributes that enable them to achieve independence and autonomy. Individualists also strive to establish their distinctiveness from others without being influenced by group and environmental pressures (Geertz, 1975; Sampson 1988, 1989; Waterman, 1981).

In contrast, the cultures of Easterners, such as Japanese, Chinese, and Korean, have been identified as collectivistic who possess interdependent self-construal (Markus and Kitayama, 1991). The focal point of people from these collectivistic cultures (referred to as 'Collectivists' in the remainder of this paper) is not the inner self but rather the relationships one has with others (Hamaguchi, 1985). Collectivists are motivated to find a way to fit in with significant others, to fulfill and create obligation as part of social networks. Any inner attribute such as desire, personal goal and private emotion that may disturb harmonious equilibrium of interpersonal transaction should be suppressed and restrained (Markus & Kitayama, 1991; Oyserman, 1993; Triandis, 1995). Thus collectivists strive to maintain harmony with others, exhibiting a high degree of self-control and agency that is directed to effectively adjust oneself to various interpersonal

contingencies and not just in terms of personal goal attainment. Thus in considering the nature of self-leadership in non-Western cultures, such as in Chinese cultures, more attention needs to be given to the issue of relationships and collective efforts in the measurement of relevant behaviors.

The social-oriented nature of collectivists' beliefs, which stress the close connection of one's well-being with the interests of one's group, can be traced back to the deep influence of Confucian ideology (Bond & Wang, 1983; Wright, 1962) which have shaped the social interaction of people in Eastern and Southeastern Asian countries for more than two thousand years. According to Confucianism, "righteous people" are guided by the five fundamental relationships or "wu lun" (Farh, Earley & Lin, 1997). These five relationships (emperor-subject, husband-wife, parent-child, older brother-younger brother, and older friend-younger friend) hierarchically guide the definition and actions of a person in relation to a larger social order. Tu (1985) explains that in Confucian literature, the self is often understood in terms of dyadic relationship, to the point that "a Confucian self devoid of human-relatedness has little meaningful content of its own" (p. 233). Chu (1985) likewise claims that for Chinese, the self is almost entirely defined in the context of significant others. This Confucian social conception of the self contrasts starkly with description of the American individualistic concept of the self (Bellah et al, 1985; Hsu, 1981; Leung, 1996).

Extension of Self-Leadership Measurement

In order to enhance the cross-culture application of self-leadership measurement a logical first step is to review items within factors that were found to have low reliabilities or unstable factor structure in Neubert and Wu's (2006) validation research, namely natural rewards, self-observation, evaluating beliefs and assumptions.

A closer look at the nature of these three component dimensions reflect that they are all strongly shaped by individualistic culture with a strong focus centered either on the "task" or the "person". Natural rewards emphasizes the personal intrinsic value of a task, self-observation highlights the role of observing one's actions relative to goals, and evaluating beliefs and assumptions concerns examining one's thoughts, especially self-defeating thoughts that detract from successful task performance. We suspect that these three self-leadership strategies may be more valid for individualist but less relevant for collectivists. In view of this, we have sought to suggest to extend the theoretical conceptualization of self-leadership by incorporating social/ relation-based features into the scale development of self-leadership.

Extension of Natural Reward Strategies – Relation-based Natural Reward

Self-leadership's conceptualization of natural rewards is based primarily on the intrinsic motivation literature, particularly Deci and Ryan's (1985) self-determination theory. According to Deci and Ryan (1985), an important dimension of motivated action is the extent that an activity evokes intrinsic satisfaction within the person. Intrinsic motivation is linked to activity that allows a person to feel competent, self-directed and autonomous. Feelings of autonomy and competence are a central focus in the natural rewards strategy component of self-leadership (Manz and Neck, 2004). There are two primary natural reward strategies identified within self-leadership. The first involves building more pleasant and enjoyable features into a given activity so that the task itself becomes naturally rewarding (Manz and Neck, 2004; Manz and Sims, 2001). The second strategy consists of focusing attention away from the unpleasant aspects of a task and refocusing it on those aspects the person finds engaging (Manz and Neck, 2004; Manz and Sims, 2001). These strategies assume that once activities and task can be chosen,

structured or perceived in ways that lead to increased feelings of competence and self-determination, the enjoyment of the task and the intrinsic motivation to engage in it will be enhanced, resulting in higher task performance (Neck and Houghton, 2006). However, while the importance attached to the values of autonomy and self-determination may hold true for those from western, individualistic culture emphasizing personal achievement and preferences, it may be less valid for people from Eastern, collectivist culture with a strong need of relatedness.

The view that values associated with intrinsic motivation may be culturally contingent is also supported by Iyengar and DeVoe (2003) who suggest that in cultures that foster social interdependence, people seeking to fulfill their social responsibilities and obligation are more intrinsically motivated when choices are made for them – by someone from their social in-group – than when they make their own choices. For example, Iyenger and Lepper (1999) found that the intrinsic motivation and performance of Asian American children was highest, not in contexts offering personal choice, but in those in which choices were determined for them by valued in-group members or trusted authority figure (e.g. their mothers). They conclude that, "the provision of individual choice seems to be more crucial to American independent selves, for whom the act of making a personal choice offers not only an opportunity to express and receive one's personal preference, but also a chance to establish one's unique self-identity" (1999, p.363).

Thus collectivists might actually prefer to submit to choices expressed by others if the situation enables them to fulfill the superordinate cultural goal of belongingness. The feelings of maintaining in-group harmony and belongingness rather than self-determination and competence may act as a major source of interest and enjoyment in an activity.

Thus cultural variation in preference for self-determination inherent in a task raises the question of the universal application of natural reward strategies. We argue that the inclusion of features of social relations/relatedness into natural reward strategies is necessary to enhance its generalization to other non-Western cultures. In other words, the measurement of self-leadership dimension should be extended to include relation-based natural reward strategies. We suggest that relation-based natural reward strategies may be reflected in the following ways:

1.   Identify pleasing contexts in which one could work with those people one likes.

2.   Think of pleasure gained by working harmoniously with colleague/team members.

3.   Think of enjoyment one may gain from helping colleague/team members to reach their goals.

Extension of Self-Observation Strategy – Relation-based Self-Observation

The strategy of self-observation seeks to heighten an individual's self-awareness in order to facilitate behavior management, especially the management of behaviors related to necessary but unpleasant tasks (Manz and Sims, 2004). Effective self-observation means designing systems and events so that feedback is automatically provided or relatively easy to use. For example, one may use a wall chart to keep track of the progress of self-regulatory efforts or make notes about behaviors that one see's as desirable and undesirable. Based on this foundation of self-assessment, the individual can effectively set personal goals that may lead to improved performance. (Manz, 1986; Manz and Neck, 1991; Manz and Sims, 1980).

Self-observation items in the RSLQ, focusing on individual behavior in the performance of tasks, highlight the assumed individualistic nature of people. For individualists, self-observation related to task achievement enables them to know

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themselves and to express their own unique strengths so as to improve their performance effectiveness. However, we argue that RSLQ items for task-based self-observation strategy does not adequately address the behavior of people from collectivist cultures whose self-monitoring is also associated with maintaining harmonious interpersonal relations. According to Kim et al. (1994), within collectivist cultures, attention is also focused on the creation and maintenance of harmonious social relationships within the in-group (e.g. family, work unit), sometimes even at the cost of task achievement. Indeed personal interests may be sacrificed for the sake of collective interests when there are conflicts between those interests (Parsons, 1951). Oettingen, Lindenberger, and Baltes (1995) also found that collectivists and individualists used different strategies to increase self-awareness. That is, individualists used internal information such as emotions when observing themselves, while collectivists used external information such as behavioral expectations of their in-group when observing themselves.

Since those from collectivist cultures tend to regulate their actions primarily in response to group goals and needs of those around them, the current task-based self-observation strategy does not fully capture the essence of self-awareness behaviors frequently found in collectivists. We argue that the measurement of this self-leadership dimension should be extended to incorporate relation-based self-observations behavior. We suggest that a person adopting relation-based self-observation strategies may include: (1) evaluating how well he/she could adjust oneself to meet the expectation of the authority figure and team members; and (2) keeping track of how well he/she can cooperate with his/her colleagues or team members.

Extension of Evaluating Beliefs and Assumptions Strategy – Social-oriented Evaluation of Beliefs and Assumptions

Self-evaluation of assumptions and beliefs is a constructive thought strategy that

seeks to influence or lead oneself through the purposeful control of one's thoughts (e.g. Neck and Manz, 1996a; Manz and Neck, 1991; Neck et al., 1995). Just as we develop behavioral habits that are dysfunctional, we may develop unhealthy habits in our thinking that distort feedback which reflects what we expect instead of the objective reality (Carver and Scheier, 1998). Mental distortion such as mind reading, extreme thinking, overgeneralization and mental filters (Burns, 1980; Carver and Scheier, 1998; Manz and Neck, 2004) lead to feedback distortion and ultimately impaired self-regulatory processes. Evaluating beliefs and assumptions aims to help one recognize one's dysfunctional thinking and destructive beliefs, learn to challenge them, and replace them with more constructive thoughts. Once feedback becomes less distorted, self-regulation effort increases in effectiveness. A survey of 3,580 managers found that thought patterns of higher performing managers significantly differed from those of lower performing managers (Manz et al., 1988).

The current item questions on the RSLQ are likely to be more suitable to individualistic cultures where evaluating one's own belief and assumption is more appropriate for individualists who intend to regulate themselves by reference to one's own internal repertoire of thoughts, feelings, and actions. Examples of these item questions are: (1) I try to mentally evaluate the accuracy of my own beliefs about situations I am having problems with; and (2) I think about my own beliefs and assumptions whenever I encounter a difficult situation.

Thus this strategy has highlighted individual-oriented thoughts and beliefs as it focuses on self-referent thinking which directs attention to how one reflects on personal thinking processes to increase personal task success. Since collectivists are motivated to find a way to fit in with relevant others, to fulfill and to create obligation in order to become part of various interpersonal relationships (Markus and Kitayama, 1991), it is

argued that they also tend to adjust their own beliefs and assumptions to avoid conflicts and maintain harmony with those of their in-group (Geetz, 1975). This self-monitoring approach by collectivists relates to the Confucian belief that the future of individuals from the same in-group is inter-related and that each person's well-being depends upon the results of collective effort (Leung, 1996).

We argue that the dimension of evaluating beliefs and assumptions should be extended to include reference to the thoughts, feelings, and actions of others (Geetz, 1975). We suggest the social-oriented strategy of evaluating beliefs and assumptions may include the following behaviors:

(1) Identify any beliefs and assumptions that differ from others' opinions and adjust them accordingly to avoid conflict in order to maintain harmony.

(2) Evaluate whether one's own thinking can fit in with the opinions of one's boss or team members.

In summary, we have argued that the strategies of natural rewards, self-observation and evaluating beliefs and assumptions proposed by Sims and Manz (1996) are oriented toward an independent self more suitable for individualists to achieve their personal goals. We propose to extend these dimensions to make the self-leadership scale more relevant to the Chinese cultural context by developing additional new scales to measure the relation-oriented nature of natural rewards, self-observation and evaluation of beliefs and assumptions. These new leadership dimensions complement but do not replace the existing scales of natural rewards, self-observation strategies and evaluation of beliefs and assumptions derived from Houghton and Neck's (2002) RSLQ. Given that we have argued that these existing scales reflect individualistic and task-focused values we will refer to these existing scales as "task-based natural rewards", "task-based self-observation" and "individual-oriented evaluation of beliefs and assumptions", in the

remainder of the paper, to clearly differentiate them from the new social/relations based scales.

In the remainder of this paper we outline a study that examined the psychometric properties and construct validity of this modified version of the RSLQ. We used exploratory factor analysis to examine the modified RSLQ factor structure and to facilitate comparisons with the original RSLQ. We also conducted confirmatory factor analysis to further examine the construct validity and factor stability for the modified version of self-leadership. As a further measure of construct validity of the modified RSLQ, we examined its relationship to the construct of self-efficacy. Self-efficacy is perhaps the single most commonly mentioned self-leadership outcome variable (e.g. Manz, 1986; Manz and Neck, 2004; Neck and Manz, 1992; Prussia et al., 1998). Empirical research (e.g. Neck and Manz, 1996; Prussia et al.., 1998) has provided significant evidence in support of self-efficacy as the primary mechanism through which self-leadership affects performance.

Method

Participants

The present study was conducted within the Chinese setting of Hong Kong. Before 1 July 1997, Hong Kong was a British colony that had functioned with legal environment similar to that of the U.S. (Bond and King, 1985). Although compared with the society of People's Republic of China (PRC), Hong Kong is a modern Westernized city. Nevertheless, the people of Hong Kong and Mainland China share a common cultural heritage (Jarvie and Agassie, 1969; Ralston et al. 1992; Fu et al., 2004). They celebrate the same folklore festivals, observe the same traditional values and all worship Confucianism, and share a strong sense of family ties and belonging (Salili, 1994).

Participants in the study were a sample of 590 local Chinese students undertaking management studies at a community college in Hong Kong. Listwise deletion of missing data resulted in a final sample size of 569 students. The whole data set was randomly split into two halves. One half constituted the calibration sample used for exploratory factor analysis (sample 1: n = 284; 44% male, 56% female) and the other half constituted the validation sample using confirmatory factor analysis (sample 2: n = 285; 43% male, 57% female). Mean age in both samples was 20. The questionnaires were completed anonymously and participation was voluntary.

Measures

Self-Leadership: Self-leadership was measured using a 47 item modified RSLQ. This included 33 original 35-item RLSQ of the Houghton and Neck's (2002), plus 14 new items (See table 1 for a complete listing of new items). Ten out of 14 items were particularly developed for three new dimensions used for extending self-leadership to better reflect the issue of relationship orientation. These new dimensions are: (1) relation-based natural rewards; (2) relation-based self-observation; and (3) social-oriented evaluation of beliefs and assumptions. Four new items were developed to reflect the relation-based natural rewards, which seeks to measure a person's tendency in finding enjoyment through maintaining social relations, group harmony and belongingness. Example items include: "I focus my thinking on the good feeling I gain by working harmoniously with the colleague/team members"; "I find my own favorite ways to meet my team members' needs". Three new items were developed to reflect the dimension of relation-based self-observation and measure a person's tendency to keep track of their performance in meeting the expectation of authority figures or group members. An example item is: "I keep track of how well I fulfill the expectation of my supervisor/team

members." Another three items were created to reflect social-oriented evaluation of beliefs and assumptions. These items seek to measure a person's tendency to identify their own beliefs and assumptions in conflict with the opinions of their group members and authority figures. An example item is: "When I differ from others' opinions, I will improve my thinking to avoid conflicts so as to maintain harmony."

Three additional new items were developed for the dimension of task-based natural rewards to better reflect the concept that natural rewards are related to enjoyment derived from performing the tasks instead of external rewards which are received upon task completion, such as external recognition, a pay, or bonus (see new items 1, 2 and 3 in Table 1).

Self-Efficacy: Self-efficacy was measured using a 10-item scale developed by Schwarzer and Jerusalem (1995). Participants rated themselves on a Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). Previous studies have shown the psychometric characteristics of the scale to be adequate, yielding internal consistencies between 0.75 and 0.91. Example Item is: "I am confident that I could deal efficiently with unexpected events".

Translation

Before the modified RSLQ and self-efficacy items could be administered to the Hong Kong respondents, translation into the Chinese language was required. We followed Brislin's (1980) translation/back-translation procedure to create a Chinese version of the questionnaire. The first author translated the original RSLQ from English into Chinese to create the first Chinese RSLQ. The first author was bilingual (Chinese & English) and had lived in the United States for 4 years. After the Chinese RSLQ was generated, a translation professional back translated it to English as a check for consistency. Three

lecturers of Hong Kong Polytechnic University, who were fluent in both Chinese and English also examined the translated versions and concurred with the translations.

Content validation

For scale development of the three new extensions of self-leadership dimensions, relation-based natural rewards, relation-based self-observation and social-oriented evaluation of beliefs and assumptions, we asked three subject matter experts who are Chinese psychologists having a Ph.D. degree with academic background in cross-cultural psychology to review these new items and to determine whether the items could effectively reflect the conceptual definition of each dimension incorporating the social orientation of the collectivists. They all agreed that all new items are valid for measuring each extended dimension of self-leadership.

Next, the modified RSLQ were distributed to eight college lecturers who volunteered to participate as judges in the validation exercise. These judges included three lecturers teaching the subject of Management, two lecturers teaching the subject of Psychology, and three lecturers teaching the subject of Organizational Behavior. The examination of content validity involved two steps. First, the eight judges were asked to review all items of the modified RSLQ. Respondents were asked to identify any item with ambiguous wording. In total six items were considered to have unclear meanings. Three existing items relating to the dimension of "individual-oriented evaluation of beliefs and assumptions" appeared to be vague. These three items were reworded to reflect the conceptualization of identifying and replacing dysfunctional beliefs and assumptions:

(1) the phrase "I think about my own beliefs and assumptions…" was changed to "I evaluate whether I have any dysfunctional thinking……;

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(2) "I think about and evaluate the beliefs and assumptions I hold." was changed to "I will evaluate my thinking to see if it exerts any negative impact on my tasks."; and

(3) "I openly articulate and evaluate my own assumptions when I have a disagreement with someone else" was changed to "I will review whether my judgment has been too negative when facing problems." We also developed one more new item (see item 14 in table 1).

Another three existing items relating to the dimension of self-punishment and task-based self-observation which were perceived by judges to be ambiguous, were also amended. The phrase "I tend to be tough on myself in my thinking…." was changed to "I tend to blame myself…"; and the phrase "I sometimes openly express displeasure with myself…" was changed into "I sometimes feel displeasure with myself…." Additionally, the item "I make a point to keep track of …" was changed to "I examine myself how well…." to better measure task-based self-observation behaviors. (For complete listing of these amended items, please refer to reworded items 1-6 in table 1).

Next, the eight judges were provided with definitions of the 12 dimensions (including the three new dimensions) of the modified RSLQ and asked to match items with the corresponding definition. Items assigned into predicted scales indicate that the items assessed the specified dimension whereas items assigned to other than the theoretically specified dimensions suggest extraneous content (American Psychological Association, 1985). The agreement of the judges in matching items to their corresponding theoretical categories were higher than 87% for each item except two existing items which fell below 50%. Both of these two items measure task-based natural rewards. One item was incorrectly classified by some judges as task-based self-observation, whereas another item was incorrectly assigned by some judges as the dimension of relation-based self-observation or goal setting (see dropped item 1 and 2 in Table 1). Typically items

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with low agreement among judges (less than about 60%) are dropped (Kinicki & Latack, 1990). As a result, we excluded these two items in our study leaving the modified RSLQ with 47 items.

Pilot study of the modified RSLQ

After the back-translation was completed, we undertook a pilot study and administered the modified 47-item RSLQ to 20 Hong Kong tertiary students undertaking business studies. All of the respondents replied that they could clearly understand the meaning of each item and they could answer the questionnaire within 15 minutes.

Analyses

To investigate the item loading pattern of the 47 items making up the modified version of RSLQ we administered it to our first subsample (n=284) to conduct an exploratory factor analysis (EFA). We used a principal-components factor analysis with varimax rotation.Consistent with previous research (Anderson and Prussia, 1997; Houghton and Neck, 2002), 0.35 was chosen as the minimum value to determine whether an item loaded on a factor. In addition, the "eigenvalue greater than one test" was used to define factors (Gorsuch, 1974). Following the exploratory stage, we used a second independent sample to examine the stability of factor structures through confirmatory factor analysis (CFA). Those items that had factor loadings less than 0.35 in the anticipated factor and items that had cross loadings on incorrect factors greater than 0.4 were excluded from the CFA as they would affect the model fit of modified self-leadership scale (Neff, 2003; Towler and Dipboye, 2003)

Table 1. Modification Summary of RSLQ Scale

New items	Domain
1. My thinking focuses more on the things I like about actually doing my work than on benefits I expect to receive.	Task-based natural rewards
2. I think that the enjoyment gained from work is more important than external rewards.	
3. I try to get enjoyment in the work process rather than in the benefit I plan to gain.	
4. I try to think of the pleasure obtained from fitting myself in with my colleagues/team members I work with.	Relation-based Natural Reward
5. I focus my thinking on the good feeling I gain by working harmoniously with the colleague/team members.	
6. I find my own favorite ways to meet my team members' needs.	
7. I think of the enjoyment I gain from helping colleagues/team members reach their goals.	
8. I keep track of how well I fulfill the expectation of my supervisor/team members.	Relation-based self-observation
9. I am usually aware whether I could adapt to the expectation of my supervisor/team members when I perform an activity.	
10. When keeping track of my progress on projects, I pay attention to how well I cooperate with my colleagues/team members.	
11. When I differ from others' opinions, I try to avoid conflicts so as to maintain harmony.	Social-oriented Evaluation of Beliefs and Assumptions
12. I examine whether my thinking can fit in with the opinions of my colleagues and team members	
13. When I have conflicts with my colleagues/team members I evaluate my thinking to see if there is anything wrong.	
14. I try to evaluate the consequences of my negative thinking.	Individual-oriented Evaluation of Beliefs and Assumptions

Original RSLQ Items dropped in this study	Domain
1) I focus my thinking on the pleasant rather than the unpleasant aspects of my job activities	Task-based natural rewards
2) I try to surround myself with the objects and people that bring out my desirable behaviors.	

Reworded items		Domain
Original item in RSLQ	Reworded item	
1. I tend to be tough on myself in my thinking when I have not done well on a task	I tend to blame myself when I have not done well on a task	Self-punishment
2. I sometimes openly express displeasure with myself when I have not done well.	I sometimes feel displeasure with myself when I have not done well	Self-punishment
3. I make a point to keep track of how well I'm doing at work (school).	I examine how well I'm doing at work (school).	Task-based self-observation
4) I think about my own beliefs and assumptions whenever I encounter a difficult situation	I evaluate whether I have any dysfunctional thinking whenever I encounter a difficult situation.	Individual-oriented evaluation of beliefs and assumptions
5) I think about and evaluate the beliefs and assumptions I hold	I will evaluate my thinking to see if it exerts any negative impact on my tasks.	
6) I openly articulate and evaluate my own assumptions when I have a disagreement with someone else	I will review whether my judgment has been too negative when facing problems	

Results

Exploratory Factor Analysis (EFA)

An initial principal component factor analysis using varimax rotation was performed on the 47 item scale. Exploratory factor analysis of the modified RSLQ yielded 12 factors with eigenvalues greater than 1 that explained 64% of the variance. These 12 factors had eigenvalues ranging from 1.29 to 4.12 and accounted for 8.7%, 6.23%, 6.21%, 5.96%, 5.81%, 5.65%, 5.52%, 5.185%, 4.4% 3.97%, 3.11% and 2.75%. Table 2 presents the factor structure of thee modified RSLQ derived from this analysis, showing the factors, their component items and their factor loadings. One factor was eliminated because it was not interpretable as it did not make any conceptual sense. (Please refer to factor 12 on Table 2 for this excluded factor. Reanalysis without this factor did not substantially change our factors or loadings). All the remaining 11 factors loaded in a pattern broadly consistent with our theoretical expectation. Nine of these remaining 11 factors were the same as the original nine factors identified by Houghton and Neck's (2002). Two factors were represented by our newly developed measures of relation-based natural rewards and social-oriented evaluation of beliefs and assumptions. Interestingly, relation-based self-observation (the newly developed measure) items, which we had expected to be a separate factor, merged with the original task-based items to form a single factor.

Reliability analyses were conducted on each factor of the modified RSLQ. Coefficient alphas for each self-leadership factor are shown in Table 2. Using the Nunnally (1978) criteria of 0.70, all factors yielded acceptable levels of reliability except social-oriented evaluation of beliefs and assumptions which was marginal ($\alpha = 0.64$). For comparison purposes, coefficient alphas noted by Houghton and Neck's (2002) for the four original RSLQ factors on which we carried out item modification (Factors 5,6,8, and 9, in table 2), are also shown in parenthese

Table 2. Factor structure of the modified version of RSLQ (sample 1 data)

Factor loadings	1	2	3	4	5	6	7	8	9	10	11	12
Factor 1: visualizing successful performance (scale α = 0.65)												
1. I use my imagination to picture myself performing well on important tasks.	0.682											
12 I visualize myself successfully performing a task before I do it.	0.591											
24 Sometimes I picture in my mind a successful performance before I actually do a task.[a]	0.226											
36 I purposefully visualize myself overcoming the challenges I face. [a]	0.025											
39 I often mentally rehearse the way I plan to deal with a challenge before I actually face the challenge. [a]	0.263											
Factor 2: self-goal setting (scale α = 0.76)												
2. I establish specific goals for my own performance. [b]		0.550										
13 I consciously have goals in mind for my work efforts.		0.576										
17 I work toward specific goals I have set for myself.		0.576										
25 I think about goals that I intend to achieve in the future.		0.719										
42 I write specific goals for my own performance.		0.532										
Factor 3: Self-talk (scale α = 0.81)												
3. Sometimes I find I'm talking to myself (out loud or in my head) to help me deal with difficult problems I face.			0.660									
26 When I'm in difficult situations I will sometimes talk to myself (out load or in my head) to help me get through it.			0.741									
45 Sometimes I talk to myself (out loud or in my head) to help me get through it			0.805									
Factor 4: Self-reward (scale α = 0.88)												
4. When I do an assignment especially well, I like to treat myself to some thing or activity I especially enjoy.				0.805								
14 When I do something well, I reward myself with a special event such as a good dinner, movie, shopping trip, etc.				0.869								
27 When I have successfully completed a task, I often reward myself with something I like.				0.830								
Factor 5: Self-punishment (scale α = 0.80 (0.58))												
5. I tend to get down on myself in my mind when I have performed poorly.					0.677							
15. I tend to blame myself when I have not done well on a task.					0.794							
28. I feel guilty when I perform a task poorly.					0.830							
34. I sometimes feel displeasure with myself when I have not done well.					0.755							
Factor 6: Task-based Natural Reward (scale α = 0.74 (0.63))												
6. My thinking focuses more on the things I like about actually doing my work than on benefits I expect to receive.						0.621						
16. When I have a choice, I try to do my work in ways that I enjoy rather than just trying to get it over with. [a]						0.246						
35. I find my own favorite way to get things done. [a]												
40. I seek out activities in my work that I enjoy doing.						0.342						
44. I think that the enjoyment gained from work is more important than external rewards.						0.634						
46. I try to get enjoyment in the work process rather than in the benefit I plan to gain.						0.757						
						0.760						

Factor loadings	1	2	3	4	5	6	7	8	9	10	11	12
Factor 7: Relation-based Natural Reward (scale $\alpha = 0.72$)												
7. I try to think of the pleasure obtained from fitting myself in with my colleagues/team members I work with.							0.517					
23. I focus my thinking on the good feeling I gain by working harmoniously with the colleague/team members.							0.729					
41. I find my own favorite ways to meet my team members' needs.							0.367					
43. I think of the enjoyment I gain from helping colleagues/team members reach their goals.							0.581					
Factor 8: Task & Relation-based Self-Observation (scale $\alpha = 0.76$ (0.67))												
8. I examine how well I'm doing at work. (school).								0.526				
18. I am usually aware of how well I'm doing as I perform an activity								0.653				
29. I pay attention to how well I'm doing in my work. [b]								0.485				
37. I keep track of my progress on my own work I'm working on. [a]								0.053				
9. I keep track of how well I fulfill the expectation of my supervisor/team members.								0.748				
19. I am usually aware whether I could adapt to the expectation of my supervisor/team members when I perform an activity.								0.708				
30. When keeping track of my progress on projects, I pay attention to how well I cooperate with my colleagues/team members. [a]								0.194				
Factor 9: Individual-oriented evaluation of beliefs and assumptions. (scale $\alpha = 0.72$ (0.66))												
10. I evaluate whether I have any dysfunctional thinking whenever I encounter a difficult situation.									0.582			
20. I will evaluate my thinking to see if it exerts any negative impact on my tasks.									0.515			
31. I try to evaluate the consequences of my negative thinking.									0.768			
38. I will review whether my judgment has been too negative when facing problems.									0.657			
47. I try to mentally evaluate the accuracy of my own beliefs about situations I am having problems with.									0.400			
Factor 10: Social-oriented Evaluation of Beliefs and Assumptions. (scale $\alpha = 0.64$)												
21. When I differ from others' opinions, I try to avoid conflicts so as to maintain harmony.										0.839		
32. I examine whether my thinking can fit in with the opinions of my colleagues and team members.										0.351		
33. When I have conflicts with my colleagues/team members, I evaluate my thinking to see if there is anything wrong.										0.369		
Factor 11: Self-Cueing (scale $\alpha = 0.86$)												
11. I use written notes to remind myself of what I need to accomplish.										0.848		
22. I use concrete reminders (e.g. notes and lists) to help me focus on the things I need to accomplish.										0.864		
Factor 12: Not-interpretable												
24. Sometimes I picture in my mind a successful performance before I actually do a task.												0.845
2. I establish specific goals for my own performance.												-0.359
16. When I have a choice, I try to do my work in ways that I enjoy rather than just trying to get it over with.												0.545

a. Item deleted when factor loading was less than 0.35

b. Item deleted when its cross-loadings on incorrect factor is greater than 0.4.

Notes: (1) N = 284. Extraction method: principal component analysis. Rotation method: VARIMAX with Kaiser normalization. Coefficient alphas (α) from Houghton and Neck (2002) scale are shown in parentheses for comparison.

        (2) Measure of reliability (α) for each scale excludes all deleted items marked with (a) or (b).

        (3) Coefficient alphas (α) from the original scale of RSLQ without any item modification are shown in parenthesis for comparison.

Reliabilities of these four dimensions showed substantial increases in coefficient alphas from the original RSLQ scale, and all exceed Nunnally's (1978) recommended scale reliability threshold of 0.70. For instance, the alpha for the subscales of task-based natural rewards (Factor 6), and individual-oriented evaluation of beliefs and assumptions (Factor 9) rose from 0.63, and 0.66 to 0.74 and 0.72 respectively and the self-observation sub-scale (factor 8), which included new additional items representing relation-based self-observation, increased from 0.67 to 0.76. Self-punishment which has low reliability in Neubert and Wu's replication study (2006) also rose substantially from 0.58 to 0.80. All of these statistical evidences support the item modification of these four dimensions.

Most items of our 47-item self-leadership questionnaire loaded unambiguously on the expected factors (see table 2). However, a small number of items had factor loadings of less than 0.35 (Items 16, 24, 30, 35, 36, 39, and 37) on the anticipated factor and a few items (items 2 and 29) had cross loadings greater than 0.4 loaded on theoretically unexpected factors. These items were removed from the questionnaire that was used in the confirmatory factor analysis, leaving 38 items in our modified RSLQ. (For full version of this 38-item modified self-leadership questionnaire, please refer to Appendix E).

Confirmatory Factor Analysis (CFA)

To examine the stability of the 11-factor solution derived from exploratory factor analyses, we conducted a confirmatory factor analysis on the 38-item modified RSLQ using the second Chinese student sub-sample (n = 285). Descriptive statistics and intercorrelations among indicator variables are presented in Table 3. Reliability estimates (alpha coefficients) for the eleven factors remained fairly stable relative to the reliability estimates reported in the exploratory factor analysis.

Table 3. Means, standard deviations, reliabilities and intercorrelations among indicator variables (sample 2 data)

Indicator variable	M	SD	1	2	3	4	5	6	7	8	9	10	11
1. Visualizing successful performance	3.49	.78	0.72										
2. Self-goal setting	3.42	.62	0.318**	0.75									
3. Self-talk	3.43	.77	0.295**	0.408**	0.78								
4. Self-reward	3.86	.84	0.162**	0.266**	0.354**	0.88							
5. Self-punishment	3.59	.74	0.146*	0.200**	0.091	0.227**	0.80 (0.60)						
6. Task-based natural rewards	3.56	.62	0.181**	0.206**	0.280**	0.132*	0.127*	0.71 (0.64)					
7. Relation-based natural rewards	3.68	.57	0.215**	0.228**	0.188**	0.216**	0.167**	0.479**	0.74				
8. Task & relation-based Self-observation	3.47	.55	0.301**	0.463**	0.256**	0.193**	0.299**	0.264**	0.351**	0.71 (0.64)			
9. Individual-oriented evaluation of beliefs and assumptions	3.26	.59	0.205**	0.413**	0.449**	0.184**	0.335**	0.230**	0.138*	0.379**	0.72 (0.60)		
10. Relation-based evaluation of beliefs and assumptions	3.61	.63	0.132*	0.233**	0.195**	0.099	0.338**	0.375**	0.544**	0.365**	0.383**	0.65	
11. Self-cueing	3.38	.98	0.114	0.419**	0.286**	0.216**	0.057	0.065	0.130*	0.122*	0.173**	0.084	0.84

Note: *p<0.05 (two-tailed); **p<0.01 (two tailed)

  Alpha coefficient of each indicator variable was placed in the diagonal.

  Coefficient alphas (α) from the original scale of RSLQ without any item modification are shown in parenthesis for comparison.

Employing Amos 7.0 (Arbuckle, 1997), CFA was conducted using maximum likelihood estimation procedures to compare the one-factor with the eleven-factor model. Since this structural equation modeling (SEM) program uses listwise deletion of missing data, sample size was reduced from 295 to 285. First, the chi-square test was conducted to test the fit between the sample covariance and the matrix implied by the models. Since this statistic is somewhat sensitive to sample size (Bentler and Bonett, 1980), a second calculation was made that involves dividing chi-square value by the degrees of freedom (Kline, 1998). Although no clear-cut guideline exists, a ratio below 3 is generally considered to be acceptable (Kline, 1998). Other fit statistics insensitive to sample size were also used. Specifically, we relied on three incremental indices of fit: (1) the comparative fit index (CFI); (2) the Tucker-Lewis index (TLI); (3) incremental fit index (IFI). Models resulting in CFI, TLI, IFI of .90 or higher are considered acceptable (Bagozzi and Yi, 1988). A value of about .08 or less for the RMSEA indicates a reasonable effort of approximation whereas values higher than .10 are unacceptable (Browne and Cudeck, 1993).

We tested two models. The first model was our hypothesized eleven-factor model found in the EFA, in which each item was constrained to load on its respective latent variable. The second model was a one-factor model, in which all of the items were constrained to load on one latent variable. Table 4 presents the fit statistics for the two models.

As can be seen, the one-factor model fit the data poorly as none of the fit indices approached an acceptable level, χ^2 (781, N = 284) = 3,089.85, p< 0.0001 (χ^2/df = 3.96, IFI = .48, TLI = .44, CFI = .47, RSMEA = .1). The eleven-factor hypothesized model provided a much better fit, as indicated by all fit indices, χ^2 (741, N = 284) = 1,009.52, p < .001 (χ^2/df = 1.65, IFI = .9, TLI = .88, CFI = .90, RSMEA = .05). Five out of six fit

indices reached their respective recommended levels indicating that this 11-factor model fitted the data well. The chi-square difference test also revealed that the one-factor model was significantly worse than the hypothesized model, $\Delta\chi^2$ (56, N = 284) = 2,080.23, p< 0.001. All items of the hypothesized model loaded significantly (p<.05) on the anticipated factors.

Table 4: Summary of the overall fit for AMOS 7.0 Confirmatory Factor Analysis Models of the modified RSLQ – Sample 1 (N = 284)

Model Description	χ^2	χ^2/df	IFI	TLI	CFI	RMSEA
One-factor model	3,089.85	3.96	.48	.44	.47	.10
Eleven-factor Model	1,009.52	1.65	.90	.88	.90	.05

Self-Leadership and Self-Efficacy

In our investigation of the association of self-leadership to self-efficacy, we used the 11-factor model of self-leadership mentioned above to further confirm the construct validity of self-leadership. Self-leadership was significantly and positively related to self-reports of self-efficacy as expected (r = 0.45).

Discussion

Self-leadership has developed largely within the context of the culture of the USA. The intercultural aspects of self-leadership have received limited attention to date. Neubert and Wu (2006) examined the psychometric properties and construct validity of the Houghton and Neck's (2002) Revised Self-leadership Questionnaire (RSLQ) in a Chinese context but found only five stable factors in the best-fitting model. Furthermore, concerns about the internal consistency reliability of five of the subscales of RSLQ were raised. These results lead to the question of the appropriateness of the RSLQ in non-

Western cultures. Clearly, further development of RSLQ is a pressing concern in the advancement of self-leadership research. This study sought to develop a psychometrically valid self-leadership scale more appropriate for a Chinese population.

Drawing on the theory regarding the cultural differences between individualists and collectivists (Alves, et al., 2006, Hofstede, 1984, 2001; Leung, 1996; Markus and Kitayama, 1999), the RSLQ was modified to enhance the application of self-leadership measurement to Chinese culture through: (1) extending three component dimensions of self-leadership – natural rewards, self-observation and evaluating beliefs and assumptions with the inclusion of relation-based features; and (2) rewriting ambiguous items and removing aberrant items with low factor loadings or heavily cross-load with other inappropriate factors.

The results of this study provide support for the validity and reliability of this modified version of RSLQ as an acceptable measure of self-leadership skills and behaviors within a Chinese sample. Two extended dimensions proposed for the modified RSLQ, relation-based natural rewards and social-oriented evaluation of beliefs and assumptions, consistently emerged in two independent student samples. In addition, task-based self-observation (original dimension) and relation-based self-observation items merged together to form one factor, suggesting that in Chinese culture, task-based self-observation cannot be separated with relation-based self-observation. An explanation for this merged factor may reside with the nature of Chinese interdependent social belief (Markus and Kitayama, 1991). As suggested by Leung (1996), Chinese people believe that without the support of others, one may face many difficulties to complete one's own task. Therefore, when one tries to keep track of the progress of the task, one also needs to examine whether he or she can work smoothly and harmoniously with the team members.

Reliability estimates for the modified version of 38-item RSLQ improved

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significantly or remained relatively stable in comparison to Houghton and Neck's (2002) original 35-item RSLQ. Most notably, four subscales, which failed to reach acceptable levels of reliability in Neubert and Wu's (2002) Chinese sample showed increases above the commonly recommended level of 0.7. Alpha coefficients for the self-observation sub-scale (factor 8) increased from 0.67 to 0.76 while for task-based natural reward sub-scale (factor 6) was raised from 0.63 to 0.76. Similarly for the factor of individual-oriented evaluation of beliefs and assumptions and self-punishment, alpha coefficients increased from 0.66 to 0.72 and from 0.58 to 0.80. The reliability estimates and stable factor structures found in this study reflected that these four subscales become more reliable measures after the item modification. These solid empirical evidences suggested that the low liabilities of these four self-leadership dimensions found in Neubert and Wu's (2006) replication study were likely contaminated by some ambiguous items. Thus these four self-leadership strategies found in Houghton and Neck's (2002) research done in U.S. appear to broadly generalize to Chinese culture.

The construct validity of the refined version of RSLQ was further examined using CFA that examined the fit of the 11-factor model to the data from a separate sample. Fit statistics indicated that this model adequately fitted the data which is a superior model than the one-factor model. This result suggested that this modified RSLQ is measuring self-leadership in a way that matches the specifications of self-leadership theory, thus confirming the construct validity of the modified RSLQ. Based on the results of both the EFA and CFA, we conclude that the refinements of the existing subscales and the extensions of some RSLQ's components were successful in making it more applicable for assessing Chinese people's self-leadership behaviors and skills. The strong relationship between self-leadership and self-efficacy found in previous studies in the U.S. were also found in the Chinese context which provides further evidence for the construct validity of

the modified RSLQ.

There are also a number of limitations in our study that open the way for further research to refine understanding of self-leadership. Our study utilized a student population from Hong Kong. The extent that our results are generalizable to the wider work population as well as those from the Chinese mainland requires further research. It would also be of interest to examine whether our self-leadership measure could be generalized to other collectivistic country such as Japan. Second, since the reliability estimate of social-oriented evaluation of beliefs and assumptions of both samples was marginal that did not exceed the acceptable level of 0.7, further item modification may be needed to improve the reliability of this scale. Third, the focus of this study was on the construct validity of the RSLQ, and it did not specifically examine the scale's predictive validity. Thus further research should be done to examine whether the three relation-based measures could increase the prediction power of self-leadership on performance, particularly in collectivistic culture. In addition, more research should be done to examine whether task-based self-leadership scales are better predictors than relation-based predictors for task or individual performance, and whether relation-based self-leadership scales are better predictors than task-based predictors for group performance. Fourth, the cross-cultural application of self-leadership of this study was limited to the cultural value of collectivism-individualism. Other element of Hofstede's cultural framework, such as high-low power distance, and long-term-short-term orientation, could also potentially impact cultural representations of self-leadership. We think that further exploration of the existing self-leadership components in consideration of other Hofstede's cultural dimensions is needed and see this research as a first step to advance the application of self-leadership to non-Western cultures. Finally, while the extended relation-based self-leadership scales items are particularly designed for collectivist cultures, its

generalizability to non-collectivist cultures could also be explored. Further academic investigations enable us to determine whether these relation-based self-leadership strategies could be generalized to Western culture, especially in light of increasing focus on interdependent and collaborative work structures (Child, 2001; Pearce and Manz, 2005).

Conclusion

Given the current trend of globalization, cross-cultural self-leadership is important for managers who must understand and improve the performance of employees in the twenty-first century. This current research represents a significant contribution on extending the breadth of self-leadership theory and refining its measurement with collective cultures in mind. Knowing the properties of a scale before using it is important for both researchers and practitioners. Since there had been few published studies that validated the self-leadership scale with a rigorous validation technique, such as CFA, the results reported here provide more empirical evidence as to how well the scales measure self-leadership skills in the Chinese context. Our present study to improve the self-leadership scale should be considered as part of larger effort of advancing our knowledge about cultural differences in self-leadership behaviors.

CHAPTER FOUR - STUDY TWO

EXTENDING SELF-LEADERSHIP RESEARCH TO THE

EAST: MEASUREMNET EQUIVALENCE OF THE

CHINESE AND ENGLISH VERSIONS OF THE MSLQ

Author: Jessie Ho[1], Paul L. Nesbit[1], Denis Jepsen[2],

Soseh Demirian[3]

[1]*Macquarie Graduate School of Management,* [2]*Department of Business and*
[3]*Department of Psychology, Macquarie University, Australia*

Statement of Contributions of Joint Authorship

Jessie Ho:　　　　　　**(Candidate)**

 synthesized and summarized literature, provided conceptual overviews, writing of

manuscript, designed research methodology, conducted data analysis, and preparation of

tables.

Paul L. Nesbit:　　　　**(Thesis Supervisor)**

supervised and assisted with manuscript editing and co-author of manuscript.

Denis Jepsen:　　　　　**(Research Partner)**

Assisted in data collection

Soseh Demirian:　　　　**(Research Partner)**

Assisted in data collection

Chapter Four

Linkage of Paper to Thesis Objectives

As discussed in Chapter 1, one of the thesis objectives is to investigate how people from different cultures differ in the practice of self-leadership strategies. Such cross-cultural comparison research requires a valid self-leadership measure with measurement equivalence, which ensures that any observed differences truly reflect differences between cultures on the underlying construct. Without a reliable scale that is demonstrated to be equivalent across cultural groups, any conclusion drawn from comparing the mean scores of self-leadership constructs is questionable. In Chapter 3, it was demonstrated that the MSLQ is a reliable measure which can be generalized to a Chinese context. This chapter is a second journal article which has been published in the *Asian Journal of Social Psychology*. It presents research which investigates whether the modified self-leadership questionnaire (MSLQ) developed in the last chapter (Chapter 3) is applicable in both Eastern and Western cultures.

As such, the purpose of this study is to examine the psychometric properties and the extent of measurement equivalence of the modified Self-leadership Questionnaire (MSLQ) using Chinese and Australian samples representing Eastern and Western cultures. Moreover, this study also further investigates whether the three relation-based dimensions (relation-based natural reward, social-oriented evaluation of beliefs and assumptions, and relation-based self-observation) particularly developed for collectivist cultures in Chapter 3 can be generalized to the Western cultures.

Study Two: Extending Self-leadership research to the East:

Measurement equivalence of the Chinese and English versions of

the MSLQ

Abstract

The sample for this study consisted of 395 Chinese students and 241 Australian students. Results revealed that the MSLQ exhibited a satisfactory condition of psychometric properties across cultures. A series of multi-sample confirmatory factor analyses demonstrated the cross-cultural similarity of an eleven-factor model across the Chinese and Australian samples. The MSLQ was also found to possess measurement invariance, suggesting that it is appropriate for cross-cultural research assessing differences of self-leadership behavior across the Chinese and the Western culture. Implications for future research are also discussed.

Introduction

In order to succeed in increasingly complex and turbulent markets, organizations

often adopt decentralized, organic-type organizational structures (Conger & Kanungo,

1988). Within these organizations, members at all levels are being encouraged to take

greater responsibility for their own job tasks and work behaviors. This trend toward more

flexible and decentralized organizations and greater employee autonomy has drawn

attention to the concept of self-leadership (Manz, 1986; Manz & Neck, 2004; Manz &

Sim, 1980, 2001). Self-leadership is defined as a systematic set of strategies through

which individuals influence themselves toward higher levels of performance and

effectiveness. (Manz, 1986; Manz & Neck, 2004). Self-leadership incorporates the

principles of self-regulation (e.g., Carver & Scheier, 1998) and self-management (e.g.,

Luthans & Davis 1979; Manz & Sims 1980), but goes beyond these to include self-

determined governing standards and a unique set of self-motivation techniques (Manz,

1986; Neck & Houghton, 2006).

Self-leadership strategies are typically classified into three categories, namely

behavior-focused strategies, natural reward strategies, and cognitive or thought pattern

strategies (Manz & Neck, 2004; Prussia, Anderson, & Manz, 1998; Sims & Manz, 1996).

Behavior-focused self-leadership involves using action-oriented strategies to accomplish

tasks that are difficult or are neither enjoyable nor motivating. Sims and Manz (1996)

identified various behaviour-focused self-leadership strategies, including self-observation, self-goal setting, self-reward, self-punishment, and self-cueing strategies. Natural reward strategies are designed to enhance intrinsic motivation for better performances which include focusing one's attention on the pleasant aspects of a given job and engaging in job- or task-redesign (Manz & Neck, 2004). Constructive thought strategies involve visualizing successful performance, engaging in positive self-talk, and examining individual beliefs and assumptions to align cognitions with desired behavior (Neck & Manz, 1996a; Neck, Stewart, & Manz, 1995). Research on the use of self-leadership strategies has found it to be effective at enhancing performance in clinical, athletic, and educational settings (Neck & Manz, 1992), and in employment contexts (Neck & Manz 1996; Stewart, Carson, & Cardy 1996).

Establishing measurement invariance in self-leadership assessment

As is often the case with organizational theories, the majority of self-leadership research has been conducted in the United States and as such its development and supporting research may reflect Western cultural values (Alves et al., 2006; Neck & Houghton, 2006; Neubert & Wu, 2006). Consequently, there have been calls for more empirical research to examine the intercultural aspects of self-leadership (Neck & Houghton, 2006; Alves et al., 2006). Developing an understanding of the applicability of self-leadership across different cultures may help to improve organizational and

managerial effectiveness in multinational corporations. However, research on cross-cultural comparison of self-leadership is rare due to the lack of a measurement instrument applicable in both Eastern and Western cultures. Thus, developing a reliable scale with measurement invariance is a critical step which ensures that any observed differences truly reflect differences between cultures on the underlying construct, and are not due to systematic biases in the way people from different cultures interpret a given measure in a conceptually different manner (Vandenberg & Lance, 2000). As such, the purpose of this study is to examine the psychometric properties and the extent of measurement invariance of one available self-leadership instrument, the modified Self-leadership Questionnaire (MSLQ; Ho & Nesbit, 2009) using samples drawn from Western and Eastern cultures. The paper is organized as follows. First, we briefly review empirical research on the development and refinement of the MSLQ. Second, we describe a study to examine measurement invariance of the MSLQ using Australian and Chinese participants. Third, we present the findings from that study and discuss their implications for the applicability of self-leadership theory in Eastern and Western cultures.

Refinement and extension of the Self-leadership scale

The first published self-leadership assessment instrument, Anderson and Prussia's (1997) 50-item Self-Leadership Questionnaire (SLQ), was based to a large extent on self-leadership research of Manz and Sims (1991) and Manz (1992). Nevertheless, the

Anderson and Prussia's SLQ suffered from a number of psychometric problems and required further refinement. Subsequently, a revised Self-Leadership Questionnaire (RSLQ) was developed by Houghton and Neck (2002) based on the Anderson and Prussia's (1997) scale. They eliminated items that loaded on the unanticipated factors and reworded a few items. Houghton and Neck (2002) also reported that the revised Self-Leadership Questionnaire (RSLQ) demonstrated a greater degree of reliability and construct validity than the earlier SLQ.

As noted earlier, much of the existing research has been done in the United States, Alves et al. (2006) calls for more empirical research to address the applicability of self-leadership theory across cultures. The authors argued that while self-leadership behavior is a generally universal concept, different cultures value different attributes and practices. Thus, self-leadership behaviors may be applied differently across cultures. However, only two empirical studies have directly addressed this issue by exploring the application of self-leadership measurement in a non-Western context. Neubert and Wu (2006) tested Houghton and Neck's (2002) revised Self-leadership Questionnaire (RSLQ) in a Chinese context. They found that four out of nine self-leadership factors had unsatisfactory reliability and failed to emerge in the same manner as factors found in Houghton and Neck (2002)'s original validation study conducted in the U.S. context. This suggested that although RSLQ was found to be a valid scale with promising reliability and construct

validity in USA samples (Houghton & Neck, 2002), its generalizability to the Chinese context was problematic. Furthermore, using the five-factor model of self-leadership (excluding those four factors with unsatisfactory reliability) that included goal setting, visualizing successful performance, self-talk, self-reward, and self-punishment, Neubert and Wu (2006) found that self-leadership was positively related to self-reports of in-role performance and creativity.

To further enhance the generalization of the self-leadership concept to the Chinese context, Ho and Nesbit (2009) modified the revised Self-Leadership Questionnaire (RSLQ). Following the work by Neubert and Wu (2006), they refined or deleted some ambiguous items of four existing dimensions (self-observation, evaluations of beliefs and assumptions, natural rewards, and self-punishment) found to have low reliabilities in Neubert and Wu's (2006) validation study. They also suggested that three component dimensions, namely natural rewards, self-observation, and evaluating beliefs and assumptions, may be more valid for people from individualist culture but less relevant for collectivistic culture. According to Markus and Kitayama (1991), the cultures of North America and Northern and Western Europe have been identified as generally individualistic who possess independent self-construal. Individualists value independence, autonomy and the expression of one's unique configuration of needs, rights, and capacities. In contrast, the cultures of Easterners, such as Japanese, Chinese, and Korean,

have been identified as collectivistic who possess interdependent self-construal (Markus & Kitayama, 1991). Collectivists strive to find a way to fit in with significant others, and to fulfill their obligations as part of social networks. Thus in considering the nature of self-leadership in non-western cultures, such as in Chinese cultures, Ho & Nesbit (2009) suggested that more attention needs to be given to the issue of relationships and collective efforts in the measurement of relevant behaviors.

Ho and Nesbit (2009) argued that the original items of these three component dimensions were all strongly shaped by individualistic cultural values with a strong focus centered either on the "task" or the "person". Natural rewards emphasizes the personal intrinsic value of a task, self-observation highlights the role of observing one's actions relative to goals, and evaluating beliefs and assumptions concerns examining one's thoughts, especially self-defeating thoughts that detract from successful task performance. Thus, these three subscales were extended to the development of three new factors, "relation-based natural rewards", "social-oriented evaluation of beliefs and assumptions" and "relation-based self-observation", which incorporated social/ relation-based features typically associated with collectivism (Markus & Kitayama, 1991). Relation-based natural rewards measures a person's tendency to find enjoyment through maintaining social relations, group harmony and belongingness. Social-oriented evaluation of beliefs and assumptions measures a person's tendency to identify their own beliefs and

assumptions in conflict with the opinions of their group members and authority figures. Relation-based self-observation measures a person's tendency to keep track of their performance in meeting the expectation of authority figures or group members.

Even though there are twelve subscales in the modified version of self-leadership questionnaire (MSLQ), the exploratory and confirmatory factor analysis done by Ho and Nesbit (2009) consistently identified an eleven-factor rather than the twelve-factor structure with good internal consistency. The items of the "relation-based self-observation", consistently merged with those of the "task-based self-observation" (from the original subscale) to form a single factor. This suggests that when Chinese participants observe progress on the task or in reaching goals they also assess whether they are working smoothly and harmoniously with team members. Overall, the study by Ho and Nesbit (2009) provided evidence that the 38-item MSLQ is a reliable measure with a stable eleven-factor structure that captures different aspects of self-leadership theory. Furthermore, Ho and Nesbit (2009) also found a strong relationship between self-leadership scale and general self-efficacy in the Chinese context, which provided further evidence for the construct validity of the MSLQ.

Despite the promising evidence supporting the construct validity and reliability of the MSLQ, whether it is equivalent across the Chinese and Western cultures is unknown. Thus this study investigates the measurement invariance of the MSLQ to determine: (1)

whether the three relation-based dimensions (relation-based natural reward, social-oriented evaluation of beliefs and assumptions, and relation-based self-observation) can be generalized to the Western culture; (2) whether the empirical-supported eleven-factor model can be replicated in another Chinese sample; and (3) whether the original theorized twelve-factor rather than the eleven-factor model is more appropriate for the Western, individualistic population.

In the following section, we offer some theoretical justifications to explain why we expect social/relation-based dimensions of self-leadership, as measured by the MSLQ, to generalize to the Western context.

Social/Relation-based Self-Leadership Dimensions and Western Culture

Despite the individualistic culture typically associated with Western societies (Hofstede, 1980; Markus & Kitayama, 1991), it can be argued that these three social/relation-based dimensions of self-leadership may be applicable to Western cultures on the basis that the need for "relatedness" is regarded as a universal human value (Alderfer, 1972). For example, self-determination theory (Deci & Ryan, 1985; 2000) views people as "active, growth-oriented organisms who are naturally inclined toward integration of their psychic elements into a unified sense of self and integration of themselves into larger social structures" (Deci & Ryan, 2000, p.229). Self-determination theory further stresses that the satisfaction of psychological needs of relatedness is

essential for the healthy development and well-being of all individuals regardless of culture (Deci & Ryan, 2000).

The relevance of social-relations values among Western cultures is also reflected in the increasing use of teams within Western organizations (Devine et al., 1999). Effective teamwork has become a crucial component of an organization's success (Smolek, Hoffman & Moran, 1999; Kozlowski & Ilgen, 2006) and this effectiveness is to a certain extent dependent on the social and interpersonal abilities of team members (Stevens & Campion, 1999).

In sum, the above research points to the social foundation of team effectiveness which suggests the applicability of relatedness/social constructs within Western culture. While the social/relation-based refinement of self-leadership dimensions was originally conceived with collectivist cultures in mind (Ho & Nesbit, 2009) it is expected that the social/relation-based concept is applicable to Western populations as well. Given these argument, we next outline a study that seeks to assess the cross-cultural comparability of the MSLQ. As is required, ethics approval for this study was approved by the Ethics Review Committee of the researcher's University.

Method

Participants

Participants were from Hong Kong and Australia and represented two diverse

cultures. Hofstede (1980) and Oyserman, Coon, & Kemmelmeir (2002) found that

Australia has emerged as one of the most individualistic societies in the world and that

collectivist countries were in Asia, such as China, Japan and Hong Kong. In particular,

Hofstede (1980) found that Hong Kong samples were lower than the Australian

counterparts on individualism and uncertainty avoidance but higher on power distance.

These characteristics were typically identified as collectivist. The collectivist cultural

value is assumed to be maintained among these Chinese participants, especially given the

strong influence of the Chinese social influences, such as given exposure to Chinese

mainland influences and by the fact that the HK students' education was mostly

conducted in Cantonese.

Chinese sample. Responses were collected from 395 full-time Chinese students

(64% female; 36% male) undertaking business classes at a community college in Hong

Kong. This Hong Kong student sample ranged in ages from 18 to 29 (Mean = 19.9, S.D.

= 1.16). 99% of the participants were 18-24 years old. The questionnaires were completed

anonymously and participation was voluntary without compensation.

Australian sample. The sample was made up of 241 Australian full-time students

who were born and had lived all their lives in Australia (69% female; 31% male). All

respondents were recruited from two public universities located in Sydney. Ages ranged

from 17 to 50 (Mean = 20.4; S.D. = 4.55). 90% of the respondents were between the ages

of 17 – 24 years. All students were undertaking psychology classes and received course

credit for their participation. In order to maximize the possible differentiation between the

two cultural groups, only data from respondents with European heredity in the Australian

sample were used in the analyses.

Measure

Self-leadership was measured using the modified Self-leadership Questionnaire (MSLQ)

developed by Ho and Nesbit (2009). The MSLQ consists of 38 items describing various

behaviors associated with self-leadership and participants use a 5-point Likert-type scale

(1 = not all accurate; 2 = a little accurate; 3 = somewhat accurate; 4 = mostly accurate; 5

= completely accurate) to indicate how accurate each behavior describes them. The 12

subscales include Visualizing Successful Performance (2 items); Self-goal Setting (4

items); Self-talk (3 items); Self-reward (3 items); Self-punishment (4 items); Task-based

Natural Reward (4 items); Relation-based Natural Reward (4 items); Task–based Self-

observation (2 items); Relation-based Self-observation (2 items); Individual-oriented

Evaluation of Beliefs and Assumptions (5 items); Social-oriented Evaluation of Beliefs

and Assumptions (3 items); Self-cueing (2 items). Sample items include "I use my

imagination to picture myself performing well on important tasks," "I consciously have

goals in mind for my work efforts," "I think that the enjoyment gained from work is more

important than external rewards," and "When I differ from others' opinions, I try to

modify my thinking to avoid conflicts so as to maintain harmony." See Appendix E for

the complete questionnaire.

Adapting Self-leadership Measure for Ensuring Cross-cultural Equivalence

When a psychological instrument developed in one cultural group is applied in

different cultural context, one cannot assume that psychometric properties are invariant

and that the meanings of the scores will be identical. Comparisons between cultural

groups are appropriate when empirical evidence demonstrate that "meaning and

dimensional structure of the construct as well as the items comprising the measuring

instrument are group-equivalent" (Byrne et al., 2009, p.95). Measurement invariance is

achieved when both the item content and psychometric properties (i.e., validity and

reliability) of the instrument are equivalent across groups (Van de Vijver & Poortinga,

2005; Byrne et al., 2009). According to Leung (2008), when adapting an instrument from

one language to another language, cross-cultural equivalence should include: (1)

linguistic equivalence; (2) conceptual equivalence; and (3) scalar equivalence. To achieve

linguistic equivalence, a key requirement is the accurate translation of the materials for

different linguistic groups.

In this study, before the MSLQ could be administered to the Hong Kong respondents, translation into the Chinese language was required. We followed Brislin's (1980) translation/back-translation procedure to create a Chinese version of the questionnaire. The first author, who is bilingual (Chinese and English) and has lived in the United States for four years, translated the MSLQ from English into Chinese. After the Chinese version of the MSLQ was generated, a translation professional then back translated it to English. Three Hong Kong University lecturers examined the original version in English and the back-translated English version and found no back-translation discrepancies.

Conceptual equivalence refers to the similarity of the meaning of construct across different cultural groups. For evaluating conceptual equivalence across cultures, one simple way is to determine the factor structure and factor loading of a scale. Conceptual equivalence may exist if a scale shows a similar factor structure and factor loading across cultural groups (see Ven de Vijver & Leung, 1997; Vandenberg & Lance, 2000). For making meaningful comparison of means of target variables across cultures, conceptual equivalence is a necessary but not a sufficient requirement. Scalar equivalence needs to be established (Byrne, 1998; Meredith, 1993). Scalar equivalence can be obtained when the measurement instrument is on the same ratio scale with the same origin in each cultural group (Leung, 2008; Van de Vijver & Tanzer, 1997). Multi-group confirmatory

factor analysis (MGCFA) is a common statistical technique used for establishing both the

conceptual equivalence and scalar equivalence. Technical procedures for assessing these

two levels of equivalence through MGCFA will be outlined in the next section.

Procedure to Assess Measurement Invariance

We used multi-group confirmatory factor analysis (MGCFA), and followed a

procedure of testing measurement invariance outlined in previous theoretical work

(Cheung & Rensvold, 1999; Jöreskog, 1971; Meredith, 1993; Vanderberg & Lance, 2000).

In brief, when testing for measurement equivalence across cultures, sets of parameters are

constrained in a logically ordered, increasingly restrictive fashion. The first step is to

compare the factor structure of the MSLQ across the two cultural groups. Given that in

earlier research, Ho & Nesbit (2009) found an eleven-factor instead of the hypothesized

twelve-factor model it is necessary to determine which factor structure (eleven- vs.

twelve-factor) represents the best model fit for each cultural group. Confirmatory factor

analyses of the proposed measurement model are performed separately for the Chinese

and Australian groups. If the same factor structure is found in the Chinese and Australian

samples, testing of configural invariance would be continued.

The next step would be a test of equivalent factor structures across groups to

determine if the patterns of fixed and free factor loadings are comparable (Vandenberg,

2002). The aim is to examine if respondents belonging to different cultural groups have

the same number of factors with a similar pattern of factor loadings (Millsap & Everson,

1991; Riordan & Vandenberg, 1994). Configural invariance is also specified as the

baseline model against which the subsequent more restrictive models are compared

(Salzberger, Sinkovics, & Schlegelmilch, 1999).

Once configural invariance is established, metric invariance, which indicates

whether the Chinese and Australian participants are interpreting the items of the survey in

the same way, is assessed. This test is conducted by imposing equality constraints on the

factor loadings. We followed the recommendation of Cheung and Rensvold (1999) and

performed a series of CFA tests using every other item on the subscale as a temporary

referent item. If metric invariance exists, the strength of the relationship between specific

scale items and the underlying constructs would be the same across groups (Cheung &

Rensvold, 2000).

Once metric invariance is established, the fourth step is to explore scalar

invariance with a test of equivalence of indicator intercepts (Cheung & Rensvold, 2000).

This test is conducted by imposing equality constraints on item intercepts and is

conducted to determine whether there are cross-cultural differences in agreement bias

(also known as 'acquiescence response style bias') (see Cheung & Rensvold, 2000).

For each of the four steps listed above, evaluation of local areas of misfit would be

performed through scrutinizing standardized residuals and modification index (Byrne, 1998). Some researchers advocate that a final step of measurement invariance testing is the need for equivalence of the error variance across groups (Drasgow, 1984, 1987; Byrne, Shavelson & Muthen, 1989). However, Byrne (1998), Steenkamp and Baumgartner (1998) and Meredith (1993) have suggested that testing the invariance of error variance is not necessary as it represents an overly restrictive test of the data. They argue that only scalar invariance is a necessary condition for the purpose of conducting mean comparisons across cultures. Some researchers even suggest that latent-mean comparisons can still be made under partial scalar equivalence (Bryne et al., 1989; Millsap & Kwok, 2004; Steenkamp & Baumgartner, 1998). Based on these researchers' guidelines, we exclude the invariant testing of error variance.

Estimation and evaluation of model fit.

Overall model fit in multi-group confirmatory factor analysis is commonly evaluated through a chi-square (χ_2) test. However, this test is extremely sensitive to sample size, which often signals statistically significant misfit even for trivial departures from perfect fit. Thus, this measure was not used in present study. While there are no golden rules for assessment of model fit, reporting a variety of indices is necessary for capturing different aspects of model fit (Brown, 2006). Following the recommendations of Hu and Bentler

(1999) and Cheung & Rensvold (2000), absolute fit was assessed by the standardized

root mean square residual (SRMR) and parsimonious fit was assessed by the root mean

square error of approximation (RMSEA). Incremental fit was assessed by the

comparative fit index (CFI). Typically a good model fit requires values below .08 for

SRMR, values around .06 for RMSEA (Hu & Bentler, 1999) and values higher than .90

for CFI (Bentler & Bonett, 1980). AIC (Akaike Information Criterion) was also used for

comparing model to each other with smaller values being better than larger values.

In addition, to the measurement equivalence procedure mentioned above, the process

also involves testing the fit of a series of increasingly restrictive models against a baseline

model with the equality of estimated parameters (e.g. equal factor loading or intercepts).

To determine the degree of equivalence, differences in Comparative Fit Index ($\triangle$CFI)

and between nested equivalence models is used as a more reliable measure of model fit

than the Chi-squared difference test (Cheung & Rensvold, 2002; Brannick, 1995;

Kelloway, 1995). Chen (2007) further suggests that when sample size is small (total N$\leq$

300) and sample sizes are unequal as shown in this study, for the testing of metric (factor

loadings) and scalar invariance (intercept), a change of $\leq$ - 0.005 in CFI supplemented by

a change of $\leq$ .010 in RMSEA would indicate invariance model.

Result

Data Screening

Preliminary examination of the data showed no serious problems with non-normality. All item variables from the Chinese and Australian samples had skewness values < .75 and kurtosis values < 1.03. These values were well below the guidelines of univariate normality (Skewness values > 2 and kurtosis values > 7) suggested by Curran, West, and Finch (1996). Hence, maximum likelihood is the appropriate estimation method in the confirmatory factor analyses.

Factor Structure: Testing the Eleven-factor and Twelve-factor Measurement Models

Multi-sample analyses were performed using maximum likelihood estimation method based on a covariance matrix. Results of the confirmatory factor analyses for each independent sample are presented in Table 5. Both the twelve-factor and eleven-factor model yielded an acceptable model fit to the data. Most fit indices indicated that the twelve-factor 38-item model, labeled as model A, was an adequate model across the Chinese and Australian sample (Chinese sample: $\chi^2 = 1095.97$; SRMR = .049; RMSEA = .046; CFI = .904; AIC = 1388. Australian sample: $\chi^2 = 1054.39$; SRMR = .067; RMSEA = .056; CFI = .893; AIC = 1355). On the other hand, the fit indices of the eleven-factor, 38-item measure, labeled as model B, also yielded very similar results across both

samples (Chinese sample: $\chi^2 = 1113.40$; SRMR = .048; RMSEA = .046; CFI = .906; AIC = 1386. Australian sample: $\chi^2 = 1070.41$; SRMR = .066; RMSEA = .056; CFI = .893; AIC = 1356). This result revealed that the items of relation-based self-observation and task-based self-observation could be merged to form a single factor in both Chinese and Australian student samples. Using the principle of parsimony, we recognize the eleven-factor model as providing the best model fit to the data. Furthermore, the two relation-based dimensions, namely relation-based natural reward and social-oriented evaluation of beliefs and assumptions, presented as two independent, distinct factors within the eleven-factor model across the cultural groups.

As suggested by Byrne (1998), we further examined the modification index and standardized residuals to improve the model fit of the eleven-factor model. The modification index demonstrated that two items cross-loaded with other unexpected factors (one item from the self-goal setting construct – "I think about goals that I intend to achieve in the future" and another item from the task-based natural reward construct – "I seek out activities in my work that I enjoy doing "). Following the suggestion to delete "doublet" items by Anderson and Gerbing (1988) in conjunction with content considerations, we dropped these two items and tested an alternative Model C that contained 36 items for both samples. The results for Model C are also shown in Table 5. Model C showed a somewhat better fit compared to Model B as the fit indices for Model

C were slightly better than those of Model B for both samples (χ^2 = 978.5; SRMR = .046; RMSEA = .045; CFI = .910; AIC = 1232, and χ^2 = 957.5; SRMR = .064; RMSEA = .055; CFI = .901; AIC = 1210 for the Chinese and Australian group respectively). In particular, the AIC value of Model C was obviously smaller than that of Model B in both samples. Consequently, these results suggested that the eleven-factor of Model C with 36 items provided the best model fit. The standardized factor loading estimates for the MSLQ's items on their latent factors are depicted in Table 6 for both groups separately. All of the factor loading coefficients were positive, statistically significant and moderately high for both Chinese and Australian samples.

Table 5

Summary of the overall fit for Confirmatory Factor Analysis Models of the Modified Self-leadership Questionnaire (MSLQ)

Model Description	χ^2	df	SRMR	RMSEA	RMSEA 90% CI	CFI	AIC
Chinese sample							
Model A: Twelve-factor Model – 38 items	1095.97	599	.049	.046	.042 - .050	.904	1388
Model B: Eleven-factor Model – 38 items	1113.40	610	.048	.046	.042 - .050	.906	1386
Model C: Eleven-factor Model – 36 items	978.5	539	.046	.045	.041 - .050	.910	1232
Australian sample							
Model A: Twelve-factor Model – 38 items	1054.39	599	.067	.056	.051 - .062	.893	1355
Model B: Eleven-factor Model – 38 items	1070.41	610	.066	.056	.050 - .061	.893	1356
Model C: Eleven-factor Model – 36 items	957.5	539	.064	.055	.049 - .061	.901	1210

Note. SRMR = Standardized root mean squared residual; RMSEA = the root mean square error of approximation;

90% CI = 90% Confidence Interval; CFI = comparative fit index

Table 6

Standardized Factor Loadings Estimates for the Eleven-Factor Model with 36 items for the Chinese and Australian samples.

Factor	Item		Chinese sample	Australian sample
Visualizing successful performance	1.	I use my imagination to picture myself performing well on important tasks.	.599	.811
	2.	I visualize myself successfully performing a task before I do it.	.844	.729
Self-goal setting	3.	I consciously have goals in mind for my work efforts.	.762	.749
	4.	I work toward specific goals I have set for myself.	.721	.818
	5.	I write specific goals for my own performance	.724	.669
Self-talk	6.	Sometimes I find I'm talking to myself (out loud or in my head) to help me deal with difficult problems I face.	.676	.851
	7.	When I'm in difficult situations I will sometimes talk to myself (out load or in my head) to help me get through it.	.814	.889
	8.	Sometimes I talk to myself (out loud or in my head) to help me get through my work.	.848	.924
Self-reward	9.	When I do an assignment especially well, I like to treat myself to some thing or activity I especially enjoy.	.742	.857
	10.	When I do something well, I reward myself with a special event such as a good dinner, movie, shopping trip, etc.	.827	.869
	11.	When I have successfully completed a task, I often reward myself with something I like.	.808	.953
Self-punishment	12.	I tend to get down on myself in my mind when I have performed poorly.	.530	.661
	13.	I tend to blame myself when I have not done well on a task.	.794	.787
	14.	I feel guilty when I perform a task poorly.	.787	.826
	15.	I sometimes feel displeasure with myself when I have not done well.	.651	.741
Task-based natural reward	16.	My thinking focuses more on the things I like about actually doing my work than on benefits I expect to receive.	.466	.622
	17.	I think that the enjoyment gained from work is more important than external rewards.	.674	.588
	18.	I try to get enjoyment in the work process rather than in the benefit I plan to gain.	.773	.738

Relationship-based natural reward items	19. I try to think of the pleasure obtained from fitting myself in with my classmates/team members I work with.	.615	.543
	20. I focus on the good feeling I gain by working harmoniously with my classmates/team members.	.613	.734
	21. I find my own favorite ways to meet my team members' needs.	.588	.671
	22. I think of the enjoyment I gain from helping classmates/team members reach their goals.	.635	.642
Task and relationship -based self observation items	23. I usually examine how well I'm doing at school/work.	.529	.623
	24. I am usually aware of how well I'm doing as I perform an activity.	.651	.457
	25. I keep track of how well I fulfill the expectation of my classmates/team members.	.656	.606
	26. I am usually aware whether I could adapt to the expectation of my teachers/team members when I perform an activity.	.722	.635
Individual-oriented evaluation of beliefs and assumption items	27. I evaluate whether I have any dysfunctional thinking whenever I encounter a difficult situation.	.548	.619
	28. I will evaluate my ways of thinking to see if it exerts any negative impacts on my work.	.683	.735
	29. I try to evaluate the consequences of my negative thinking.	.572	.811
	30. I review whether my judgment has been too negative when facing problems.	.548	.783
	31. I try to mentally evaluate the accuracy of my own beliefs about situations I am having problems with.	.625	.724
Social-oriented evaluation of beliefs and assumption	32. When I differ from others' opinions, I try to modify my thinking to avoid conflicts so as to maintain harmony.	.578	.520
	33. When I have conflicts with my classmates/team members I evaluate my thinking to see if there is anything wrong.	.603	.492
	34. I examine whether my thinking can fit in with the opinions of my classmates/ team members	.690	.805
Self-Cueing	35. I use written notes to remind myself of what I need to accomplish.	.767	.793
	36. I use concrete reminders (e.g. notes and lists) to help me focus on the things I need to accomplish.	.890	.904

Note: All factor loadings are significant, p < .001. For content description of each item, please refer to the Appendix.

Internal Consistency Reliability

Means, standard deviations, factor reliability and correlation estimates across the Chinese and Australian student samples are provided in Table 7. In general, the factor correlations of both samples were not high, demonstrating that self-leadership's eleven dimensions represented by these factors are theoretically distinct constructs. In addition, most factors had moderate to high reliability which meet adequate reliability standards. However, the alpha of task-based natural rewards, and social-oriented evaluation of beliefs and assumptions in the Australian student samples and visualizing successful performance in the Chinese student sample were .69, .67 and .67 respectively, which were slightly below but still very close to the threshold of .70 suggested by Nunnally (1978).

Configural Invariance. Given the good fit of the 36-item eleven-factor model to both samples, a multi-group CFA was used for the testing of measurement invariance. First, the equality of the same factor structure was tested across the Chinese and Australian groups (configural invariance). As shown in Table 8, all fit indices indicate a good model fit for both groups (SRMR = .047, RMSEA = .035, CFI = .903).

Metric Invariance. Given that configural invariance was supported, we continue to test for metric invariance where factor loadings were constrained to be equal across groups. As described earlier, we used Chen (2007)'s suggested $\triangle$CFI of $\leq$ - .005 and

$\triangle$RMSEA of $\leq .010$ as indicators that the constrained model of metric invariance

adequately fit the data. As shown in Table 8, the difference in CFI and RMSEA value

between   the   baseline   model   (configural   invariance)   and   metric

Table 7

Means, Standard Deviations, Factor Reliability Estimates and Factors Correlations for Chinese and Australia Students Samples (Model C – 36 items).

Factor	1	2	3	4	5	6	7	8	9	10	11	Australia Students (n = 241) M	SD	α
1. Visualizing successful performance	**1.0**	.35**	.33**	.26**	.13**	.14**	.17**	.40**	.33**	.13*	.19**	3.14	1.03	0.74
2. Self-goal setting	.51**	**1.0**	.33**	.27**	.18**	.22**	.20**	.46**	.47**	.28**	.52**	3.45	0.92	0.78
3. Self-talk	.42**	.25**	**1.0**	.32**	.25**	.15**	.14**	.34**	.36**	.21**	.21**	3.40	1.13	0.92
4. Self-reward	.19**	.27**	.21**	**1.0**	.17**	.15**	.20**	.26**	.15**	.20**	.24**	3.45	1.06	0.92
5. Self-punishment	.17**	.13**	.18**	.03	**1.0**	-.04	.07	.27**	.24**	.25**	.12**	3.48	0.86	0.84
6. Task-based natural rewards	.19**	.32**	.21**	.16*	.09	**1.0**	.42**	.26**	.28**	.27**	.04	3.01	0.79	0.69
7. Relation-based natural rewards	.28**	.34**	.18**	.15*	.07	.47**	**1.0**	.45**	.40**	.57**	.07	3.07	0.77	0.73
8. Self-observation [a]	.44**	.60**	.17**	.25**	.21**	.33**	.42**	**1.0**	.60**	.43**	.20**	3.31	0.72	0.70
9. Individual-oriented evaluation of beliefs and assumptions	.50**	.39**	.39**	.19**	.14*	.33**	.36**	.43**	**1.0**	.46**	.19**	2.90	0.87	0.85
10. Social-oriented evaluation of beliefs and assumptions	.15**	.20**	.20**	.06	.15*	.22**	.52**	.25**	.41**	**1.0**	.11*	2.87	0.78	0.67
11. Self-cueing	.23**	.48**	.18**	.17*	.14*	.21**	.24**	.21**	.20**	.17**	**1.0**	3.75	1.14	0.83
Chinese Students (n= 395)														
M	3.20	3.32	3.33	3.78	3.54	3.18	3.45	3.32	3.12	3.41	3.37			
SD	0.81	0.74	0.88	0.80	0.74	0.75	0.62	0.63	0.63	0.64	0.99			
α	0.67	0.77	0.82	0.83	0.78	0.70	0.72	0.73	0.73	0.71	0.81			

Note: Values below the diagonal represent the factor correlations for Australian students and values above the diagonal represent the factor correlations for Chinese students. *p < .05. **p<.01.

[a] This factor includes the items of two subscales (task-based self-observation and relation-based self-observation) which are merged into one single factor in CFA.

invariance model fell below the critical difference of .005 and .01. We concluded that

metric invariance was supported.

Scalar Invariance. Because the metric invariance model was supported, the next

step was to test for scalar invariance. Scalar invariance was tested by constraining the

intercepts of the 36 indicators to be the same across the two groups. The difference in CFI

between the scalar invariance model (Model 3) and the metric invariance model (Model 8)

was larger than .005. Thus the model of full scalar invariance was not supported.

However, as argued by Byrne et al. (1989) and Meredith (1993), full metric and scalar

invariance is not a necessary condition for making meaningful comparison of means

across cultures provided that at least two items per factor exhibit metric and scalar

invariance. In order to assess whether a reasonable degree of partial scalar invariance

could be achieved, a modification index (MI) was used to locate intercepts that are not

invariant across the Chinese and Australian sample (Steenkamp & Baumgartner, 1998)[1].

This examination revealed that the significant increase in χ^2 value was due to a lack of

scalar invariance of eight indicators from seven factors: self-reward (1 item), self-

punishment (1 item), relationship-based natural reward (1 item), task-based natural

reward (1 item), task and relationship-based self observation (1 item), individual-oriented

evaluation of beliefs and assumption (2 items), Social-oriented evaluation of beliefs and

assumption (1 item). Relaxing the constraints of equal intercepts for these eight indicators

yielded substantial improvement in fit as compared to the full scalar invariance model

(see Table 8). This partial scalar invariance model (Model 4) was evaluated against the

metric invariance model (Model 2). Because the difference of CFI and RMSEA fell below

the critical difference of .005 and .010, we concluded that partial scalar invariance was

supported (see Table 8).

Table 8

Results for Measurement Invariance Tests

Model Description	χ^2	df	SRMR	RMSEA	CFI	Model Comparison	△CFI	△RMSEA
Model 1: Configural invariance (baseline model)	1935.86	1078	.047	.035	.903	-		
Model 2: Full metric invariance	1988.12	1103	.047	.036	.900	2 vs. 1	-.003	.001
Model 3: Full metric and full scalar invariance	2315.33	1139	.048	.038	.868	3 vs. 2	-.032	.002
Model 4: Full metric and partial scalar invariance	2162.38	1130	.047	.038	.898	4 vs. 2	-.002 .	.002

Note. SRMR = Standardized root mean squared residual; RMSEA = the root mean square error of

approximation; CFI = comparative fit index.

Discussion

Self-leadership theory has developed largely within the context of the culture of

the USA. Despite the growing academic interest in exploring the influence of culture on

individuals' use of self-leadership strategy, the intercultural aspects of self-leadership have received limited attention to date. One possible reason is the lack of a measurement tool that is applicable across different cultures. Without a reliable scale that is demonstrated to be equivalent across cultural groups, any conclusion drawn from comparing the mean scores of self-leadership constructs is questionable. The purpose of this study was to examine the measurement equivalence of a survey instrument (MSLQ) using Chinese and Australian samples representing Eastern and Western cultures respectively.

Our findings provide additional support for the stability of the eleven-factor model that was found in previous validation research (Ho & Nesbit, 2009). This study provided solid support for configural invariance, suggesting that the overall factor structure was demonstrated to be equivalent across the Chinese and Australian groups. This suggested that respondents from Chinese and Western cultures did not differ from one another in terms of the conceptual meaning attached to all self-leadership factors. The metric invariance model was also solidly supported, which further suggests that Chinese and Australian groups used the rating scale in similar ways. However, our findings found that there was a lack of scalar invariance of eight indicators from seven factors. This suggested that the intercepts of these eight indicators are nonequivalent across cultures.

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Nonequivalent intercepts may be caused by cross-cultural differences in acquiescence response style (ARS) which occurs when participants in one cultural group systematically give higher or lower responses than do participants in another group (Cheung, 2008). Furthermore, respondents' higher tendency to respond positively to items in one culture leads to a higher scale origin in that particular culture. This tendency could be explained in terms of social desirability or a belief that a higher score is a better score (Cheung & Rensvold, 2000). Nevertheless, although the MSLQ did not meet full scalar invariance, according to Bryne, Shavelson, and Muthen (1989) and Steenkamp and Baumgartner (1998), full scalar invariance is not a necessary condition for comparison of the means of latent factors across cultural groups, provided that at least two items per factor exhibit metric and scalar invariance which was achieved in this study. Thus the MSLQ has met the condition of partial scalar invariance across Western and Eastern cultures.

Internal reliability estimates provide additional evidence for the psychometric properties of both Chinese and English version of the MSLQ. In most cases, the alpha coefficients were found to be acceptable and comparable across the Chinese and Australian samples. However, the subscale of task-based natural rewards and social-oriented evaluation of beliefs and assumptions in the Australian sample and visualizing successful performance in the Chinese sample did not reach acceptable reliability,

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although they were both close to the accepted level. Thus it is suggested that caution should be taken when interpreting scores calculated from these factors.

Given that configural, metric and partial scalar invariance were established, our findings of measurement invariance between the Chinese and Australian samples provide evidence that researchers could use this instrument to make valid cross-cultural comparisons (see Little, 1997; Vandenberg & Lance, 2000).

Limitation and future research

As with most research, this study is subject to limitations. The use of a student sample within a narrow age range may limit the generalizability of results, despite the cultural appropriateness of the sample used. Future researchers may consider using a less homogeneous, non-student sample such as employees in a work setting with wider age range. It would also be of interest to examine whether the MSLQ self-leadership measure could be generalized to other western and non-western countries such as Japan, Korea and Malaysia. The marginal reliability estimates of two factors in the Australian sample ('task-based natural rewards', 'social-oriented evaluation of beliefs and assumptions') and one factor in the Chinese sample ('visualizing successful performance') suggest further item modification which may improve the reliability of this scale.

As noted earlier, based upon the research findings of some cross-cultural studies (Hofstede, 1980; Oyserman, Coon, & Kemmelmeir, 2002), our study assumed that the Hong Kong subjects were collectivists, whereas the Australian subjects were classified as individualists. Without measuring the cultural differences of these two samples in terms of the individualism-collectivism orientation (Singelis, Triandis, Bhawuk, & Gelfand, 1995), it is possible that these young Hong Kong students may be open to greater influence from Western culture and be more individualistic in their values, like the Australian sample. However, we are not aware of any empirical research arguing for a convergence of cultural values among young Hong Kong Chinese to Western Individualism. Indeed, a number of surveys of Hong Kong residents have found a growing identification with China (Wong, 2010). Furthermore, the Chinese students in our sample speak Cantonese in their education and in their daily lives. While it is unlikely that these two samples are similar in terms of their cultural value orientation, we nevertheless, suggest that future studies utilize specific measures of individualism/collectivism in their research

Although the overall factor structure was found to be similar across Eastern and Western cultural groups in our study, suggesting that the MSLQ possess conceptual equivalence, additional research is needed to further confirm the conceptual equivalence

of self-leadership measure through examining the nomological network across cultures.

According to Leung (2008, p. 61), "nomological network provides the definitive answer

to the question of conceptual equivalence. If a construct is related to similar antecedents

and consequences across different cultures, it must be conceptually similar." Indeed, the

self-leadership literature has suggested a number of antecedents and outcomes thought

to be associated with the application of self-leadership strategies. These include self-

efficacy, personality traits such as conscientiousness and internal locus of control,

positive affect, job satisfaction, and psychological empowerment. Future research should

continue to investigate the correlations between the MSLQ's factors and other constructs

in order to identify similarities and differences in these correlations across cultures.

In conclusion, this study provides evidence that the MSLQ is an appropriate measure

to make cross-group comparisons between English and Chinese-speaking participants.

This study serves as a springboard for future research to identify potential differences in

self-leadership behaviors between Eastern and Western populations.

Footnotes

[1] Steenkamp & Baumgartner (1998) recommended that invariance constraints could be

relaxed for those intercepts where the MIs are highly significant (both in absolute

magnitude and in comparison with the majority of other MIs). In our study, MIs

corresponding to eight intercepts were all larger than 40. These eight MIs were much

higher than the majority of MIs of other intercepts. Thus, these eight items were identified

as non-invariant across the Chinese and Australian sample

CHAPTER FIVE - STUDY THREE

USE OF SELF-LEADERSHIP STRATEGIES:

A COMPARATIVE STUDY OF HONG KONG

CHINESE AND AUSTRALIAN STUDENTS

Author: Jessie Ho[1], Paul L. Nesbit[1]

[1]*Macquarie Graduate School of Management, Macquarie University, Australia*

Statement of Contributions of Joint Authorship

Jessie Ho: **(Candidate)**

synthesized and summarized literature, provided conceptual overviews, writing of manuscript, designed research methodology, conducted data analysis, and preparation of tables.

Paul L. Nesbit: **(Thesis Supervisor)**

supervised and assisted with manuscript editing and co-author of manuscript.

Chapter Five

Linkage of Paper to Thesis Objectives

This chapter is a journal article under review by *Journal of Managerial Psychology*. It

presents research which investigates how cultural differences in self-concept and

regulatory focus shape individuals' use of self-leadership strategies. In chapter 4, the

testing of measurement invariance provided evidence that the Modified Self-leadership

Questionnaire (MSLQ) is equivalent between the Chinese and Australia students. This

suggests that the MSLQ is an appropriate measure to make meaningful cross-cultural

comparison of self-leadership behaviors. As discussed in Chapter 1 and 2, there is very

limited research on comparing self-leadership behaviors across cultures. To address this

research gap, this study, using the MSLQ scale, aims to identify potential cultural

differences in the use of self-leadership strategies between the Hong Kong and Australian

students. The findings of this study may help global managers improve their managerial

effectiveness through understanding how their subordinates from Eastern and Western

cultures lead themselves to reach their goals.

Abstract

Study Three: Use of Self-leadership strategies: A comparative study of Hong Kong Chinese and Australian students

Purpose -

The study aims to examine how culture influences the use of self-leadership strategies among Hong Kong and Australian students.

Design/methodology -

The modified self-leadership questionnaire (MSLQ) was administered to 395 Chinese students and 241 Australian students.

Findings -

Results revealed that significant cultural differences were found for some dimensions of self-leadership strategies. Chinese students reported greater use of self-reward, relation-based natural reward, individual-oriented and social-oriented evaluation of beliefs and assumption, whereas Australian students reported greater use of self-goal setting, and self-cueing. However, no cultural differences were found for the use of self-punishment, positive self-talk, visualizing successful performance as well as task-based natural rewards.

Research limitation/implications

The use of a student sample may limit the generalizability of the results, despite the cultural appropriateness of the sample used. Future researchers may consider using other population samples, such as work employees from both Eastern and Western culture.

Practical implications

This study provides managers working in multinational corporations with insights in respect of the cross-cultural similarities and differences in the use of self-leadership strategies between Eastern and Western populations. Managers may improve their managerial effectiveness by understanding how their subordinates from different cultural backgrounds lead themselves to reach their goals.

Originality/value –

Using a well-developed self-leadership scale, the study empirically explores how differences in self-construals and regulatory focus between Eastern and Western cultures influence individuals' use of self-leadership strategies.

Introduction

Over the past two decades, multi-national organizations have restructured, and moved toward decentralized, organic-type organizational structures (Conger and Kanungo, 1988) in response to the rapid changes in the business environment. People with high levels of capacity and skills in self-direction and self-influence should respond more successfully and effectively to the dynamic changes of organization structures and environments (Ensley *et al*., 2006). Thus self-leadership, which is defined as "a self-influence process through which people achieve the self-direction and self-motivation necessary to perform" (Neck and Houghton, 2006, p. 2), has become an important concept in management research.

Self-leadership strategies are typically classified into three categories, namely behavior-focused strategies, natural reward strategies, and cognitive or thought pattern strategies (Manz and Neck, 2004; Prussia *et al*., 1998; Sims and Manz, 1996). Behavior-focused self-leadership involves using action-oriented strategies to accomplish tasks that are difficult or are neither enjoyable nor motivating. Sims and Manz (1996) identified various behavior-focused self-leadership strategies, including self-observation, self-goal setting, self-reward, self-punishment, and self-cueing strategies. Natural reward strategies are designed to enhance intrinsic motivation for better performances by focusing one's attention on the pleasant aspects of a given job and by engaging in job- or task-redesign to

build in more enjoyable work activities (Manz and Neck, 2004). Constructive thought

strategies involve visualizing successful performance, engaging in positive self-talk, and

examining individual beliefs and assumptions to align cognitions with desired behavior

(Neck and Manz, 1996; Neck *et al*., 1995). Research on the use of self-leadership

strategies has found it to be effective at enhancing performance in clinical, athletic, and

educational settings (Neck and Manz, 1992), and in employment contexts (Neck and

Manz, 1996; Stewart *et al*., 1996).

With the increasing numbers of multinational corporations in the global economy

and increased interdependencies among nations, employees are increasingly required to

work with others from diverse nationalities and cultural backgrounds. Consequently,

management scholars have become more interested in understanding how culture

influences behavior in organizational settings. Thus, given the growing importance of

self-leadership in contemporary organizations operating in an increasingly global and

interdependent environment, there is a need to explore the applicability of self-leadership

theory across cultures (Stewart *et al*., 2011; Neck and Houghton, 2006; Alves *et al.,* 2006;

Neubert and Wu, 2006). Most research on self-leadership has been conducted in the

United States, which represents a relatively individualistic, western culture. While it has

been argued that self-leadership behavior is a generally universal concept (Alves *et al*.,

2006), there is need to empirically explore whether self-leadership strategies may be

applied differently across cultures. For example, Alves *et al.* (2006, p. 351) conceptually

explored the cross-cultural application of self-leadership using Hofstede's (1980) culture

framework and proposed that "high power distance is likely to contribute to a more

restricted and contingent form of self-leadership where the extent of self-influence

practiced that is independent of cultural expectations and norms is more limited."

Georgianna (2007) also studied the influence of culture on young adults' use of self-

leadership strategies. This study provided evidence that the US respondents expressed

higher levels of self-leadership than the Chinese respondents. However, each self-

leadership strategy was measured by only one item and so may not adequately capture the

theoretical conceptualization of self-leadership proposed by self-leadership theorists

(Manz, 1986; Manz and Sims, 1980; Manz and Neck, 2004). In order to advance cross-

cultural research on self-leadership, research utilizing a more reliable self-leadership scale

is needed.

The purpose of this study is to examine how culture influences individuals' use of self-

leadership strategies among the Chinese and Australian respondents, using a recently

developed self-leadership scale (Ho and Nesbit, 2009), which has been found to be valid

and reliable for use in both Eastern and Western cultures (Ho *et al*., 2012). We begin with

a discussion on how differences in self-construal between Eastern and Western cultures

shapes peoples' self-regulatory orientation, which in turn result in differences in the way

people regulate their behaviors toward goals accomplishment across cultures. We then

develop specific hypotheses for our research and outline a study that explores differences

between Eastern and Western participants in the practice of self-leadership strategies.

Theoretical Background and Hypotheses

Independent-Interdependent self-construal and Self-leadership

Considerable research in cultural psychology has identified two types of self-construal:

the independent and the interdependent self-construal (Markus and Kitayama, 1991;

Triandis, 1989; Gardner *et al.*, 1999). Independent self-construal represents a view of

oneself as an independent, self-reliant, autonomous individual who is separate from the

social context (Markus and Kitayama, 1991). The interdependent self-construal, on the

other hand, involves viewing oneself as "part of an encompassing social relationship"

(Markus and Kitayama, 1991, p. 227). According to Markus and Kitayama (1991), people

in Western and Eastern cultures differ in their views about the self. In Western cultures,

such as North America and Australia, an independent self-construal predominates and

people are motivated to become independent from others and to pursue the expression of

one's unique configuration of needs, rights, and capacities. In Eastern cultures, such as

China and Japan, an interdependent self-construal predominates, people tend to suppress

and restrain inner attributes such as desire, personal goals and private emotions to fit in

with significant others, and to meet social obligations as part of social networks (Triandis,

1995).

It has also been noted that these two different self-construal types are also reflected in the way people orient towards goal accomplishment and the way they regulate their behavior (Higgins, 1997; Lee *et al*., 2000). According to regulatory focus theory (Higgins, 1997), there are two fundamental self-regulatory orientations: promotion and prevention. Promotion regulatory focus involves peoples' desire for advancement, growth, and accomplishment, whereas the prevention regulatory focus involves peoples' concern for safety, obligation and responsibility (Heine *et al*., 1999).

Lee *et al*. (2000) argued that the primary goal of the independent self-construal is seen as developing one's unique potential through the pursuit of success and accomplishments. Thus, the goals of those with independent self-construal are viewed as more consistent with a promotion focus. In contrast, the primary goal of those with interdependent self-construal is to maintain harmony and connections with others, and to fulfill their social obligations (Markus and Kitayama, 1991). Thus, people with a dominant interdependent self-construal are inclined to avoid social disapproval or failures that may disrupt their commitment of enhancing social relations, which is more consistent with a prevention focus. Lee *et al.*'s (2000) experimental studies provided evidence that individuals with a dominant independent self-construal perceived promotion-framed scenarios to be more important than prevention-framed scenarios. In contrast, those with a dominant

interdependent self-construal perceived prevention-focused scenarios to be more important than promotion focused scenarios.

These differences in self-construal and regulatory focus have potential to result in differences in the practice of self-leadership strategies. Individualists (who are known to hold a predominant independent self-construal) may, for example, use self-leadership strategies that support the regulation of their cognitions and behaviors toward positive outcomes such as advancement and achievement. We expect that such individualists are more likely than collectivists to initiate the setting of challenging goals, apply self-rewards imposed for energizing the effort towards goal achievement, and construct certain concrete environmental cues (e.g. notes, motivational posters) used for shaping constructive behaviors. The application of these three self-leadership strategies may enhance the individualists' perceived control and self-efficacy in attaining their desired outcomes.

In contrast, collectivists (who are known to hold a predominant interdependent self-construal) strive to harmoniously fit in with others and to live up the expectations of significant others. Since collectivists place more emphasis on avoiding negative outcomes (Markus and Kitayama, 1991), they are more likely to exhibit prevention focus behaviors in their desire to avoid failure and mistakes that may jeopardize their goals of maintaining social harmony. Thus collectivists are expected to use self-leadership strategies in order to

regulate their cognitions and behaviors away from negative outcomes.

Research on self-regulatory focus has provided evidence that promotion-focus individuals are more persistent than prevention-focus individuals to attain success at difficult problem solving tasks (Crowe and Higgins, 1997). Crowe and Higgins (1997) found that participants in promotion-focus framing conditions persisted longer in solving more anagrams than those in the prevention-focus framing conditions. It was argued that individuals under prevention-focus framing conditions tend to quit difficult problem tasks earlier to avoid prolonging engagement with making mistakes. Given that promotion-focused individualists appear to place more value on the pursuit of personal success and accomplishment, we expect that Australian students, who represent individualists in this study, are more likely to set personal goals, construct environmental cues and apply self-reward to guide themselves than Hong Kong Chinese students who represent collectivists.

> H1: Australian students are more likely to apply self-goal setting strategy, self-reward strategy and self-cueing strategy than Hong Kong students.

It has been suggested that the adoption of a promotion regulatory focus among individualists involves sensitivity to the presence or absence of positive outcomes (Higgins, 1997). Such sensitivity may heighten individualists' attention on the positive side of their accomplishments. Previous studies found that individualists are more likely to attend to positive information than to negative information regarding themselves

(Heine *et al*., 2001; Heine *et al.,* 1999; Taylor and Brown, 1988). For example, Western

individuals may uncritically accept positive feedback while critically evaluating negative

feedback (Frey and Stahlberg, 1986). Heine (2005) also suggested that individualists are

more likely to engage in self-deceptive enhancement so as to boost their self-image. Since

promotion-focused individualists are eager to see themselves in a positive manner, we

propose that Australian students, who represent individualists, are more likely to lead

themselves through the strategy of visualizing successful performance and positive self-

talk. Positive self-talk is an optimistic internal dialogue people use to encourage

themselves for goal achievement (Burns, 1980; Manz and Neck, 2004). Visualizing

successful performance involves imagining the successful completion of a task or activity

(Manz and Neck, 2004). These two strategies are mental techniques which are expected to

help individualists to maintain a self-reliant, and competent self-view.

In contrast to individualists who are sensitive to the presence or absence of positive

outcomes, collectivists, driven by the need to feel secure and to avoid getting social

disapproval, tend to focus on the negative information about the self (Heine and Lehman,

1999). For example, research has found that Japanese are more self-critical than are North

Americans (Heine *et al*., 1999). Lee *et al*. (2000) stressed that "on the basis of the

identification of what is lacking in the self, steps are taken to improve on these deficits to

become a better, more unified part of the relevant social unit, a tendency that appears to

grow over time as nurtured by socialization processes (p. 1123)."

Therefore, the strategies of positive self-talk and visualizing successful performance are less relevant for collectivists' goals of improving interpersonal relations. Instead, self-punishment strategy, which involves self-criticism and guilt associated with one's unsatisfactory performance, would be more relevant for the collectivists. Self-punishment supports correction of task focused behavior, which is consistent with a prevention regulatory focus and the collectivist need for social acceptance. However, self-punishment strategy contributes little to individualists' needs of maintaining competent, positive self-views. Thus, we suggest different use of self-talk, visualization, and self-punishment strategies between the Hong Kong Chinese and Australian students.

> H2:   Australian students are more likely to apply visualizing successful performance and positive self-talk strategy than the Chinese students.

> H3: Chinese students are more likely to apply self-punishment strategy than the Australian students.

Self-leadership's conceptualization of natural rewards is based primarily on the intrinsic motivation literature, particularly Deci and Ryan's (1985) self-determination theory. Feelings of autonomy and competence are a central focus in the task-based natural rewards strategy component of self-leadership (Manz and Neck, 2004). This strategy involves building more pleasant and enjoyable features into a given activity and assumes

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that once activities and task can be restructured or perceived in ways that lead to

increased feelings of competence and self-determination, the enjoyment of the task will

be enhanced, resulting in higher task performance (Neck and Houghton, 2006). However,

while the enjoyment of the task attached to the values of autonomy and self-determination

may hold true for those from Western cultures emphasizing independence, it may be less

relevant for people from Eastern cultures with a strong need of relatedness. Iyengar and

DeVoe (2003) argued that in cultures that foster social interdependence, collectivists

might prefer to submit to choices expressed by others if the situation enables them to

fulfill the superordinate cultural goal of belongingness. For example, Iyenger and Lepper

(1999) found that the intrinsic motivation and performance of Asian American children

was highest, not in contexts offering personal choice, but in those in which choices were

determined for them by valued in-group members or trusted authority figure (e.g. their

mothers). Given that the feelings of maintaining in-group harmony and belongingness

rather than the feelings of self-determination and competence may act as a major source

of task enjoyment in collectivistic culture (Iyengar and Lepper, 1999), we expect that

relation-based natural reward strategy which involves getting work enjoyment through

maintaining connections with others is more relevant for collectivists than for

individualists. Thus we argue that Australian students with a dominant independent self

view may use task-based natural reward strategy more often than do the Hong Kong

Chinese students, whereas the Chinese respondents with a dominant interdependent self

may apply relation-based natural reward strategy more frequently than do the Australian

respondents.

H4: Australian students are more likely to apply task-based natural rewards than

the Chinese students.

H5: Chinese students are more likely to apply relation-based natural rewards than

the Australian students.

While cultural value influences the way people get enjoyment from their jobs, it also

shapes individuals' ways of controlling their own thought and beliefs inherent in goal

achievement. According to Kim and Markus (1999), people from individualistic cultures

are encouraged to search for their own dreams and freedom beyond the constraints

imposed by rules, norms, and others' expectation. Accordingly, individualists may seek to

regulate themselves for personal success by reference to their own internal repertoire of

thoughts, feelings, and actions, rather than by reference to the standards and opinions of

others or social groups (Heine *et al*., 1999). In contrast, people from collectivistic culture

are motivated to find a way to fit in with relevant others, to fulfill obligation in order to

become part of interdependent interpersonal relationships (Markus and Kitayama, 1991).

Given that the goal-striving behaviors of individualists are more self-oriented than

collectivists, the strategy of social-oriented evaluation of beliefs and assumption with a

strong focus on improving social relations is less relevant. In contrast, collectivists are more likely to use social-oriented evaluations of beliefs and assumption strategy because it helps them to adjust their own viewpoints to avoid conflicts with those of their in-group (Ho and Nesbit, 2009).

In addition, the self-leadership strategy of examining one's individual-oriented beliefs and assumptions is expected to be more suitable for individualists than for collectivists. This strategy aims to help one recognize one's dysfunctional thinking and destructive beliefs, learn to challenge them, and replace them with more constructive thoughts. Using this strategy may help individualists to enhance their personal success by reflecting on their own thinking processes relative to their goals. However, individual-oriented belief and assumption strategy may be less relevant for collectivists who place heavy emphasis on improving social relations and maintaining one's respected place within a group. On this basis we expect to see the following differences in the nature of evaluation of beliefs and assumptions among the Australian and Hong Kong Chinese students.

> H6: Chinese students are more likely to apply social-oriented evaluation of beliefs and assumptions than the Australian students.

> H7: Australian students are more likely to apply individual-oriented evaluation of beliefs and assumptions than the Chinese students.

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Method

Participants

Participants were from Hong Kong and Australia and represented two diverse cultures. The collectivist cultural value is assumed to be maintained among these Chinese participants from Hong Kong, especially given the strong influence of the Chinese social influences, such as exposure to Chinese mainland influences and by the fact that the Hong Kong students' education was mostly conducted in Cantonese. Hofstede (1980) and Oyserman *et al*. (2002) have found that Australia has emerged as one of the most individualistic societies in the world.

Chinese sample. Responses were collected from 395 full-time Chinese students (64% female; 36% male) undertaking business classes at a community college in Hong Kong. Ages ranged from 18 to 29 (Mean = 19.9, S.D. = 1.16). The questionnaires were completed anonymously and participation was voluntary without compensation.

Australian sample. The sample was made up of 241 Australian full-time students who were born and had lived all their lives in Australia (69% female; 31% male). All respondents were recruited from two public universities located in Sydney. Ages ranged from 17 to 50 (Mean = 20.4; S.D. = 4.55). All students were undertaking psychology classes and received course credit for their participation. In order to maximize the possible differentiation between the two cultural groups, overseas born students were

excluded from the respondent sample.

Measures

Self-leadership was measured using the modified Self-leadership Questionnaire (MSLQ) developed by Ho and Nesbit (2009). Ho *et al.* (2012) have provided evidence that the MSLQ is equivalent across the Chinese and Western cultures. Thus, the MLSQ is a reliable measure for this study to make valid cross-cultural comparisons. For detailed discussion regarding the statistical procedures of testing measurement invariance, please refer to the study conducted by Ho *et al.* (2012). The MSLQ consists of 38 items describing various behaviors associated with self-leadership and participants use a 5-point Likert-type scale (1 = not all accurate; 2 = a little accurate; 3 = somewhat accurate; 4 = mostly accurate; 5 = completely accurate) to indicate how accurately each behavior describes them. The 10 subscales include Visualizing Successful Performance (2 items); Self-goal Setting (4 items); Self-talk (3 items); Self-reward (3 items); Self-punishment (4 items); Task-based Natural Reward (4 items); Relation-based Natural Reward (4 items); Individual-oriented Evaluation of Beliefs and Assumptions (5 items); Social-oriented Evaluation of Beliefs and Assumptions (3 items); Self-cueing (2 items). Sample items include "I use my imagination to picture myself performing well on important tasks," "I consciously have goals in mind for my work efforts," "I think that the enjoyment gained

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from work is more important than external rewards," and "When I differ from others'

opinions, I try to modify my thinking to avoid conflicts so as to maintain harmony." See

Ho and Nesbit's (2009) validation research for the complete questionnaire.

Results

1. Data Analysis Procedure

In the present study, following the procedure outlined by Byrne (2001), we used the

analysis of latent-mean differences through multi-group confirmatory factor analysis to

test for the seven hypotheses stated above (Drasgow and Kanfer, 1985; Byrne *et al*.,

1989). It has been suggested latent-mean differences are more valid than the analysis of

variance (ANOVA) or t-tests (Polyhart and Oswald, 2004), as the method accommodates

varying degrees of partial measurement invariance (see Reise *et al*., 1993), which was the

case for the MSLQ reported in Ho *et al*. (2012).

Latent construct means were compared by allowing eight intercepts (found to be not

equivalent across groups in this study) to vary freely while constraining other intercepts

and all factor loadings, to be identical across groups (Polyhart and Oswald, 2004;

Steenkamp and Baumgartner, 1998). As part of this procedure, it was necessary to allow

latent-variable means (e.g. average mean score of self-goal setting factor) to be freely

estimated for the Australian group but to be constrained to zero for the Chinese group,

which served as a "reference group". Selection of which cultural group would serve as the reference group is purely arbitrary (Byrne, 2001). Significant positive mean differences would indicate that the Australian group reported higher ratings on a given measure. In determining significant differences, the critical ratio with values greater than ± 1.96 indicated statistical significance ($p \leq .05$; Arbuckle and Wothke, 1999).

2. Test of Hypotheses

As shown in Table 9, compared with the Chinese respondents, Australian respondents reported significantly higher use of self-goal setting (mean $_{diff}$ = .162, p<.05), and self-cueing (mean $_{diff}$ = .392, p<.001). This was consistent with H1. However, Australian respondents reported less use of self-reward strategy (mean $_{diff}$ = -.266, p<.001) than did Chinese respondents which was in the opposite direction to the prediction of H1. Therefore, H1 was only partially supported. There were no significant cultural differences in visualizing successful performance (mean $_{diff}$ = -.076, p > .05), positive self-talk (mean $_{diff}$ = .080, p > .05), self-punishment (mean $_{diff}$ = .002, p > .05) and task-based natural reward (mean $_{diff}$ = -.106, p > .05). Thus H2, H3, and H4 were not supported.

As predicted, Chinese respondents reported significantly higher use of relationship-based natural reward (mean $_{diff}$ = -.339, p<.001) and social-oriented evaluation of beliefs and assumptions (mean $_{diff}$ = -.372, p<.001) than Australian respondents. Thus, H5 and H6 were supported. Moreover, contrary to the prediction of H7, Chinese respondents reported

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using individual-oriented evaluation of beliefs and assumptions to a greater extent than

did Australian respondents (mean $_{diff}$ = -.135, p < .05). Hence, H7 was not supported in

this study.

Table 9. Results for Latent Mean Difference Tests

Measure	Mean difference	Standard Error	Critical Ratio	P
Self-goal setting	.162	.067	2.439	< .05
Self-reward	-.266	.077	-3.458	<.001
Self-Cueing	.392	.086	4.544	<.001
Visualizing successful performance	-.076	.083	-.910	>.05
Positive self-talk	.080	.091	.882	>.05
Self-punishment	.002	.054	.035	>.05
Task-based natural reward	-.106	.071	-1.490	> .05
Relation-based natural reward	-.339	.066	-5.123	<.001
Individual-oriented evaluation of beliefs and assumption	-.135	.066	-2.059	< .05
Social-oriented evaluation of beliefs and assumption	-.372	.055	-6.722	<.001

Discussion

The purpose of this study was to examine whether culture influences the individuals' use

of self-leadership strategies. In the present study, significant cultural differences were

found for some dimensions of self-leadership strategies among the Chinese and

Australian respondents. As predicted, Chinese students utilized the relation-based natural

reward and social-oriented evaluation of beliefs and assumption strategy more frequently

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than Australian students. This finding suggested that these two strategies, which are associated with some social/relation-based features, are more suitable for Chinese who have interdependent self-construal and are more motivated to maintain in-group harmony and to act in accordance with the anticipated expectations of others and social norms. On the other hand, the Australian students, who have independent self-construal, used self-goal setting, and self-cueing strategy more often than did the Chinese students. These findings are consistent with hypotheses developed from regulatory focus theory (Higgins, 1997) and the theory of independent-interdependent self-construals (Markus and Kitayama, 1991). Specifically, Australian respondents with independent selves tend to be more promotion-focused. Hence, they are more proactive in setting their own goals and environmental cues so as to enhance their persistence in achieving personal success.

It is interesting that, contrary to predictions, the Chinese students utilized the strategies of self-reward and individual-oriented evaluation of beliefs and assumption more often than the Australian students. In addition, there were no significant differences between the Chinese and Australian students in terms of the mean scores measuring visualizing successful performance, positive self-talk, self-punishment and task-based natural rewards.

Given that students from Hong Kong and Australian were the respondents in this study, then self-leadership strategies would be most likely referenced in relation to how students

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manage themselves in performing at University. Thus an explanation for these mixed

findings may arise from different cultural values for the achievement of academic goals.

According to Bond (1991), for Chinese students "social skills, athletic ability or personal

fulfillment are secondary to doing well in school…since academic achievement is still a

major escalator to higher position, parents exert massive pressure on their children to do

well in school" (p.18). Additionally, education research has found that Asian students

possess higher achievement motivation than Western students because Asians believe all

performance is linked to an internal and controllable source – effort, whereas Westerners

believe more in fixed ability (Dweck, 1999; Tweed and Lehman, 2002). This belief

influences Asian parents to place higher academic expectations on their children

(Stevenson *et al*., 1991). Reglin and Adams (1990) found that even among Asian students

brought up in the American culture, these children are more influenced by their parents'

desire for success than are their non-Asian counterparts. Thus, Asian students' desire to

meet their parents' academic expectations, coupled with their belief in learning through

effort rather than being a fixed ability, may translate into higher level of self-control effort

striving for academic success.

In addition, the Confucian tradition in teaching is still a major source of influence on

child rearing practices in Hong Kong (Salili and Lai, 2003). Confucius's conception of

learning is a process of "studying extensively, inquiring carefully, pondering thoroughly,

sifting clearly, and practicing earnestly" (Lee, 1996, p.35). According to Tang and Biggs (1996, p. 159), "success comes to those who apply themselves to their allotted tasks unremittingly; with diligence, you can grind an iron bar into a needle, as a Chinese proverb puts it." Memorization is viewed as an important way to get familiar with learning content. In order to ensure accurate recall of already understood information, Hong Kong students tend to practice repetitive learning (Biggs, 1996; Azuma, 1986; Singleton, 1989), which are unpleasant and boring. To deal with the unattractive but necessary tasks of memorization, Hong Kong Chinese students may take more initiative to apply the strategies of self-reward and individual-oriented evaluation of beliefs. That is, these Chinese students may tend to reward themselves with things and activities they enjoy when they accomplish their academic goals. Also, to reduce their intense stress they face at school, they may be more inclined to identify their dysfunctional beliefs and replace them with more rational thoughts.

Thus an explanation for the unexpected findings in this study is that Chinese students possess a high need to approach academic success because of the Chinese value of educational achievement (Biggs, 1996; Li, 2001) and thus such tendencies may propel Chinese students to become more promotion-focused. Similar to the Australian students, they tend to see themselves in a positive manner so as to maintain a self-reliant, competent self-view. In so doing, they may downplay the role of self-criticism (self-

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punishment strategy) so as to minimize its negative impact on self-confidence and practice the self-motivated strategies of visualizing successful performance, positive self-talk and task-based natural rewards as often as did the individualists (Australian students). Such tendencies result in the insignificant differences across cultures in the use of these four strategies.

However, despite the fact that Chinese exhibit promotion focus in their use of many self-leadership strategies, they were less likely to apply self-goal setting strategy and self-cueing strategy than the Australian students. These behaviors may be explained by the collectivitist self-construal of Chinese students who seek to meet standards set by significant others, such as teachers and parents. Australian students, on the other hand, have individualistic self-construal and so are more inclined to set their own goals. As their teachers play little role in influencing their goal-setting process, the Australian students should apply more self-cueing strategies to help them behave in desirable ways. For example, the Australian students may create a list of some important tasks they should accomplish for building up their career such as attending career talk, or searching for an internship jobs based on their career preference. While these explanations are tentative, they suggest that in addition to the cultural differences in self-construal and regulatory focus, the cultural values in relation to types of individual goals (e.g. academic goal) may play an important role in shaping the differences and similarities in the use of self-

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leadership strategies between the Chinese and Australian students.

Given the current trend of globalization, it is increasingly likely that managers working in multinational corporations are required to manage their subordinates from different cultures. Furthermore, as mentioned earlier, over the past two decades, multi-national organizations have restructured, and moved toward decentralized, organic-type organizational structures (Conger and Kanungo, 1988) in response to the rapid changes in business markets. People with high level of self-leadership skills could respond more effectively to the dynamic changes of organization structures and environments. Consequently, global managers may improve their managerial effectiveness by understanding how their subordinates with different cultural backgrounds lead themselves to reach their goals. This study provides the global managers some insights in respect of the cross-cultural similarities and differences in the use of self-leadership between Eastern and Western populations. Especially, significant cultural differences found in this study may suggest that Chinese employees are less likely to use self-goal setting, and self-cueing, whereas Australian employees are less likely to use relation-based natural reward and social-oriented evaluation of beliefs and assumption. Global managers could lead their Chinese subordinates to set their own challenging goals, and construct certain environmental cues used for shaping desirable behaviors. Furthermore, those subordinates from individualistic cultures are encouraged to improve their performance in team

projects by using those relation-based self-leadership strategies so as to build better work

relationships with their co-workers.

Limitation and future research

The present study is not without inherent limitation. The use of a student sample may

limit the generalizability of the results, despite the cultural appropriateness of the sample

used. Future researchers may consider using other population samples, such as work

employees from both Eastern and Western culture. Especially in Chinese organizational

setting, paternalistic leadership deeply rooted in Confucian tradition is the prevalent

leadership style in which the leaders have high level of power centralization and control

over subordinates and demand unquestionable obedience from subordinates (Farh and

Cheng, 2000; Redding, 1990). Because of the Chinese tradition of role compliance,

Chinese employees are more likely to depend on the guidance and authority of their

supervisors. Thus, compared with the Western workers, Chinese employees may take less

initiative to practice self-leadership strategies, especially those individual-centered

strategies helping self-leaders to enhance their perception of autonomy, and competent

self-view such as task-based natural rewards, individual-oriented evaluation of beliefs and

assumptions, visualizing successful performance, and positive self-talk. Furthermore,

such research on which self-leadership strategies are most useful for Chinese and

Australian employees to enhance their self-efficacy, job satisfaction and performance in

job settings has implications for cross-cultural leadership and employee development.

Thus, more future research is needed to investigate the relative importance of different

self-leadership strategies in predicting work outcomes across cultures.

It would also be of interest to examine whether the findings presented here could

be applied to other collectivistic cultures such as Latin American where social ties are

stressed (Oishi *et al*,, 1999) without a strong emphasis on academic achievement. Cross-

cultural differences in the use of self-leadership strategies are more likely to happen

between collectivists from Brazil or Columbia and individualists from U.S.A. or Australia.

Our study assumed that the Hong Kong subjects were collectivists, whereas the

Australian subjects were classified as individualists. Without measuring the cultural

differences of these two samples in terms of the individualism-collectivism orientation

(Singelis *et al*.,1995), it is possible that these young Hong Kong students may be open to

greater influence from Western culture and be more individualistic in their values, like the

Australian sample. However, we are not aware of any empirical research arguing for a

convergence of cultural values among young Hong Kong Chinese to Western

Individualism. While it is unlikely that these two samples are similar in terms of their

cultural value orientation, we nevertheless, suggest that future studies utilize specific

measures of individualism/collectivism in their research.

In conclusion, this study revealed some mixed results. Chinese students reported greater

use of self-reward, relation-based natural reward, individual-oriented and social-oriented evaluation of beliefs and assumption, whereas Australian students reported greater use of self-goal setting, and self-cueing. However, no cultural differences were found for self-punishment, positive self-talk, visualizing successful performance as well as task-based natural rewards. These findings may serve as a road map for educators to understand how their students from collectivist/individualistic culture lead themselves to reach their goals. More future research is needed for studying how students in various cultures practice self-leadership strategies and how these in turn influence their learning and academic achievement

CHAPTER SIX - STUDY FOUR

SELF-LEADERSHIP IN A CHINESE CONTEXT: WORK OUTCOMES AND THE MODERATING ROLE OF JOB AUTONOMY

Author: Jessie Ho[1], Paul L. Nesbit[1]

[1]*Macquarie Graduate School of Management, Macquarie University, Australia*

Statement of Contributions of Joint Authorship

Jessie Ho:　　　　(Candidate)

synthesized and summarized literature, provided conceptual overviews, writing of manuscript, designed research methodology, conducted data analysis, and preparation of tables.

Paul L. Nesbit:　　(Thesis Supervisor)

supervised and assisted with manuscript editing and co-author of manuscript.

Chapter Six

Linkage of Paper to Thesis Objective

Chapter 6 is a journal article, under review by *Group and Organization Management Journal,* which presents research examining the associations between self-leadership and work outcomes such as performance ratings, objective work performance and job satisfaction. As noted in Chapter 1, little research has been done to examine whether employees' practice of self-leadership result in higher job performance and job satisfaction in a Chinese context. Furthermore, the identification of boundary conditions of this relationship largely remains unexplored. While results of study one (Chapter 3) and study two (Chapter 4) provided evidence that the modified self-leadership questionnaire (MSLQ) is a reliable measurement scale which could be generalized to a Chinese context, the concurrent validity of this new measure associated with work outcomes needs to be examined.

Thus, the aim of this study is to explore the relationship between self-leadership strategies and work outcomes of job performance and job satisfaction and examine the extent to which job autonomy experienced by employees moderates the influence of self-leadership on job performance and job satisfaction.

Study Four: Self-leadership in a Chinese context: Work outcomes and the moderating role of job autonomy

Abstract

To investigate whether the theory of self-leadership could be applied in a non-Western context, this study examined the influence of self-leadership behaviors on supervisor performance rating, objective work performance and job satisfaction in Chinese organizations. Additionally, we examined whether job autonomy would strengthen the relationship between self-leadership behaviors and these work outcomes. We used a sample of 407 supervisor-subordinate dyads from a wide variety of organizations located in the People's Republic of China and Hong Kong. Results showed that subordinates' self-leadership behaviors are positively related to supervisor performance rating and job satisfaction, even when controlling for the personality trait of conscientiousness. However, self-leadership was not significantly related to objective job performance. In addition, job autonomy moderated the relationships between self-leadership behaviors and work outcomes of performance rating, objective work performance and job satisfaction. These findings suggested that the associations between self-leadership and work outcomes could be generalized to Chinese organizational settings.

INTRODUCTION

Today's employees are working in turbulent, complex business environments that are characterized by globalization, rapid technological advances, declining resources and increasing cost competitiveness (Conger & Kanungo, 1988; Gronn, 1999). In order to succeed in increasingly complex and turbulent markets, organizations often adopt decentralized, organic-type organizational structures (Conger & Kanungo, 1988), in which employees are required to take greater responsibility for their own job tasks and career development (London, Larsen, & Thisted, 1999; Sturges, Conway, & Liefooghe, 2010). Staff with high levels of capacity and skills in self-direction and self-influence should respond more successfully and effectively to the dynamic changes of organization structures and environments. Such self-direction capacity and skill is inherent in the construct of self-leadership which is defined as "a self-influence process through which people achieve the self-direction and self-motivation necessary to perform" (Neck & Houghton, 2006, p. 2). Self-leadership consists of three distinct but complimentary categories of strategies - behavior-focused strategies, natural reward strategies, and constructive thought pattern strategies - through which people control their own actions and thinking to reach personal and organizational goals (Manz & Neck, 2004; Manz & Sims, 2001; Prussia, Anderson, & Manz, 1998).

Despite the importance of employees' self-leadership strategies to the new organizational environment, most empirical research has been conducted mainly in the United States (Stewart, Courtright, & Manz, 2011; Neck & Houghton, 2006). Research on examining the relationship between self-leadership and work outcomes has not yet been conducted in a non-Western context, leaving open the question of whether the theory of self-leadership could be applied in an Asian organizational context.

With the globalization of the world economy, and the rapid development of the Southeast Asian economies, there are increasing numbers of multinational corporations (MNCs) establishing operations in non-western countries such as China. Indeed, MNCs have played an increasingly prominent role in China's economy and employ more than 24 million people (Blanchard, 2007). With increased international competition and corporate restructuring in multinational organizations, employees in China are becoming more exposed to Western management practices. Consequently, workers in China are increasingly likely to be required to take greater responsibility for their own job tasks and work behaviors. However, it is not clear whether employees' practice of self-leadership result in higher job performance and job satisfaction in a Chinese context where individuals are accustomed to centralized and paternalistic leadership (Farh & Cheng, 2000).

Paternalism is a common leadership style in Chinese societies that "combines strong discipline and authority with fatherly benevolence and moral integrity" (Farh & Chen, 2000, p.84). Sinha (1990) suggests that the coexistence between benevolence and authority is rooted in the traditional Chinese family structure. Like the father in a Chinese family, the superior in a company is expected to be nurturing, caring, dependable, and yet authoritative, demanding, and a disciplinarian. In paternalistic relations, subordinates reciprocate the leader's benevolent care and protection by showing loyalty, deference, and compliance. Given the paternalistic control of Chinese leaders and the compliant mindset of the subordinates in Chinese organizations, the practice of self-leadership which requires employee to be an independent self-leader without depending on the guidance of their supervisors, would appear to be less relevant for Chinese employees.

On the other hand, it can be argued that paternalistic controls in organizations may not be incongruent with employees' practice of self-leadership. As noted by Manz and Sims (1980), even in the most intensive external control situations, employees are able to exercise some degree of self-leadership. Thus Chinese workers may be able to exercise self-leadership skills while being loyal and deferent to the superior because they could incorporate the input and guidance of their leaders in their self-regulation efforts. For example, Chinese employees could set their own goals in consideration of their supervisors' opinions and expectation. Furthermore, Confucian ethics in Chinese tradition

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highly stress the importance of reciprocity in social relations. Thus the fatherly support, protection, and care provided by paternalistic managers may generate indebtedness on the part of subordinates (Farh, Liang, Chou, & Cheng, 2008). As a result, Chinese subordinates may feel obligated to reciprocate the care and protection of their supervisors by leading themselves more effectively to achieve organizational goals so as to lessen their leaders' burden in supervising their work progress.

The objective of the current study, therefore, is to examine whether self-leadership influences work outcomes within Chinese organizational settings. By so doing, our study generalizes self-leadership research beyond a Western context and advances understanding of how self-leadership strategies could be applied across cultural boundaries. Furthermore, given that self-leadership is a set of learned behaviors that are amenable to development (Manz, 1986), exploring these relationships has implications for human resources practitioners to improve organizational morale and effectiveness that could be achieved by developing employees' self-leadership skills in Chinese organizations.

This study also investigates the boundary conditions of self-leadership. Markham and Markham (1998) have questioned whether self-leadership is "a universally applicable theory that will work with all employees under all circumstances" (p.349) or a "contingency theory that best fits certain boundary conditions" (p.349). For example,

routine tasks with predictable workflows, allow management to install control systems that requires little individual discretion and minimal cognitive involvement on the part of the individual (Slocum & Sims, 1980). In contrast, autonomous and non-routine jobs such as marketing and sales require greater flexibility, and higher levels of cognitive involvement (Manz & Sims, 1980) on the part of the employee. These types of tasks place greater responsibilities on individuals and provides the occasion for workers to play an active role in their self-regulation (Manz, Mossholder, & Luthans, 1987). Under such conditions, it may be difficult for organizations to manage employees' behaviors using traditional managerial control such as job description, standard operating procedures and performance appraisal systems (Slocum & Sims, 1980). Consequently, work that gives employees higher degrees of autonomy may require higher level of self-leadership skills for job success (Manz & Sims, 1994; Manz & Neck, 2004). Problems may arise if employees who are without appropriate supervision and who lack self-leadership skills are required to manage their own performance in autonomous jobs. To date, very little empirical research has been done to examine job autonomy as a potential moderator to the relationship between self-leadership and work outcomes.

Some management theorists have also questioned whether self-leadership is a unique construct distinct from existing personality constructs. For example, Markham and Markham (1998, p.197-198) argued that "one of the major stumbling blocks of self-

leadership theory is its uniqueness when compared to more traditional views of similar psychological processes… it is possible that various aspects of self-leadership simply recast previous personality traits". Guzzo (1998) draws attention to the similarity of self-leadership and the personality dimension of conscientiousness. In addition, previous research has shown that self-leadership is significantly related to conscientiousness (Houghton, Bonham, Neck, & Singh, 2004; Furtner & Rauthmann, 2010), so there is a question of concept redundancy. Consequently, we believe that controlling for the impact of conscientiousness which has well-established relationships with the work outcomes of job performance and job satisfaction (Barrick & Mount, 1991; Judge, Heller, & Michael, 2002) is important as it provides a stringent test of the importance of the self-leadership construct. In the following section we develop specific hypotheses for our research based on a review of research and theory regarding the main effects of self-leadership on job performance and satisfaction as well as the role of job autonomy as a moderator of these relationships.

THEORY AND HYPOTHESES

Self-leadership and Work Outcomes

As previously noted, self-leadership is a self-influence process involving behavior-focused strategies, natural reward strategies, and constructive thought strategies which

individuals utilize to guide self-motivational effort to reach their desired goals (Anderson

& Prussia, 1997; Manz & Neck, 2004; Manz & Sims, 2001; Prussia et al., 1998).

Behavior-focused self-leadership is related to the set of self-influence strategies proposed

by early self-management scholars (Manz & Sims, 1980). These strategies operate within

the framework of Bandura's (1986) social learning theory, which argues that human

behavior is a function of interactive influences between the person, one's behavior and the

environment (Bandura, 1986). Thus individual behavior is influenced not only by the

external environmental factors, but also by the individual's self-regulation processes.

Based on the premise of social learning theory, Manz and Sims (1980) delineated various

"self-management" strategies such as self-goal setting, self-observation, self-reward, self-

punishment and self-cueing (Manz 1986; Manz & Neck, 2004) that are used by

individuals to manage their goal-striving behaviors.

Self-goal setting involves the process of setting challenging and specific goals. A

large body of research suggests that the process of setting challenging and specific goals

can significantly increase individual performance levels (Locke & Latham, 1990). Self-

observation involves gathering information related to when and why one engages in

specific behaviors (Mahoney & Arnkoff, 1978; Manz & Sims, 1980), which heightens an

individual's self-awareness in changing or eliminating unproductive behaviors. Since self-

observation also provides information for individuals to evaluate their success in reducing

the performance discrepancy from their self-set standards or goals (Manz & Sims, 1980; Manz, 1986), it also establishes the basis for the administration of self-reward and self-punishment. Self-reward consists of self-applying motivational rewards for goal achievement whereas self-punishment involves self-criticism leading to the elimination of undesirable behaviors. Self-cueing involves the activity of constructing environmental cues used for shaping desirable behaviors.

In short, behavior-focused strategies are designed to heighten one's progress in reducing performance deviations from existing standards and to enhance self-directed efforts in doing intrinsically unappealing but necessary tasks (Anderson & Prussia, 1997). A number of studies have shown that increased behavioral-focused self-leadership results in positive organizational outcomes such as reduced absenteeism (Frayne & Latham, 1987; Latham & Frayne, 1989), higher team effectiveness (Rousseau & Aubé, 2010) and increased organizational citizenship and decreased counterproductive work behavior (Jensen & Raver, 2012).

Enhancing progress towards goals is also likely to influence satisfaction with one's job (Diener, 1984). Increased behavior-focused self-leadership has been shown to result in greater job satisfaction (Uhl-Bien & Graen, 1998). Cohen, Ledford, and Spreitzer (1996) also found that Manz and Sims' (1987) self-management leader behaviors are positively associated with overall job satisfaction.

Despite the usefulness of behavioral-focused strategies in organizations, Manz (1986) argued that these self-management strategies provided an incomplete view of self-influence as they only addressed the reduction of performance discrepancies from external set standards. Manz (1986) also advocated a broader view of self-influence process that utilizes the motivational drive associated with perceptions of intrinsic value of work and self-set standards, as well as strategies related to the shaping of one's thought patterns to help improve individual performance. Consequently, Manz and colleagues (Manz & Sims, 2001; Houghton, Neck, & Manz, 2003) proposed two additional categories of self-influence strategies, namely "natural reward strategies" and "constructive thought strategies" to aid individuals to achieve greater personal effectiveness in goal achievement.

Natural reward strategies involve building more pleasant and enjoyable features into goal striving actions as well as shaping one's perceptions by focusing attention on the rewarding aspect rather than the unpleasant features of tasks (Manz & Neck, 2004; Manz & Sims, 2001). Ilgen and Hollenbeck (1991) argue that while most jobs involve some aspects that are non-routine, most employees have the opportunity to redesign their job to intrinsically enrich their work activities. For example, nurses could enjoy the mundane tasks (e.g. bathing patients) more by noticing how such tasks promote patient comfort and health (Gagné & Deci, 2005). Natural reward strategies align with the research of Deci

and Ryan (1985) who argue that the need for competence and self-determination are the primary mechanisms that drive intrinsic motivation toward goal achievement. Thus, self-leadership theory suggests that once self-leaders learn to structure their work or focus their attention on the inherent enjoyable features of their jobs, they are more motivated to perform well and feel more satisfied with their jobs (Manz & Neck, 2004). A number of research studies have shown that employees who take an active, self-directing approach to influence their work perceptions, or who create environmental changes, to highlight the intrinsically rewarding dimensions of their work tend to perform better than employees who focus only on the objective dimensions of the task (Crant, 2000; Fuller & Marler, 2009).

Constructive thought strategies focus on the formation of constructive thought patterns that can positively impact performance (Manz & Neck, 2004; Neck & Manz, 1992). Constructive thought strategies include evaluating beliefs and assumptions, the use of mental imagery and positive self-talk. Evaluating beliefs and assumptions aims to help one recognize one's dysfunctional thinking and destructive beliefs, and to learn to challenge these beliefs and replace them with more constructive thoughts. Self-talk incorporates optimistic self-dialogues associated with these more constructive thoughts and support intended actions. The strategy of using mental imagery refers to imagining successful performance of the task prior to actual performance efforts (Neck & Manz,

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1992, 1996) in order to guide actions and support motivation.

A number of researchers have also argued that individuals who utilize constructive-thought strategies to eliminate dysfunctional, negative thoughts are more likely to experience job satisfaction (Houghton & Jinkerson, 2007). For example, Judge and Locke (1993) argued that dysfunctional thought processes, such as overgeneralization (e.g., "If I do a bad thing, it means I am a bad person"), and perfectionism and dependence on approval of others, make individuals more vulnerable to unhappiness and that dysfunctional attitudes oriented toward the job negatively influence job satisfaction. Wanberg and Kammeyer-Mueller (2000) and Neck and Manz (1996) also reported that employees who could eliminate negative thought felt more satisfied with their jobs.

We also suggest that employees who have a high tendency for self-leadership are more likely to develop high quality exchange relationships with their supervisors, which in turn, results in receiving higher subjective performance ratings. According to leader-member exchange (LMX) theory (Graen & Cashman, 1975), supervisors treat subordinates in a differentiated manner developing high quality exchange relationships with a few key employees (high LMX) but not others (low LMX). Given that employees' competence, initiative, and motivation are important determinants of the quality of these leader-subordinate relationships (Dockery & Steiner, 1990; Liden, Wayne, & Stilwell, 1993), we suggest that the self-leadership behaviors of employees may become an

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attractive incentive for the supervisors to select them as high LMX members. Specifically, supervisors come to rely on self-leading subordinates to excel and successfully complete important tasks without the need to close monitoring of performance and work progress.

In a high-quality LMX relationship, supervisors offer subordinates more support, resources and interactions, which are not offered to low LMX employees. The positive contributions offered by supervisors may create obligations for these subordinates to reciprocate with greater expenditures of time and effort (Chen, Lam, & Zhong, 2007), leading them to make greater contributions to the work unit's functioning than others. Since employees high in self-leadership may make greater contribution to the work group beyond mere task performance, they will be given high ratings on dimensions such as 'dependability', "initiative" and "quality of work". Furthermore, supervisors are likely to have positive feelings about employees who are goal-oriented, dependable and show initiative (Duarte, Goodson, & Klich, 1993).

In summary, considerable research exists to suggest that engaging in behavior-focused, natural reward, and constructive thought strategies, should be positively related to job performance and job satisfaction. We expect, therefore, that self-leadership has positive main effects on both objective performance measure and job satisfaction. Furthermore, we expect that self-leaders will receive higher performance assessments from their supervisors. Thus, the following hypotheses will be tested.

Hypothesis 1: Self-leadership will be positively correlated with supervisor

performance rating.

Hypothesis 2: Self-leadership will be positively correlated with objective work

performance.

Hypothesis 3: Self-leadership will be positively correlated with job satisfaction.

The Moderating Role of Job Autonomy

Although we hypothesized that self-leadership is positively associated with

supervisor performance rating, objective work performance and job satisfaction, these

relationships are likely moderated by the employee perceptions of their job autonomy.

Mischel's (1977) situational strength theory suggests that low-autonomy jobs create

considerable constraints on employees as they "induce uniform expectancies regarding

the most appropriate response pattern, provide adequate incentives for the performance of

that response pattern and require skills that everyone has to the same extent" (p.347). In

low-autonomy job situations, individuals high in self-leadership have little room to set a

specific and challenging goal, apply self-reward for goal accomplishment and to redesign

their work tasks. Consequently, self-leading employees in this situation are less likely to

experience the sense of self-determination and competence that drives intrinsic

motivation (Deci & Ryan, 1985) and so are less motivated to excel in their jobs and feel

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less satisfied with their jobs. Moreover, self-leading employees have less opportunity to impress their supervisors by demonstrating their self-motivated behaviors. As noted earlier, employees' initiative and motivation are important determinants of the quality of leader-subordinate relationship (Dockery & Steiner, 1990). Thus, self-leading employees with low job autonomy are less likely to develop high quality exchange relationship with their supervisors and are less likely to differentially receive higher performance ratings. Furthermore, in situations of low autonomy, employees low in self-leadership could still perform as well as those high in self-leadership as they may successfully complete their tasks by relying on the work instructions given by their leaders or by following the standard procedures of the company. They may also find their jobs satisfying because of their success in meeting job requirements. Thus, work situations that provide only for low levels of job autonomy attenuate the positive effects of self-leadership on job performance and job satisfaction.

In contrast, in high-autonomy jobs, individuals have substantial freedom to determine what behaviors to undertake. Greater decision latitude in high-autonomy jobs offers self-leading individuals more opportunities and freedom to express their self-leadership orientation such as choosing their own goals or building in more enjoyable features into their tasks. In such situations, employees who lack self-leadership skills are less likely to perform well without sufficient supervisions, leading to lower job

performance and lower job satisfaction. Thus, individual differences in self-leadership

characteristics are more likely to influence individuals' job satisfaction and work

performance under high job autonomy. We therefore expect a stronger relationship

between self-leadership and performance/job satisfaction for individuals who reported

greater autonomy than those who experienced low level of job autonomy. Accordingly,

we hypothesize the following:

Hypothesis 4a: Job autonomy will moderate the relationship between self-leadership

behaviors and supervisor performance rating, such that the relationship will be

stronger under high job autonomy than under low job autonomy.

Hypothesis 4b: Job autonomy will moderate the relationship between self-leadership

behaviors and objective work performance, such that the relationship will be

stronger under high job autonomy than under low job autonomy.

Hypothesis 4c: Job autonomy will moderate the relationship between self-leadership

and job satisfaction, such that the relationship will be stronger under high job

autonomy than under low job autonomy.

METHOD

Sample and Data Collection

Using a modified snowball approach (Bryman & Bell, 2007), we recruited participants from a wide variety of organizations located in Hong Kong and mainland China in four different industries (Engineering, Public Transportation, Insurance and Manufacturing). Using existing contacts, a number of organizations in Hong Kong were approached and asked if they would be willing to participate in the study. These contacts were also asked to nominate contacts in other organization who might be interested in the research. All participants were ethnic Chinese.

Once we had arranged agreement with the organization for participation in the study, we negotiated with the human resource managers at each company and the Chairman of the Institution of Engineers to elicit their help in identifying and recruiting supervisor-subordinate dyads in their organizations. Those employees who were identified as subordinates received a questionnaire package containing a cover letter clearly explaining the purpose of the research and stating that participation was voluntary and that results were confidential. Each supervisor was matched with only one subordinate. When multiple subordinates reported to the same supervisor, we chose one subordinate randomly. Subordinates received a questionnaire package containing questions regarding

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self-leadership behaviors, job autonomy, and job satisfaction. The immediate supervisors

of these respondents also received additional questionnaire package containing questions

regarding the general job performance of the subordinate. Additionally, supervisor

questionnaires that were distributed to the respondents from insurance industries (see

details about survey respondents below) included one more question seeking objective

sales performance of their subordinates. Thus the study of Hypothesis 2, examining the

relationship between self-leadership behaviors and objective work performance, is limited

to a sub-group of the sample, namely the insurance sales agents. All completed

questionnaires were returned directly to the researchers through a self-addressed, stamped

envelope.

In total, 560 matched surveys were distributed to employees and supervisors. We

received 412 completed and usable matching pairs, which represented an overall response

rate of 73%. One group of respondents consisted of 182 insurance sales agents from five

insurance companies in Hong Kong, although we received objective sales performance

data from only 153 agents. Another group consisted of 80 engineers from different

organizations who were members of the Institution of Engineers in Hong Kong. A third

group of respondents consisted of 61 employees from one public transportation company

in Hong Kong. A fourth group consisted of 89 workers from three manufacturing firms in

mainland China. Deletion of missing data (five forms were incomplete) reduced the final

usable sample to 407. Our final sample therefore included employees from a broad cross-section of jobs, including technicians, engineers, production foremen, sales and marketing personnel, assemble line supervisors, quality control inspectors, service representatives, human resource personnel, middle to senior managers, accountants, secretaries, estate officers, clerical clerks, track workers and mechanic operators. For the whole sample, 62% of the employees were male, the average age range of employee respondents was 26 – 35 years and the average job tenure was 4.7 years (SD = 6.09).

Measures

In order to use pre-validated measures, the questionnaire items of the following measures, other than objective work performance, were translated into Chinese using Brislin's (1980) translation/back-translation procedure. Survey items were translated into Chinese by the first author who is bilingual in Chinese and English. Next, we obtained a back-translation from another bilingual academic. Finally, another academic examined the original version in English and the back-translated English version and found no back-translation discrepancies.

Self-leadership

In this study, self-leadership was assessed using the modified Self-leadership Questionnaire (MSLQ) developed by Ho and Nesbit (2009). The MSLQ consists of 38

items describing various behaviors associated with self-leadership and participants use a

5-point Likert-type scale (1 = not all accurate; 2 = somewhat accurate; 3 = a little

accurate; 4 = mostly accurate; 5 = completely accurate) to indicate how accurate each

behavior describes them. The dimension of behavior-focused strategy consists of five

subscales which include self-goal setting (4 items, e.g., "I consciously have goals in mind

for my work efforts"; $\alpha = .79$), task and relation-based self-observation (4 items, e.g.," I

usually examine how well I'm doing at work"; $\alpha = .70$), self-reward (3 items, e.g., "When

I have successfully completed a task, I often reward myself with something I like"; α

$= .89$), self-punishment (4 items, e.g., "I feel guilty when I perform a task poorly", α

$= .80$), and self-cueing (2 items, e.g., "I use written notes to remind myself of what I need

to accomplish"; $\alpha = .81$). Natural reward strategy involves two subscales: the first relates

to Task-based Natural Reward (4 items, e.g., "I think that the enjoyment gained from

work is more important than external rewards"; $\alpha = .76$) and the second subscale relates

to Relation-based Natural Reward (3 items, e.g., "I pay attention to the enjoyment I gain

from working in harmony with my colleagues /team members"; $\alpha = .68$). Constructive

thought strategy includes four subscales which are: Self-talk (3 items, e.g., "When I'm in

difficult situations I will sometimes talk to myself (out load or in my head) to help me get

through it"; $\alpha = .84$); Individual-oriented Evaluation of Beliefs and Assumptions (5 items,

e.g., "I try to evaluate the consequences of my negative thinking"; $\alpha = .79$); Social-

oriented Evaluation of Beliefs and Assumptions (2 items, e.g., "I examine whether my

thinking can fit in with the opinions of my colleagues and team members"; $\alpha = .61$); and

Visualizing Successful Performance (3 items, e.g., "I visualize myself successfully

performing a task before I do it"; $\alpha = .70$).

Job autonomy

Job autonomy was assessed using the nine-item job autonomy sub-scale from

Morgeson and Humphrey's (2006) work design questionnaire. A sample item is "the job

allows me to make my own decisions about how to schedule my work." Responses were

given on a 6-point response scale where 1 = *strongly disagree* and 6 = *strongly agree*. The

alpha coefficient was .94.

Job satisfaction

Four items developed by Manz (1981) were used to measure job satisfaction. A

sample item is "my work gives me a sense of satisfaction". Participants responded using a

response scale ranging from 1 (strongly disagree) to 6 (strongly agree). The reliability

was .90.

Supervisors' performance rating

Six items developed by Goodale and Burke (1975) were used to measure five

performance dimensions related to organizing and planning, reliability, adaptability,

productivity, and quality of work. A sample item is "this subordinate produces a quantity

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of work that meets the established standards". Furthermore, one self-developed item was

used to measure the dimension of initiative, "This subordinate originates action without

constant supervision with willingness to accept extra assignments". The supervisor was

asked to rate their subordinates on each of these six performance dimensions on a scale

from 1 (poor performance) to 4 (average performance) to 7 (excellent). The alpha

coefficient was .92.

Objective work performance

Objective work performance was measured in terms of the annual premium for

insurance policies sold from March to May 2010. The annual premium is the amount of

money a customer pays for insurance coverage of one year. Every insurance organization

in Hong Kong collects data on this measure, which is used as the basis for calculating

sales revenue. Hence, annual premium is a standard objective performance data used by

each of the five insurance companies involved in this study. All of these insurance

companies are similar in size, and also have similar insurance products, product variety,

organization structures and policies, as well as having the same sales territory.

Control Variables

Organizational tenure (measured in years), gender, educational level, and age were

included as control variables in our analyses. Previous research has shown these variables

to be related to the outcome variables of work performance and job satisfaction (e.g. Hom & Griffeth, 1995; Spector, 1997; Sturman, 2003). Since our respondents worked in four different industries in Hong Kong and mainland China, industry categories and location were also considered as control variables. Manufacturing, Insurance, and Public Transportation were dummy variables, with Engineering as the comparison category. Since all respondents from the manufacturing industry only worked in mainland China, a dummy variable created for location (0 = Hong Kong; 1 = China) is exactly the same as that of manufacturing industry (0 = other industries in Hong Kong; 1 − Manufacturing industry in China). To avoid such redundancy, location was omitted as control variables in our study.

Conscientiousness

We assessed conscientiousness using the subscale within the Big Five Inventory (BFI; John, Donahue, & Kentle, 1991). This subscale consists of nine items. A sample item is "I make plans and follows through with them". Responses to each item were anchored by a 6-point scale ranging from 1 = *strongly disagree* to 6 = *strongly agree*. The alpha coefficient was .81.

Results

Construct validity

Prior to testing the hypotheses, we conducted a series of confirmatory factor analyses to examine the construct validity of self-leadership and discriminant validity of our measures. Prior studies (Ho & Nesbit, 2009; Ho, Nesbit, Jepsen, & Demirian, 2012) have provided empirical support for the 11-factor measurement model of self-leadership. Results of our confirmatory factor analysis showed that 11-factor measurement model yielded an acceptable model fit (χ^2 (472) = 1054, p < .01; CFI = .92; IFI = .92; SRMR = .05; RMSEA = .05). We proceeded in our analysis using a composite self-leadership score, which was calculated by averaging the mean scores of each of these eleven factors.

In order to examine the distinctiveness of the study variables, we conducted CFA to examine the five key variables in our model, namely self-leadership, job autonomy, job satisfaction, conscientiousness and performance ratings. To reduce the number of parameters in the structural equation modeling, the item parceling method recommended by Bogozzi and Edwards (1998) was used on the variable of job autonomy as it consisted of more than seven items. Both job autonomy and conscientiousness were modeled using three parcels, with items assigned to each parcel randomly. Eleven parcels were also created for self-leadership by summing and averaging the items within each subscale to

create eleven composite indicators. Next, the five-factor model with the items or parcels

assigned to the five corresponding variables was used as the baseline model. Five

alternative models were examined against the baseline five-factor model. As shown in

Table 10, this baseline five-factor model fit the data reasonably well (χ^2 (289) = 840, CFI

= .92; GFI = .88; RMSEA = .07; SRMR = .07), whereas the other alternative models all

exhibited significantly worse fit than the baseline model. These results justified the

examination of self-leadership, conscientiousness, job autonomy, job satisfaction and job

performance as distinct constructs.

Descriptive Statistics

Table 11 presents means, standard deviations, and zero-order Pearson correlations

among all variables in this study. As expected, self-leadership was positively and

significantly related to the outcomes variables of supervisor performance rating (r = .21, p

< .01), objective work measure (r = .20, p < .05) and job satisfaction (r = .29, p < .01).

Conscientiousness was also positively and significantly associated with self-leadership (r

= .29, p < .01), as well as supervisor performance rating (r = .21, p < .01) and job

satisfaction (r = .23, p < .01).

Tests of Hypotheses

We used hierarchical regression analysis (HRA), to test whether self-leadership is

positively related to supervisor performance rating (H1), objective work performance (H2)

and job satisfaction (H3) and whether job autonomy would moderate these relationships

(H4a, H4b, H4c). Following the method outlined by Aiken and West (1991), we first

centered the self-leadership scores and job autonomy scores around their respective

means. Next, we calculated interaction scores by multiplying the mean

Table 10. Comparison of Measurement Models for Study Variables

Model	Description	χ^2	df	$\triangle\chi^2$	CFI	GFI	SRMR	RMSEA
The baseline five-factor model	Subordinates' survey: Self-leadership, conscientiousness, job autonomy, job satisfaction. Supervisors' survey: Subordinates' performance rating.	840	289		.92	.88	.07	.07
Model 1 – Four-factors	Self-leadership and conscientiousness were combined as one factor	1241	293	401**	.84	.78	.08	.09
Model 2 – Four factors	Self-leadership and job autonomy were combined into one factor	1811	293	971**	.74	.73	.10	.11
Model 3 – Four factors	Performance ratings and job satisfaction were combined into one factor	2052	293	1212**	.70	.68	.15	.12
Model 4 – Two factors	Self-leadership, conscientiousness and job autonomy combined as one factor and performance ratings and job satisfaction as another	3354	298	2514**	.47	.56	.17	.16
Model 5 – On factor	All parcels and items were loaded on a single factor	4075	299	3235**	.34	.47	.16	.17

Note. CFI = comparative fix index; GFI = goodness of fit index; SRMR = standardized root mean squared residual ; RMSEA = root mean square error of appromimation.

**p < .01, two-tailed.

Table 11. Means, Standard Deviations, Correlations and Reliabilities

Variable	Means	SD.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Gender [a]	.39	.49	-													
2. Age [b]	2.41	1.03	-.12*	-												
3. Tenure	4.70	6.09	-.21**	.59**	-											
4. Education [c]	3.51	1.66	-.01	-.17**	-.20**	-										
5. Engineering Industry [d]	.20	.40	-.19**	-.02	.16**	.41**	-									
6. Manufacturing Industry [d]	.21	.41	.02	-.15**	-.02	-.41**	-.26**	-								
7. Insurance Industry [d]	.44	.50	.22**	-.06	-.30**	.13**	-.44**	-.46**	-							
8. Transportation Industry [d]	.15	.36	-.11*	.27**	.26**	-.18**	-.21**	-.22**	-.37**	-						
9. Conscientiousness	4.15	.66	-.07	.15**	.09	-.12*	-.14**	.42**	-.32**	.12*	(.81)					
10. Self-leadership	3.47	.47	.04	-.05	-.04	.15**	-.09	.03	.07	-.04	.29**	(.90)				
11. Job autonomy	4.40	.90	.05	-.05	-.11*	.12*	-.20**	-.14**	.47**	-.26**	.05	.30**	(.94)			
12. Supervisor performance rating	4.49	1.07	.05	-.02	.06	.17**	.25**	.11*	-.19**	-.13**	.21**	.21**	.08	(.92)		
13. Objective performance measure [e]	54481	91690	-.04	.04	.14	-.03	-	-	-	-	.06	.20*	.28**	.26**	-	
14. Job satisfaction	4.38	.91	-.05	.11*	.07	-.07	-.13**	-.05	.13*	.02	.23**	.29**	.51**	.16**	.29**	(.90)

$N = 407$. Reliability estimates in parentheses. * $p<.05$; ** $p< .1$

[a] Gender was coded "0" for male and "1" for female; [b] Age was coded 1 - "18-25" to 5 - "56 or above".

[c] Education was coded as follows: "Junior high school or below" – 1; "senior high school" – 2; "vocational or technical college" – 3; "associate degree" – 4; "undergraduate

degree" – 5; "graduate degree or above" – 6.

[d] Engineering, Manufacturing, Insurance, and Transportation industry are dummy variables. For each dummy variable, the name indicates the type of industry coded 1 (e.g.

for the Insurance industry, the Insurance industry condition was 1 and the other three industries were 0).

[e] Data collection for the objective performance measure was only available for the sub-sample of this study which consisted of 153 insurance sample agent in Hong Kong.

Thus, the sample size for all correlations between objective performance measure and other variables is 153 rather than 407 (whole sample size).

centered self-leadership scores and job autonomy scores. The centered variables were

used in all analyses in order to reduce multicollinearity between the predictor variables

and their associated interaction terms. As shown in Table 12, separate analyses were

conducted on each of the three dependent variables and each HRA consisted of three

steps. The control variables were entered in the first step. The centered independent

variable of self-leadership and job autonomy was entered in the second step, and it was in

this step that we tested Hypotheses 1, 2 and 3. The centered interaction terms were

entered in the third step. Table 12 (step 2) shows that self-leadership was positively and

significantly related to supervisor performance ratings (β =.13, $p < .05$), and job

satisfaction (β =.09, $p < .05$), but not related significantly to objective job performance

(β =.12, n.s.). Thus, hypotheses 1 and 3 were supported but hypothesis 2 was not

supported. Step 3 in Table 3 displays the results for the self-leadership*job autonomy

interactions and shows that the interaction was significantly related to supervisor

performance ratings (β =.08, $p < .05$), objective work performance (β =.17, $p < .05$),

and job satisfaction (β =.08, $p < .05$).

To determine whether the forms of the interactions matched those suggested by

Hypotheses 4a, 4b, and 4c, we needed to graphically illustrate the interactions and test the

simple slopes for respondents with high job autonomy (one standard deviations above the

mean) and respondents with low job autonomy (one standard deviation below the mean)

(Aiken & West, 1991). In support of hypothesis 4a, we found that self-leadership was

more positively related to supervisor performance ratings under high job autonomy

(simple slope test: β =.47, $p < 0.01$) than under low job autonomy

Table 12. Summary of Hierarchical Multiple Regression Analyses

Steps and Variables	Supervisor Performance Rating (N = 407)			Objective Performance Measure (N = 153)[a]			Job Satisfaction (N = 407)		
	1	2	3	1	2	3	1	2	3
1. Control variables									
Gender	.12*	.12*	.12*	-.07	-.02	-.03	-.06	-.04	-.04
Age	-.02	.00	.01	-.05	.00	.00	-.02	.03	.04
Tenure	.09	.06	.06	.17	.11	.09	.09	.02	.01
Education	.15**	.12*	.12*	-.01	-.04	-.02	-.08	-.15**	-.15**
Manufacturing Industry[b]	-.13	-.14	-.14	-	-	-	-.11	-.13	-.13
Transportation Industry [b]	-.28**	-.28**	-.28**	-	-	-	.01	.04	.04
Insurance Industry [b]	-.30**	-.39**	-.40**	-	-	-	.23**	-.07	-.08
Conscientiousness	.22**	.15*	.14*	.07	-.04	-.03	.33**	.18**	.17**
2. Main effects									
Self-leadership		.13*	.13*		.12	.04		.09*	.09*
Job autonomy		.10	.11		.23*	.26**		.52**	.52**
3. Interaction:									
Self-leadership x Job autonomy			.08*			.17*			.08*
R^2	.16**	.19**	.21**	.03	.10*	.13*	.12**	.34**	.36**
$\triangle$ R^2		.03**	.02*		.07**	.03*		.22**	.02*

Note: The coefficients are standardized *ß* weights.   *p <.05; ** p < .01

[a] Data collection for the objective performance measure was only available for the sub-sample of this study which consisted of 153

insurance sample agent in Hong Kong. Thus, the sample size is 153 rather than 407 (whole sample size).

[b] Manufacturing, Insurance, and Transportation industry are dummy variables with Engineering the omitted category which is the comparison   category.

(simple slope test: β =.13, n.s.) Furthermore, in support of hypothesis 4b, we found that

self-leadership was more positively related to objective work performance under high job

autonomy (simple slope test: β =.18, $p < 0.05$) than under low job autonomy (simple

slope test: β =.03, n.s.). In the same vein, and in line with Hypothesis 4c, simple slope

analysis indicated that self-leadership related more strongly to job satisfaction with

individuals with high job autonomy (β =.32, $p < 0.01$) than for individuals with low job

autonomy (β =.03, n.s.). Figure 1, 2, and 3 graphically depicts these findings.

Figure 1. Effect of interaction between self-leadership and job autonomy on supervisor performance rating
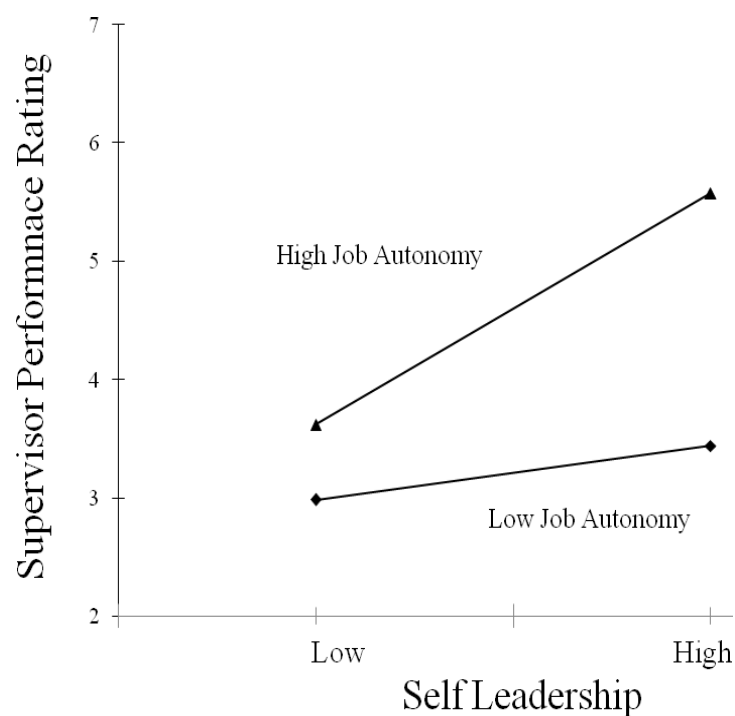
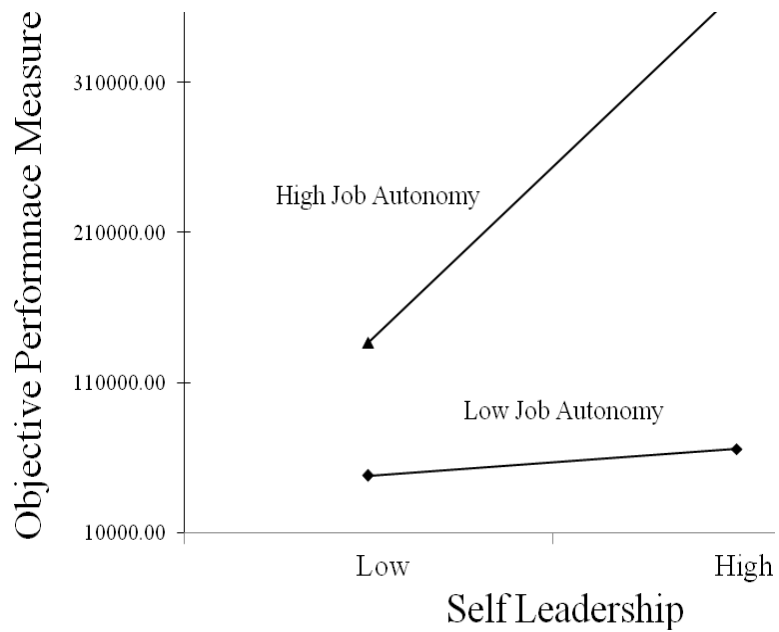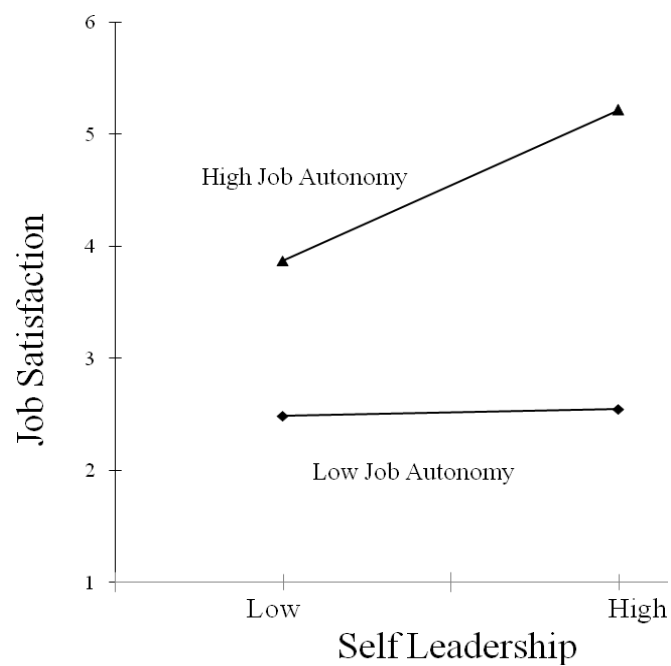**Figure 2. Effect of interaction between self-leadership and job autonomy on objective performance measure**

Figure 3. Effect of interaction between self-leadership and job autonomy on job satisfaction

Discussion

As noted earlier, self-leadership research has been conducted mostly in Western cultures, and primarily in the United States. Despite the growing academic interest in exploring the influence of culture on individuals' use of self-leadership strategy, empirical research on how self-leadership relates to employee outcomes in non-Western contexts has lagged behind. In this study, we extend research on self-leadership to the Chinese organizational context. Our findings supported five of the six hypotheses and suggested several conclusions. First, as hypothesized, the present findings showed that self-leadership behaviors were positively related to supervisor ratings and job satisfaction even after controlling for the effects of conscientiousness. However, self-leadership was not significantly related to objective job performance. Second, the moderating effects of job autonomy on the relationship between self-leadership and three work outcomes of supervisor performance rating, objective job performance and job satisfaction were supported.

Theoretical implications

The results of this study supported the positive influence of self-leadership above and beyond the influence of conscientiousness in a Chinese context. Employees who have a greater tendency to engage in self-leadership strategies receive higher performance

ratings from supervisors and are more satisfied with their jobs. To date, the linkages

between self-leadership behaviors and work outcomes have been explored mainly in the

United States. Our results provide evidence that such linkages can be generalized to

Chinese organization settings where existing social norms and role expectations for

employee behaviors are typically different from American organizations.

The non-significant main-effect between self-leadership and objective sales

performance was contrary to our expectations expressed in hypothesis 2. In the study,

objective work performance was measured in terms of the annual premium of insurance

policy, a common outcome measure among insurance sales agents. As noted by Campbell

(1990), performance constructs can vary in terms of their control by the individual. Thus,

while sales performance is an objective measure, it may not have necessarily reflected as

high a degree of control by sales agents as we would have desired. This performance

measure may also be affected by the impact of external factors (e.g. declining economic

growth) which are beyond the sales agents' control. In other words, performance results

may be more differentially impacted by external factors than sales agents' self-leadership.

In contrast, the subjective performance-rating measure assessed broader aspects of

performance that employees may be able to control, such as initiative, dependability, and

quality of work that are highly valued by supervisors (Arvey & Murphy, 1998). Hence, as

we found, self-leadership behaviors would be more strongly associated with subjective

performance ratings than with objective job performance in this study.

While, we have suggested that sales agents' objective performance measures may not have been wholly under the control of agents, some degree of control would be possible. To the extent that control over sales is evident in the degree of perceived job autonomy, sales agents were able to exercise their self-leadership skills in their work role and influence objective performance. Specifically, when the level of job autonomy was high, self-leadership was related to higher objective sales performance.

We also examined the moderating role of job autonomy in the relationships between self-leadership with supervisory performance ratings and job satisfaction. We found that the positive relationships between self-leadership and performance ratings and job satisfaction were strongest for those employees reporting high level of job autonomy. A possible explanation proposed for these findings can be found in situational strength theory (Mischel, 1977). Low-autonomy jobs are strong situations with considerable constraints, which inhibit employees from utilizing their self-leadership skills. These situations thereby reduce level of self-motivation for goal achievement and job satisfaction for those high on self-leadership behaviors. On the other hand, high-autonomy jobs provide employees more opportunities to express their self-leadership tendency and therefore increase their job satisfaction and self-motivation for upholding good performance.

Another contribution of this research to the self-leadership literature relates to demonstrating that self-leadership is a distinct construct, explaining unique variance in job performance measures and job satisfaction, beyond the personality trait of conscientiousness. This conclusion suggests that the practice of self-leadership strategies operates apart from the influence of personality.

Managerial Implications

Our findings that self-leadership contributes to performance and job satisfaction also have important practical implications. As noted in the introduction, increasingly complex and dynamic work environments are often associated with the need for greater employee responsibility and autonomy in the way they carry out job tasks. Self-leadership may be an important attribute to consider in the skill-set of contemporary employees. As noted earlier, self-leadership is viewed as skilled behavior that are amenable to change (Manz, 1986). Thus, employees' self-leadership skills could be enhanced through the practice of training interventions.

Also, in order to improve the productivity of individuals who have self-leadership capabilities, supervisors should consider giving these employees more discretion on determining their work schedule and work methods. By doing so, self-leading individuals would have more freedom to express their self-motivation tendency in pursuit of goal attainment.

Limitations and Future Research Directions

This study has a number of limitations. First, the use of cross-sectional data means that cause and effect relationships cannot be inferred from the findings reported here. The results are vulnerable to opposite or bi-directional relationships as we cannot rule out the possibility that poor performance and job satisfaction may lead to a reduction in self-leadership behaviors. An argument against such reversed causality is that existing longitudinal research has generally demonstrated that training in self-management and constructive thought self-leadership strategies are effective for improving aspects of job performance, such as attendance (Frayne & Latham, 1987; Latham & Frayne, 1989), sales performance (Frayne & Geringer, 2000), and mental performance, and job satisfaction (Neck & Manz, 1996). Nevertheless, future research should adopt a longitudinal design to affirm the causal relationship.

A second limitation concerns relates to common method variance (CMV) because this study involved the collection of self-reported ratings of self-leadership behaviors and job satisfaction at the same point in time from the same respondent. We used the marker variable approach (Lindell & Whitney, 2001) to determine the impact of common method variance. Information reported by our respondents on a theoretically unrelated construct (i.e., external locus of control; Spector, 1988) was used as a marker variable. One can conclude that common method variance is not an issue in the study if the significant zero-

order correlations for the variables remain statistically significant even when the marker variable is partialled out. Based on our analyses, there were no statistically significant changes in the zero-order correlations of self-leadership with job satisfaction even after partialing out the marker variable from the correlation matrix. As such, we conclude that CMV is not a problem for our study. Nevertheless, future studies should strive to minimize potential rating biases by collecting data by means of two separate questionnaires at different points in time.

Third, in this study, we propose that self-leadership may help subordinates to develop high quality leader-member exchange relationships (LMX) with their supervisors, which in turn, results in higher performance ratings. However, the construct of LMX was not measured in this study. We call for more research to investigate whether leader-member exchange relationship mediates the relationship between self-leadership and performance ratings.

Fourth, we did not consider the effects of leadership styles of supervisors. Supervisors with different leadership styles may encourage employees' self-leadership behaviors differently as well as indirectly impact emotional reactions (McColl-Kennedy & Anderson, 2002), which can affect employees' work performance. Thus future research could investigate how individual differences in supervisors' leadership style influence the outcomes of employees' self-leadership behaviors.

Fifth, in this study, we only investigated the association between self-leadership and three outcomes variables of job satisfaction, performance rating and objective sales performance. Although these outcomes are important, future researchers should consider incorporating other outcome variables into their studies such as organization commitment, turnover intention, and creative work performance. Self-leadership theorists propose that individuals who influence themselves towards their self-set goals often develop a sense of ownership over their tasks and work processes (Manz & Sims, 2001). As a result, self-leading employees may demonstrate higher levels of commitment to their tasks and organizations and have less intention to leave the organizations than individuals who are not engaging in self-leadership. Likewise, individuals practicing self-leadership may experience greater feelings of control and autonomy, which is often identified as an essential component of individual creativity (DiLiello & Houghton, 2006).

A final limitation is that we measured only a single personality trait - conscientiousness - in this study. Due to the consideration of questionnaire length and time constraint in data collection, we were unable to measure the complete set of Big Five personality dimensions (agreeableness, conscientiousness, emotional stability, extraversion, and openness to experience). Additional work should be done to explore the incremental validity of self-leadership by examining whether self-leadership has unique contribution in predicting work outcomes beyond all the dimensions of Big Five

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personality.

Conclusion

In summary, we believe that our study makes important contributions to the self-leadership literature. This study found that self-leadership is positively related to supervisor performance rating, and job satisfaction in a Chinese cultural context. Thus, our study generalizes self-leadership research beyond a Western context and advances understanding of how self-leadership strategies could be applied across cultural boundaries. Furthermore, our findings also suggest that the effectiveness of employee's self-leadership behaviors depends on how much autonomy employees have on their jobs. In order to encourage self-leading individuals to persist in improving their work performance, organizations and supervisors should consider taking steps to increase employees' discretion on determining work schedule and work methods. Organizations may also seek to use training interventions of self-leadership skills to enhance job performance and job satisfaction of their workforce.

. **Chapter 7**

Conclusions

7.1. Overview

There are four sections in this chapter. The first section provides the background of the research including a brief review of the major research gaps in self-leadership literature. The second section provides a summary of the key findings of this research. The third section highlights the contributions and managerial implication of this thesis and the fourth section addresses the limitations of this research and provides suggestions for further studies.

7.2. Background and Objective of This Study

In today's highly competitive global business environment, multinational organizations need to aggressively compete for new markets, products, and human talents, and adopt decentralized, organic-type organizational structures in response to the dynamic changes within the turbulent business markets (Conger & Kanungo, 1988; Gronn, 1999). With the globalization of the world economy and the rapid rise of Asian economies in the past two decades, more and more multinational corporations have established operations in non-western countries (Blanchard, 2007). Consequently, employees working in

multinational corporations with diverse cultural backgrounds are increasingly required to take greater responsibility for their own job tasks and work behaviors. This business trend has drawn researchers' attention on the application of self-leadership concept beyond the Western contexts. However, as noted in previous chapters, while the conceptualization of self-leadership has been developed largely within the Western context of the USA, there has been a paucity of research examining whether self-leadership theory could be generalized to other cultural contexts.

In addition, due to the lack of a reliable self-leadership scale which is applicable across Eastern and Western cultures, little empirical research has been done to identify cross-cultural differences in self-leadership behaviors and to examine how self-leadership relates to employees outcomes in Asian contexts. Moreover, the opening of China to Western businesses and influences gives rise to the important question of whether employees' practice of self-leadership result in higher work productivity and satisfaction in a Chinese context where individuals are accustomed to centralized and paternalistic leadership (Farh & Cheng, 2000). Consequently, there have been calls for more empirical research to examine the cultural issue of self-leadership (Neck & Houghton, 2006). The present research was designed to address this important research area.

In summary, the thesis is written in the format of thesis-by-publication. It presents a series of journal articles and conference papers that aims to:

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(1) develop a reliable self-leadership scale to enhance the generalizability of self-

   leadership measurement to the Chinese population;

(2) examine the psychometric properties and measurement invariance of the scale to

   determine whether it is applicable across Eastern and Western cultures;

(3) explore how culture shapes individuals' use of self-leadership strategies; and

(4) investigate the relationship of self-leadership with work performance and job

   satisfaction in Chinese organizational settings and determines whether these

   relationships could be strengthened by the moderator of job autonomy.

7.3. Summary of Major Research Findings

Chapter 3 is a published journal article (Ho & Nesbit, 2009), which presents research

related to the modification of an existing self-leadership scale (RSLQ) in order to make it

more applicable to a Chinese context. Modification work included refining the items of

four existing dimensions and extending the breadth of some self-leadership components

based on the cross-cultural theory about self-concept differences between individualism

and collectivism. The validation work of this research showed that the modified self-

leadership questionnaire (MSLQ) is a superior measure with higher internal consistency

and more stable factor structure than that of the existing instrument (RSLQ) developed by

Houghton and Neck (2002). Despite the evidence supporting that the MSLQ is

psychometrically valid scale more appropriate for a Chinese population, further validation

work was required to examine whether the item content and factorial structure of the

MSLQ were invariant across Eastern (collectivistic) and Western (individualistic) cultural

groups (Vandenberg & Lance, 2000). In light of this, the second paper of this thesis

examined the psychometric properties and measurement invariance of the MSLQ across

Eastern and Western cultural groups.

Chapter 4 (Ho, Nesbit, Jepsen, & Demirian, 2012) revealed that the MSLQ exhibited

a satisfactory condition of psychometric properties across cultures. A series of multi-

sample confirmatory factor analyses demonstrated the cross-cultural similarity of an

eleven-factor model across the Chinese and Australian samples. Internal reliability

estimates provided additional evidence for the psychometric properties of both Chinese

and English version of the MSLQ. Furthermore, the MSLQ was also found to possess

configural, metric and partial scalar invariance suggesting that researchers could use this

instrument to make valid cross-cultural comparisons.

In sum, research findings presented in Chapter 3 and 4 provided solid evidence that

the MSLQ is a reliable measure which enables self-leadership researchers to conduct

meaningful research on self-leadership behaviors in both Chinese and Western

populations. As such, using this validated scale, the remaining studies of the thesis

empirically examined the cross-cultural differences of self-leadership behaviors as well as

the associations between self-leadership and job performance and job satisfaction.

Chapter 5 (Ho & Nesbit, under review a) is a journal paper that examined how differences in self-construals (people's views about the self) and regulatory focus between individualistic and collectivistic cultures influence the use of self-leadership strategies among Hong Kong and Australian students. Results revealed that significant cultural differences were found for some dimensions of self-leadership strategies. Chinese students utilized the relation-based natural reward and social-oriented evaluation of beliefs and assumption strategy more frequently than Australian students. This finding suggested that these two strategies, which are associated with some social/relation-based features, are more suitable for Chinese who have interdependent self-construal and are more motivated to maintain in-group harmony and to act in accordance with the anticipated expectations of others and social norms. On the other hand, the Australian students, who have independent self-construal, used self-goal setting, and self-cueing strategy more often than did the Chinese students. These findings are consistent with hypotheses developed from regulatory focus theory (Higgins, 1997) and the theory of independent-interdependent self-construals (Markus and Kitayama, 1991).

Chapter 6 of this thesis, also a journal paper (Ho & Nesbit, under review b), examined the predictive validity of self-leadership theory in Chinese organizational settings. It provided theoretical discussion about the relationship between self-leadership and work outcomes of job performance and job satisfaction. This chapter also examined

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the extent to which job autonomy moderated the relationship between self-leadership and these work outcomes. Results showed that subordinates' self-leadership behaviors were positively related to supervisor performance rating and job satisfaction, even when controlling the personality trait of conscientiousness. In addition, job autonomy moderated the relationships between self-leadership behaviors and work outcomes of performance rating, objective work performance and job satisfaction. These findings supported the positive influence of self-leadership above and beyond the influence of conscientiousness in a Chinese context. Employees who have a greater tendency to engage in self-leadership strategies receive higher performance ratings from supervisors and are more satisfied with their jobs. Furthermore, the positive relationships between self-leadership performance ratings, objective job performance and job satisfaction were strongest for those employees reporting high level of job autonomy. High-autonomy jobs provide employees more opportunities to express their self-leadership tendency and therefore increase their job satisfaction and self-motivation for upholding good performance. In contrast, low-autonomy jobs are strong situations with considerable constraints, which inhibit employees from utilizing their self-leadership skills. These situations thereby reduce level of self-motivation for goal achievement and job satisfaction for those high on self-leadership behaviors.

7.4 Contributions and Managerial Implications of This study

The research findings of this thesis make an important contribution to both the body of knowledge and managerial practice in the fields of self-regulation, leadership, motivation, cross-cultural study and work outcomes such as work performance and job satisfaction.

7.4.1 Contributions to knowledge

This thesis makes four main contributions to knowledge.

Contribution 1:

This thesis modifies the existing self-leadership scale (RSLQ) in order to make the application of self-leadership theory and measurement more relevant to the Chinese culture. As discussed in Chapter 3, although an existing self-leadership scale (RSLQ) was found to be a valid scale with promising reliability and construct validity in USA samples (Houghton & Neck, 2002), its generalizability to the Chinese context was problematic (Neubert & Wu, 2006). This thesis provides support for the construct validity and reliability of a modified version of self-leadership scale (MSLQ). This finding suggests that all constructs of self-leadership originally conceptualized by the Western scholars could be generalized to the Chinese contexts.

Contribution 2: In response to calls regarding the applicability of self-leadership measurement in both Eastern (collectivistic) and Western (individualistic) cultures, this

thesis addresses this research gap by examining the psychometric properties and measurement invariance of the MSLQ. As discussed in Chapter 4, research on cross-cultural comparison of self-leadership is rare due to the lack of a measurement instrument applicable in both Eastern and Western cultures. The cross-cultural validity of self-leadership measure examined in this thesis provides evidence that the MSLQ is an appropriate measure to make cross-group comparisons between English and Chinese-speaking participants. Thus, the MSLQ allows cross-cultural researchers to identify potential differences in self-leadership behaviors between Eastern and Western populations.

Contribution 3: Using the self-leadership scale (MSLQ) developed in Chapter 3 and Chapter 4, this thesis empirically explored whether specific self-leadership strategies may be applied differently across cultures. This thesis provides evidence with regard to how differences in self-construals and regulatory focus between Eastern and Western cultures influence individuals' use of self-leadership strategies. This research provides global managers some insights in respect of the cross-cultural similarities and differences in the use of self-leadership between Eastern and Western populations.

Contribution 4: This thesis extends research on self-leadership to the non-western contexts by examining whether the associations between self-leadership and work outcomes can be generalized to Chinese organization settings where paternalism is a

prevalent managerial style. As discussed in Chapter 6, there is little empirical research on examining how self-leadership relates to employee outcomes in non-Western contexts and on investigating the boundary condition of self-leadership. This thesis provides evidence that those employees in Chinese organizations who have a greater tendency to engage in self-leadership strategies receive higher performance ratings from supervisors and are more satisfied with their jobs. To date, the linkages between self-leadership behaviors and work outcomes have been explored mainly in the United States. This finding suggests that such linkages can be generalized to Chinese organization settings where existing social norms and role expectations for employee behaviors are typically different from American organizations. In addition, this study investigates both subjective performance rating and objective job measure, thus giving a more comprehensive study of the relationship between self-leadership and performance.

Another contribution of this research to the self-leadership literature relates to demonstrating that self-leadership is a distinct construct, explaining unique variance in job performance measures and job satisfaction, beyond the personality trait of conscientiousness. This conclusion suggests that the practice of self-leadership strategies operates apart from the influence of personality.

7.4.2 Managerial Implications

This thesis has three major implications for managerial practice, especially for human resources practitioners and supervisors, considering the cross-cultural differences of self-leadership behaviors and the employee outcomes of self-leadership such as work performance and job satisfaction.

Implication 1:

As noted in the thesis introduction, increasingly complex and dynamic work environments are often associated with the need for greater employee responsibility and autonomy in the way they carry out job tasks. This thesis has shown that Self-leadership is an important attribute to consider in the skill-set of contemporary employees. Given that Self-leadership is viewed as learnt skills that are amenable to change (Manz, 1986), employees' self-leadership skills should be enhanced through training interventions. Furthermore, to improve organizational effectiveness, selection practices, especially for positions with work role autonomy may need to take into account individual proficiency in self-leadership skills.

Implication 2: The moderating effects of job autonomy reported in this thesis also suggest that managers may modify their style of supervision to ensure that their subordinates are given with sufficient discretion on determining their work schedule and work methods. By doing so, self-leading individuals would have more freedom to express

their self-motivation tendency in pursuit of goal attainment, leading to higher job

satisfaction and better job performance.

Implication 3:

This thesis provides managers working in multi-national corporations some insights in

respect of the cross-cultural differences in the practice of self-leadership strategies. Given

the increasing numbers of multinational corporations in the global economy and increased

interdependencies among nations, employees are increasingly required to work with

others from diverse nationalities and cultural backgrounds. As a result, global managers

may improve their managerial effectiveness by understanding how their subordinates with

different cultural backgrounds lead themselves to achieve their goals. This study may

serve as a roadmap for managers to understand how to guide their subordinates from

individualistic/collectivist culture to improve their self-leadership skills.

7.5 Thesis Limitations and Future Directions

There are also a number of limitations in this thesis that open the way for further

research to advance understanding of self-leadership theory. First, as discussed in

Chapter 3, the cross-cultural application of self-leadership was limited to the cultural

value of collectivism-individualism. Other elements of Hofstede's cultural framework,

such as high-low power distance, and long-term-short-term orientation, could also

potentially impact cultural representations of self-leadership. Thus, further exploration

of the existing self-leadership components in consideration of other cultural dimensions

is needed to investigate how the application of self-leadership differs across national

cultures.

Second, since the reliability estimates of social-oriented evaluation of beliefs and

assumptions, task-based natural rewards and visualizing successful performance in some

samples of this research were marginal in that they did not exceed the acceptable level of

0.7, further item modification may be needed to improve the reliability of these subscales.

Third, as noted in Chapter 4 and Chapter 5, based upon the research findings of

some previous cross-cultural studies (Hofstede, 1980; Oyserman, Coon, & Kemmelmeir,

2002), this research assumed that the Hong Kong student subjects were collectivists.

Without measuring the cultural differences of these two samples in terms of the

individualism-collectivism orientation (Singelis, Triandis, Bhawuk, & Gelfand, 1995), it

is possible that these young Hong Kong students may be open to greater influence from

Western culture and be more individualistic in their values, like the Australian sample.

However, given that the Chinese students in the sample are strongly influenced by

Chinese tradition and speak Cantonese in their education and in their daily lives, it is

unlikely that these two samples are similar in terms of their cultural value orientation.

Nevertheless, future replication studies are suggested to utilize specific measures of

individualism/collectivism in their research.

Fourth, as shown in Chapter 4 and Chapter 5, the use of student samples within a narrow age range collected in Hong Kong and Australia may limit the generalizability of results related to the psychometric properties of the MSLQ. It would also be of interest to examine whether the MSLQ could be generalized to other populations with wider age ranges.

Fifth, future research might examine whether the findings related to the cross-cultural differences in self-leadership behaviors reported in Chapter 5 could be generalized to other collectivistic cultures such as Brazil or Columbia where social ties are stressed (Oishi, Diener, Lucas, and Suh, 1999) without a strong emphasis on academic achievement. As stated in Chapter 5, the Chinese value of educational achievement (Biggs, 1996; Li, 2001) may propel Chinese students to become more promotion-focused, leading to the unexpected findings of the insignificant differences in the use of some dimensions of self-leadership strategies between the Chinese and Australian student groups. It would therefore be valuable to explore whether cross-cultural differences in the use of self-leadership strategies are more likely to happen between individualists from U.S.A. or Australia and collectivists from Brazil without a strong focus on academic achievement.

Sixth, as noted in Chapter 6, cross-sectional data are used for investigating the

association between self-leadership and the three outcomes variables of job satisfaction,

performance rating and objective sales performance in this study. This means that cause

and effect relationships cannot be inferred from the findings reported here. The results are

vulnerable to opposite or bi-directional relationships as we cannot rule out the possibility

that poor performance and job satisfaction may lead to a reduction in self-leadership

behaviors. An argument against such reversed causality is that existing longitudinal

research has generally demonstrated that training in self-management and constructive

thought self-leadership strategies are effective for improving job attendance (Frayne &

Latham, 1987; Latham & Frayne, 1989), mental performance, and job satisfaction (Neck

& Manz, 1996). Nevertheless, future research should adopt a longitudinal design to affirm

the causal relationship.

Finally, future research should also consider extending the research model of this

thesis by including a broader array of outcome variables such as organization

commitment, turnover intention, and creative work performance. For example, self-

leadership theorists propose that individuals who influence themselves towards their self-

set goals often develop a sense of responsibility and ownership over their tasks (Manz &

Sims, 2001). Thus, it is likely that self-leading employees may demonstrate higher levels

of commitment to their tasks and organizations and have less intention to leave the

organizations than individuals who are not engaging in self-leadership.

Conclusions

Given the current trend of globalization, employees' self-leadership capabilities are becoming increasingly essential for contemporary organizations to succeed in a dynamic business environment. Self-leadership has developed largely within the context of the culture of the USA, the intercultural aspects of self-leadership have received limited academic attention to date. This thesis represents a significant contribution on extending the breadth of self-leadership theory and refining its measurement with collective cultures in mind. Furthermore, this research generalizes self-leadership research beyond a Western context and advances understanding of how self-leadership strategies could be applied across cultural boundaries. This thesis revealed some important results, including that (1) a modified self-leadership scale (MSLQ) is a reliable measure which could be generalized to a Chinese context; (2) the MSLQ is an appropriate measure to make cross-cultural comparisons between English and Chinese-speaking participants; (3) cultural differences in self-construals and regulatory focus between individualistic and collectivistic cultures may influence individuals' practice of some dimensions of self-leadership strategies; (4) self-leadership is positively related to supervisor performance rating, and job satisfaction in a Chinese cultural context; and (5) the effectiveness of employee's self-leadership behaviors depends on how much autonomy employees have on their jobs. The practical implications of these findings suggest that employees' self-leadership skills could be enhanced

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through the practice of training interventions as self-leadership is viewed as skilled behavior

that are amenable to change (Manz, 1986). In addition, in order to encourage self-leading

individuals to persist in improving their work performance, organizations and supervisors

should consider taking steps to increase employees' discretion on determining work schedule

and work methods.

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Appendix A

Published Paper

Ho, J., & Nesbit, P.L. (2009). A refinement and extension of the self-leadership scale for the Chinese Context. *Journal of Managerial Psychology*, *24*, 450-476.

Appendix A of this thesis has been removed as it contains published material. Please refer to the following citation for details of the article contained in these pages.

Ho, J., & Nesbit, P.L. (2009). A refinement and extension of the self-leadership scale for the Chinese Context. *Journal of Managerial Psychology*, 24(5) p. 450-476.

Appendix B

Published Paper

Ho, J., & Nesbit, P.L., Jepsen, D., & Demirian, S. (2012). Extending self-leadership research to the East: Measurement equivalence of the Chinese and English versions of the MSLQ. *Asian Journal of Social Psychology, 15,* 101-111.

Appendix C

Conference Paper

Ho, J., & Nesbit, P.L. (2012, September). *Self-leadership strategies: A comparative study of Hong Kong Chinese Students and Australian Students.* Paper presented at the British Academy of Management Conference, Cardiff, UK.

Use of Self-leadership strategies: A comparative study of

Hong Kong Chinese and Australian students

Author:

Jessie Ho [a]*, **Paul L. Nesbit[a]**.

[a] Macquarie Graduate School of Management, Macquarie University, Sydney, Australia.

  Address: Ryde 2109, NSW, Sydney, Australia.

  Email Address: (1) Jessie Ho: ccjessie@hkcc-polyu.edu.hk;

                          (2) Paul L. Nesbit: paul.nesbit@mgsm.edu.au

* Corresponding author.

Contact Address: PolyU HKCC (West Kowloon Campus) 9 Hoi Ting Road, Yau Ma Tei,
                                    Kowloon, Hong Kong.

Phone: (852) 3746-0107

Fax: (852) 2625-9084

Abstract

The purpose of this study was to examine how culture influences the use of self-leadership strategies among Hong Kong and Australian students. Results revealed that significant cultural differences were found for some dimensions of self-leadership strategies. Chinese students reported greater use of self-reward, relation-based natural reward, individual-oriented and social-oriented evaluation of beliefs and assumption, whereas Australian students reported greater use of self-goal setting, and self-cueing. However, no cultural differences were found for the use of self-punishment, positive self-talk, visualizing successful performance as well as task-based natural rewards. Implications and future research are also discussed.

Over the past two decades, multi-national organizations have restructured, and moved toward decentralized, organic-type organizational structures (Conger and Kanungo, 1988) in response to the rapid changes in business markets. People with high levels of capacity and skills in self-direction and self-influence should respond more successfully and effectively to the dynamic changes of organization structures and environments (Ensley, Hmieleski, &

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Pearce, 2006). Self-leadership has become an important concept in Management and Organizational Psychology which is defined as "a self-influence process through which people achieve the self-direction and self-motivation necessary to perform" (Neck & Houghton, 2006, p. 2).

Self-leadership strategies are typically classified into three categories, namely behavior-focused strategies, natural reward strategies, and cognitive or thought pattern strategies (Manz and Neck, 2004; Prussia, Anderson and Manz, 1998; Sims and Manz, 1996). Behavior-focused self-leadership involves using action-oriented strategies to accomplish tasks that are difficult or are neither enjoyable nor motivating. Sims and Manz (1996) identified various behavior-focused self-leadership strategies, including self-observation, self-goal setting, self-reward, self-punishment, and self-cueing strategies. Natural reward strategies are designed to enhance intrinsic motivation for better performances by focusing one's attention on the pleasant aspects of a given job and by engaging in job- or task-redesign to build in more enjoyable work activities (Manz and Neck, 2004). Constructive thought strategies involve visualizing successful performance, engaging in positive self-talk, and examining individual beliefs and assumptions to align cognitions with desired behavior (Neck and Manz, 1996; Neck, Stewart and Manz, 1995). Research on the use of self-leadership strategies has found it to be effective at enhancing performance in clinical, athletic, and educational settings (Neck and Manz, 1992), and in employment contexts (Neck and Manz, 1996; Stewart, Carson and Cardy, 1996).

Given the increasing numbers of multinational corporations in the global economy and increased interdependencies among nations, employees are increasingly required to work with others from diverse nationalities and cultural backgrounds. Management scholars become more interested in understanding the ways in which culture influence behavior in organizational settings. An important area that has been neglected to date is the effect of

Eastern and Western cultures on individuals' use of self-leadership strategies. Georgianna (2007) has made a first step to study the influence of culture on young adults' use of self-leadership strategies. This study provided evidence that the US respondents expressed higher levels of self-leadership than the Chinese respondents. However, each self-leadership strategy was measured by only one item for each self-leadership domain and so may not adequately capture the theoretical conceptualization of self-leadership proposed by self-leadership theorists (Manz, 1986; Manz and Sims, 1980; Manz and Neck, 2004). In order to advance cross-cultural research on self-leadership, research utilizing a more reliable self-leadership scale is needed.

Given that much of the existing research has been done in the United States, which represents a relatively individualistic culture, additional work is need to address the applicability of self-leadership theory across cultures (Stewart, Courtright, & Manz, 2011; Neck and Houghton, 2006; Alves *et al.,* 2006; Neubert and Wu, 2006). While it has been argued that self-leadership behavior is a generally universal concept (Alves *et al.* 2006), different cultures may value different attributes and practices. Thus, self-leadership strategies may be applied differently across cultures. For example, Alves *et al.* (2006, p. 351) examined the components of self-leadership using Hofstede's (1980) culture framework and concluded that "high power distance is likely to contribute to a more restricted and contingent form of self-leadership where the extent of self-influence practiced that is independent of cultural expectations and norms is more limited. Thus, self-leadership will rely more on symbolic rather than material aspects. Cultures where power distance is low will have a more individually unique and autonomous form of self-leadership."

The purpose of this study is to examine how culture influences individuals' use of self-leadership strategies among the Chinese and Australian respondents, using one recently developed self-leadership scale (Ho & Nesbit, 2009) which was found to be relevant for both

Eastern and Western culture (Ho, Nesbit, Jepsen and Demirian, 2012. In the remainder of this paper, we outline a study that explores differences between Eastern and Western participants in the practice of self-leadership strategies. We begin with a discussion of the theoretical foundation of our study and outline hypotheses based on this discussion.

Theoretical Background and Hypotheses

Independent-Interdependent self-construal and Self-leadership

According to Markus and Kitayama (1991), people in Western (individualistic) and Eastern (collectivistic) cultures may differ in views about the self. Considerable research in cultural psychology has identified two types of self-construal: the independent and the interdependent self-construal (Markus and Kitayama, 1991; Triandis, 1989; Gardner, Gabriel and Lee, 1999). Independent self-construal represents a view of oneself as an independent, self-reliant, autonomous individual who is separate from the social context (Markus and Kitayama, 1991). In Western (e.g. individualistic) cultures such as North America and Australia where an independent self-construal is predominant, people are motivated to become independent from others and to pursue the expression of one's unique configuration of needs, rights, and capacities. The interdependent self-construal, on the other hand, involves viewing oneself as "part of an encompassing social relationship" (Markus and Kitayama, 1991, p. 227). In Eastern (e.g. collectivistic) cultures such as China and Japan, where an interdependent self-construal is predominant, people tend to suppress and restrain inner attributes such as desire, personal goals and private emotions to fit in with significant others, and to meet social obligations as part of social networks (Triandis, 1995).

It has also been noted that these differences in the behaviours of these two types of self-construal, reflect differences in regulatory focus (Lee, Aaker and Gardner, 2000). Regulatory focus relates to differences in the way people orient towards goal accomplishment which

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influences the way they regulate their behavior (Higgins, 1997). According to regulatory focus theory (Higgins, 1997), there are two fundamental orientations: prevention and promotion. The promotion regulatory focus involves peoples' desire for advancement, growth, and accomplishment, whereas the prevention regulatory focus involves peoples' concern for safety, obligation and responsibility (Heine, Lehman, Markus, and Kitayama, 1999). Lee *et al.* (2000) argued that the primary goal of the independent self-construal is seen as developing one's unique potential through the pursuit of success and accomplishments. Thus, the goals of those with independent self-construal are viewed as more consistent with a promotion focus. In contrast, the primary goal of those with interdependent self-construal is to maintain harmony and connections with others, and to fulfill their social obligations (Markus and Kitayama, 1991). Thus, people with a dominant interdependent self-construal are inclined to avoid social disapproval or failures that may disrupt their commitment of enhancing social relations, which is more consistent with a prevention focus. Lee *et al.* (2000) provided evidence that individuals with a dominant independent self-construal focused more strongly on promotion-focused information that emphasized potential gains, whereas those with a dominant interdependent self-construal placed more attention on prevention-focused information that emphasized potential losses.

Differences in self-construal and regulatory focus might also result in cultural differences in the practice of self-leadership strategies. Individualists (who are known to hold a predominant independent self-construal) may, for example, use self-leadership strategies that support the regulation of their cognitions and behaviors toward positive outcomes such as advancement and achievement. We expect that such individualists are more likely than collectivists to initiate the setting of challenging goals, apply self-rewards imposed for energizing the effort towards goal achievement, and construct certain concrete environmental cues (e.g. notes, motivational posters) used for shaping constructive behaviors. The

applications of these three self-leadership strategies may enhance the individualists'

perceived control and self-efficacy in attaining their desired outcomes.

In contrast, collectivists (who are known to hold a predominant interdependent self-construal)

strive to harmoniously fitting in with others and to live up the expectation of significant

others. Since collectivists place more emphasis on avoiding negative outcomes (Markus and

Kitayama, 1991), they are more likely to exhibit prevention focus behaviors in their desire to

avoid failure and mistakes that may jeopardize their goals of maintaining social harmony.

Thus collectivists are expected to use self-leadership strategies in order to regulate their

cognitions and behaviors away from negative outcomes.

Research on self-regulatory focus has provided evidence that promotion-focus individuals are

more persistent than prevention-focus individuals to attain success at difficult problem

solving tasks (Crowe and Higgins, 1997). Crowe and Higgins's (1997) experimental study

found that participants in the promotion-focus framing conditions persisted longer in solving

more anagrams than those in the prevention-focus framing conditions. It was argued that

individuals under prevention-focus framing conditions tend to quit difficult problem tasks

earlier to avoid prolonging engagement with making mistakes. Given that promotion-focused

individualists appear to place more value on the pursuit of personal success and

accomplishment, we expect that Australian students, who represent individualists in this

study, are more likely to set personal goals, construct environmental cues and apply self-

reward to guide themselves than Hong Kong Chinese students who represent collectivists.

Thus,

> H1: Australian students are more likely to apply self-goal setting strategy, self-reward
>
> strategy and self-cueing strategy than Hong Kong students.

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It has been suggested that the promotion regulatory focus among the individualists involves sensitivity to the presence or absence of positive outcomes (Higgins, 1997). Such sensitivity may heighten individualists' attention on the positive side of their accomplishments. Previous studies found that individualists are more likely to attend to positive information than to negative information regarding themselves (Heine *et al*., 2001; Heine, Lehman, Markus, and Kitayama, 1999; Taylor and Brown, 1988). For example, American individuals may uncritically accept positive feedback while critically evaluating negative feedback (Frey and Stahlberg, 1986). Heine (2005) also suggested that individualists are more likely to engage in self-deceptive enhancement so as to boost their self-image. Since promotion-focused individualists are eager to see themselves in a positive manner, we propose that Australian students who represent individualists are more likely to lead themselves through the strategy of visualizing successful performance and positive self-talk. Positive self-talk is an optimistic internal dialogue people use to encourage themselves for goal achievement (Burns, 1980; Manz and Neck, 2004). Visualizing successful performance involves imagining the successful completion of a task or activity (Manz and Neck, 2004). These two strategies are mental techniques which are expected to help individualists to maintain a self-reliant, and competent self-view.

In contrast to individualist who are sensitive to the presence or absence of positive outcomes, collectivists, driven by the need to feel secure and to avoid getting social disapproval, tend to focus on the negative information about the self (Heine and Lehman, 1999). For example, research has found that Japanese are more self-critical than are North Americans (Heine *et al*., 1999). Lee, Aaker and Gardner (2000) stressed that "on the basis of the identification of what is lacking in the self, steps are taken to improve on these deficits to become a better, more unified part of the relevant social unit, a tendency that appears to grow over time as nurtured by socialization processes (p. 1123)."

Therefore, the strategies of positive self-talk and visualizing successful performance are less relevant for collectivists' goals of improving interpersonal relations. Instead, self-punishment strategy which involves self-criticism and guilt associated with one's unsatisfactory performance is more relevant for the collectivists trying to correct the negative side of the self in pursuit of getting social acceptance. However, self-punishment strategy contributes little to individualists' needs of maintaining competent, positive self-views. Thus, we suggest different use of self-talk, visualization, and self-punishment strategies between the Hong Kong Chinese and Australian students.

> H2: Australian students are more likely to apply visualizing successful performance and positive self-talk strategy than the Chinese students.

> H3: Chinese students are more likely to apply self-punishment strategy than the Australian students.

Self-leadership's conceptualization of natural rewards is based primarily on the intrinsic motivation literature, particularly Deci and Ryan's (1985) self-determination theory. Feelings of autonomy and competence are a central focus in the task-based natural rewards strategy component of self-leadership (Manz and Neck, 2004). This strategy involves building more pleasant and enjoyable features into a given activity and assumes that once activities and task can be restructured or perceived in ways that lead to increased feelings of competence and self-determination, the enjoyment of the task will be enhanced, resulting in higher task performance (Neck and Houghton, 2006). However, while the enjoyment of the task attached to the values of autonomy and self-determination may hold true for those from western, individualistic culture emphasizing independence, it may be less relevant for people from Eastern, collectivist culture with a strong need of relatedness. Iyengar and DeVoe (2003) argued that in cultures that foster social interdependence, collectivists might prefer to submit

to choices expressed by others if the situation enables them to fulfill the superordinate cultural goals of belongingness. For example, Iyenger and Lepper (1999) found that the intrinsic motivation and performance of Asian American children was highest, not in contexts offering personal choice, but in those in which choices were determined for them by valued in-group members or trusted authority figure (e.g. their mothers).

Given that the feelings of maintaining in-group harmony and belongingness rather than the feelings of self-determination and competence may act as a major source of task enjoyment in collectivistic culture (Iyengar and Lepper, 1999), we expect that relation-based natural reward strategy which involves getting work enjoyment through maintaining connections with others is more relevant for collectivists than for individualists. Thus we argue that Australian students with a dominant independent self may use task-based natural reward strategy more often than do the Hong Kong Chinese students, whereas the Chinese respondents with a dominant interdependent self may apply relation-based natural reward strategy more frequently than do the Australian respondents.

> H4: Australian studentsare more likely to apply task-based natural rewards than the Chinese students.

> H5: Chinese students are more likely to apply relation-based natural rewards than the Australian students.

While cultural value influences the way people get enjoyment from their jobs, it also shapes individuals' ways of controlling their own thought and beliefs inherent in goal achievement. According to Kim and Markus (1999), people from individualistic cultures are encouraged to search for their own dreams and freedom beyond the constraints imposed by rules, norms, and others' expectation. Accordingly, individualists may intend to regulate themselves for personal success by reference to their own internal repertoire of thoughts, feelings, and

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actions, rather than by reference to the standards and opinions of others or social groups (Heine *et al.*, 1999). In contrast, people from collectivistic culture are motivated to find a way to fit in with relevant others, to fulfill obligation in order to become part of various interpersonal relationships (Markus and Kitayama, 1991). Given that the goal-striving behaviors of individualists are more self-oriented than collectivists, the strategy of social-oriented evaluation of beliefs and assumption with a strong focus on improving social relations are less relevant for individualists. On the other hand, collectivists are more likely to use social-oriented evaluations of beliefs assumption strategy because it helps them to adjust their own viewpoints to avoid conflicts with those of their in-group (Ho and Nesbit, 2009).

In addition, individual-oriented belief and assumption strategy is expected to be more suitable for individualists than for collectivists. Evaluating beliefs and assumptions aims to help one recognize one's dysfunctional thinking and destructive beliefs, learn to challenge them, and replace them with more constructive thoughts. Using this strategy may help individualists to enhance their personal success by reflecting on their own thinking processes relative to their goals. However, individual-oriented belief and assumption strategy seem to be less useful for collectivists who place heavy emphasis on improving social relations and maintaining one's respected place within a group. On this basis we expect to see the following differences in the nature of evaluation of beliefs and assumptions among the Australian and Hong Kong Chinese students.

> H6: Chinese students are more likely to apply social-oriented evaluation of beliefs and assumptions than the Australian students.

> H7: Australian students are more likely to apply individual-oriented evaluation of beliefs and assumptions than the Chinese students.

Method

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Participants and Measure

Participants were from Hong Kong and Australia and represented two diverse cultures. Hofstede (1980) and Oyserman, Coon, and Kemmelmeir (2002) found that Australia has emerged as one of the most individualistic societies in the world and that collectivist countries were in Asia, such as China, Japan and Hong Kong. In particular, Hofstede (1980) found that Hong Kong samples were lower than the Australian counterparts on individualism and uncertainty avoidance but higher on power distance. These characteristics were typically identified as collectivist. The collectivist cultural value is assumed to be maintained among these Chinese participants, especially given the strong influence of the Chinese social influences, such as given exposure to Chinese mainland influences and by the fact that the Hong Kong students' education was mostly conducted in Cantonese.

Chinese sample. Responses were collected from 395 full-time Chinese students (64% female; 36% male) undertaking business classes at a community college in Hong Kong. Ages ranged from 18 to 29 (Mean = 19.9, S.D. = 1.16). The questionnaires were completed anonymously and participation was voluntary without compensation.

Australian sample. The sample was made up of 241 Australian full-time students who were born and had lived all their lives in Australia (69% female; 31% male). All respondents were recruited from two public universities located in Sydney. Ages ranged from 17 to 50 (Mean = 20.4; S.D. = 4.55). All students were undertaking psychology classes and received course credit for their participation. In order to maximize the possible differentiation between the two cultural groups, overseas students were excluded from the respondent sample.

Measures

Self-leadership was measured using the modified Self-leadership Questionnaire (MSLQ) developed by Ho and Nesbit (2009). The MSLQ consists of 38 items describing various behaviors associated with self-leadership and participants use a 5-point Likert-type scale (1 = not all accurate; 2 = a little accurate; 3 = somewhat accurate; 4 = mostly accurate; 5 = completely accurate) to indicate how accurate each behavior describes them. The 10 subscales include Visualizing Successful Performance (2 items); Self-goal Setting (4 items); Self-talk (3 items); Self-reward (3 items); Self-punishment (4 items); Task-based Natural Reward (4 items); Relation-based Natural Reward (4 items); Individual-oriented Evaluation of Beliefs and Assumptions (5 items); Social-oriented Evaluation of Beliefs and Assumptions (3 items); Self-cueing (2 items). Sample items include "I use my imagination to picture myself performing well on important tasks," "I consciously have goals in mind for my work efforts," "I think that the enjoyment gained from work is more important than external rewards," and "When I differ from others' opinions, I try to modify my thinking to avoid conflicts so as to maintain harmony." See Ho and Nesbit's (2009) validation research for the complete questionnaire.

Before we test the above hypotheses by comparing mean values for each of the self-leadership strategies across the cultural groups, we should examine whether the modified self-leadership scale (MSLQ) possess measurement invariance. Establishing measurement invariance is a critical step which ensures that any observed differences truly reflect differences between cultures on the underlying construct, and are not due to systematic biases in the way people from different cultures interpret a given measure in a conceptually different manner (Vandenberg and Lance, 2000). Ho, Nesbit, Jepsen and Demirian (2012) using the same samples of this study, has provided evidence that the MSLQ is equivalent across the Chinese and Western cultures. Thus, the MLSQ is a reliable measure for this study to make

valid cross-cultural comparisons. For detailed discussion regarding the statistical procedures of testing measurement invariance, please refer to the study conducted by Ho *et al.* (2012).

Results

Data Analysis Procedure

In the present study, following the procedure outlined by Byrne (2001), we used the analysis of latent-mean differences to test for the seven hypotheses stated above (Drasgow and Kanfer, 1985; Byrne, Shavelson, and Muthén, 1989). It has been suggested latent-mean differences are more valid than the analysis of variance (ANOVA) or t-tests (Polyhart and Oswald, 2004). Testing the latent-mean differences through multi-group confirmatory factor analysis (MGCFA) accommodates varying degrees of partial measurement invariance (see Reise, Widaman and Pugh,1993).

Since the MSLQ was found to possess partial scalar invariance in Ho *et al.* (2012) where the intercepts of eight items were non-equivalent. Thus, latent-mean differences test was more appropriate than t-test or ANOVA for the present study as it allowed the item intercepts to be partially invariant. We conducted the latent mean-difference test based on the partial scalar invariance model. Thus, latent construct means were compared by allowing eight intercepts (found to be not equivalent across groups in this study) to vary freely while constraining other intercepts and all factor loadings to be identical across groups (Polyhart and Oswald, 2004; Steenkamp and Baumgartner, 1998).

As part of this procedure, it was necessary to allow latent-variable means (e.g. average mean score of self-goal setting factor) to be freely estimated for Australian group but to be constrained equal to zero for the Chinese group, which served as a "reference group".

Selection of which cultural group would serve as the reference group is purely arbitrary (Byrne, 2001). Thus, the latent means for the Australian group were estimated. Significant positive mean differences would indicate that the Australian group reported higher ratings on a given measure. In determining significant differences, the critical ratio with values greater than ± 1.96 indicating statistical significance ($p \leq .05$; Arbuckle and Wothke, 1999).

Test of Hypotheses

As shown in Table 1, compared with the Chinese respondents, Australian respondents reported significantly higher use of self-goal setting(mean $_{diff}$ = .162, p<.05), self-cueing(mean $_{diff}$ = .392, p<.001). In opposite direction to the prediction of H1,Australian respondents reported less use of self-reward strategy (mean $_{diff}$ = -.266, p<.001) than did Chinese respondents. Therefore, H1 was partially supported. There were no significant cultural differences in visualizing successful performance (mean $_{diff}$ = -.076, p > .05), positive self-talk (mean $_{diff}$ = .080, p > .05), self-punishment (mean $_{diff}$ = .002, p > .05) and task-based natural reward (mean $_{diff}$ = -.106, p > .05). H2, H3, and H4 were not supported.

 As predicted, Chinese respondents reported significantly higher use of relationship-based natural reward (mean $_{diff}$ = -.339, p<.001) and social-oriented evaluation of beliefs and assumptions (mean $_{diff}$ = -.372, p<.001) than Australian respondents. Thus, H5 and H7 were supported. Moreover, contrary to the prediction of H6, Chinese respondents reported using individual-oriented evaluation of beliefs and assumptions to a greater extent than did Australian respondents (mean $_{diff}$ = -.135, p < .05). Hence, H6 was not supported in this study.

Discussion

The purpose of this study was to examine how culture influences the individuals' use of self-leadership strategies among the Chinese and Australian respondents. In the present study, significant cultural differences were found for some dimensions of self-leadership strategies. As predicted, Chinese respondents utilized the relation-based natural reward and social-oriented evaluation of beliefs and assumption strategy more frequently than Australian respondents. This finding suggested that these two strategies which are associated with some social/relation-based features are more suitable for Chinese respondents with interdependent selves because they are more motivated to maintain in-group harmony and to act in accordance with the anticipated expectations of others and social norms. On the other hand, the Australian respondents used the self-goal setting, and self-cueing strategy more often than did the Chinese respondents. These findings could be explained by the regulatory focus theory (Higgins, 1997) in connection with the theory of independent-interdependent self-construal (Markus and Kitayama, 1991). Australian respondents with independent selves tend to be more promotion-focused and are more concerned with attaining success and accomplishment in the pursuit of self-glory. Hence, they are more proactive in setting their own goals and environmental cues so as to enhance their persistence in achieving personal success.

It is interesting that, contrary to the predictions of the hypotheses, the Chinese respondents utilized the strategies of self-reward and individual-oriented evaluation of beliefs and assumption more often than the Australian counterparts. In addition, there were no significant differences between the Chinese and Australian respondents in terms of the mean scores measuring visualizing successful performance, positive self-talk, self-punishment and task-based natural rewards. There are two perspectives to explain the lack of support for the hypotheses concerning these five self-leadership strategies. Given that Hong Kong and

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Australian students were being used in this study, then self-leadership strategies would be referenced towards academic goals. In other words, how self-leadership is being utilized is likely to be in relation to how students manage themselves in reaching academic goals. Thus findings could be linked to the Chinese tradition emphasizing the importance of academic success for one's future (Bond, 1991). According to Bond (1991), "Social skills, athletic ability or personal fulfillment are secondary to doing well in school…since academic achievement is still a major escalator to higher position, parents exert massive pressure on their children to do well in school" (p.18). Past empirical education research found that Asian students possess higher achievement motivation than Western students because Asians believe all performance is linked to an internal and controllable source – effort, whereas Westerners believe more in fixed ability (Dweck, 1999; Tweed and Lehman, 2002). This belief influences Asian parents to place higher academic expectations on their children (Stevenson *et al.*, 1991). Reglin and Adams (1990) found that Asian American students are more influenced by their parents' desire for success than are their non-Asian counterparts. Thus, Asian students' burden to meet their parents' academic expectations, coupled with their belief in learning through effort rather than fixed ability, translated into higher level of self-control effort striving for academic success. In addition, Confucian tradition in teaching is still a major source of influence on child rearing practices in Hong Kong (Salili and Lai, 2003). Confucius's conception of learning is a process of 'studying extensively, inquiring carefully, pondering thoroughly, sifting clearly, and practicing earnestly' (Lee 1996, p.35). Memorization is viewed as an important way to get familiar with the text. In order to excel under the high-stress examination system, Hong Kong students should ensure accurate recall of already understood information (Biggs, 1996). According to Tang and Biggs (1996, p. 159), "success comes to those who apply themselves to their allotted tasks unremittingly; with diligence, you can grind an iron bar into a needle, as a Chinese proverb puts it." To

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enhance their chances of academic success, collectivist students should use 'receptive diligence' (Azuma, 1986; Singleton, 1989) for the memorization tasks, which are unpleasant and boring. To deal with the unattractive but necessary tasks of memorization, Hong Kong Chinese students should take more initiative to apply the strategies of self-reward and individual-oriented evaluation of beliefs and assumption more often than the Australian counterparts. That is, these Chinese students tend to reward themselves with things and activities they enjoy when they accomplish their academic goals. To reduce their intense stress they face at school, they are more inclined to identify their dysfunctional beliefs and replace them with more rational thoughts.

A second explanation for the unexpected findings could relate to the notion that feelings of autonomy and competence are equally important for both Chinese and Australian students. Earley, Gibson and Chen (1999) found that collectivist employees partly derive their sense of self not only from the actions and reactions of important others, but also from the evaluations about their own performance. Earley et al. (1999) stressed that "if we consider the welfare of a social group in a collective society, then this finding makes perfect sense because it is through personal attainment that a group will prosper. Consistent with an "invisible hand" metaphor, a collectivist's sense of self is derived through individual contribution toward collective success" (p. 614-615). Taken together, the collectivists (Chinese students) of this study, in order to motivate themselves towards higher level of personal achievement, may have an urge to maintain a self-reliant, competent self-view. In so doing, they may downplay the role of self-criticism (self-punishment strategy) so as to minimize its negative impact on self-confidence and practice the self-motivated strategies of visualizing successful performance, positive self-talk and task-based natural rewards as often as did the individualists (Australian students). Such tendencies result in the insignificant differences across cultures in the use of these four strategies.

Salili (1994) also found that affiliative and individualistic categories of achievement goals are equally important for both British and Chinese high school students. In the area of individualistic achievement, academic achievement goal was the most important for the Chinese, whereas career achievement goal was most important for the British. This finding suggests that human need of individualistic achievement is universal, regardless of culture. Even though Chinese are very motivated to achieve the academic individualistic goals, compared with the Australian counterparts, they are less likely to set their own goals and construct environment cues for goal attainment. These behaviors could be explained by the fact that their academic goals in University are all clearly set by their teachers such as the learning objectives and deadlines. In contrast, we expect that the Australian students, similar to the British students, may place more emphasis on career goals instead of academic goals. Thus they should set their own career goals beyond their academic goals. In doing so, they should attain their career goals independently without depending on their college teachers. As their teachers play little role in influencing their goal-setting process, the Australian students should apply more self-cueing strategies to help them behave in desirable ways. For example, the Australian students may create a list of some important tasks they should accomplish for building up their career such as attending career talk, or searching for an internship jobs based on their career preference.

Limitation and future research

The present study is not without inherent limitation. The use of a student sample may limit the generalizability of the results, despite the cultural appropriateness of the sample used. Future researchers may consider using an employee sample collected from both Eastern and Western culture. Especially in Chinese organizational setting, paternalistic leadership deeply rooted in Confucian tradition is the prevalent leadership style in which the leaders have high level of power centralization and control over subordinates and demand unquestionable

obedience from subordinates (Farh and Cheng, 2000; Redding, 1990). Because of the Chinese tradition of role compliance, Chinese employees are more likely to depend on the guidance and authority of their supervisors. Thus, compared with the Western workers, Chinese employees may take less initiative to practice self-leadership strategies, especially those individual-centered strategies helping self-leaders to enhance their perception of autonomy, and competent self-view such as task-based natural rewards, individual-oriented evaluation of beliefs and assumptions, visualizing successful performance, and positive self-talk. Furthermore, which self-leadership strategies are most useful for Chinese and Australian employees to enhance their self-efficacy, job satisfaction and performance in job settings has never been investigated. More future research is needed to investigate the relative importance of different self-leadership strategies in predicting work outcomes across cultures.

It would also be of interest to examine whether the findings presented here could be applied to other collectivistic cultures such as Latin American where social ties are stressed (Oishi, Diener, Lucas and Suh, 1999) without a strong emphasis on academic achievement. Cross-cultural differences in the use of self-leadership strategies are more likely to happen between collectivists from Brazil or Columbia and individualists from U.S.A. or Australia.

Our study assumed that the Hong Kong subjects were collectivists, whereas the Australian subjects were classified as individualists. Without measuring the cultural differences of these two samples in terms of the individualism-collectivism orientation (Singelis, Triandis, Bhawuk, and Gelfand, 1995), it is possible that these young Hong Kong students may be open to greater influence from Western culture and be more individualistic in their values, like the Australian sample. However, we are not aware of any empirical research arguing for a convergence of cultural values among young Hong Kong Chinese to Western Individualism. While it is unlikely that these two samples are similar in terms of their cultural value

orientation, we nevertheless, suggest that future studies utilize specific measures of individualism/collectivism in their research.

In conclusion, this study revealed some mixed results. Chinese studentsreported greater use of self-reward, relation-based natural reward, individual-oriented and social-oriented evaluation of beliefs and assumption, whereas Australian studentsreported greater use of self-goal setting, and self-cueing. However, no cultural differences were found for self-punishment, positive self-talk, visualizing successful performance as well as task-based natural rewards. These findings may serve as a road map for educators to understand how their students from collectivist/individualistic culture lead themselves to reach their goals. More future research is needed for studying how students in various cultures practice self-leadership strategies and how these in turn influence their learning and academic achievement.

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Table 1

Results for Latent Mean Difference Tests

Measure	Mean difference	Standard Error	Critical Ratio	P
Self-goal setting	.162	.067	2.439	.015
Self-reward	-.266	.077	-3.458	<.001
Self-Cueing	.392	.086	4.544	<.001
Visualizing successful performance	-.076	.083	-.910	>.05
Positive self-talk	.080	.091	.882	>.05
Self-punishment	.002	.054	.035	>.05
Task-based natural reward	-.106	.071	-1.490	> .05
Relation-based natural reward	-.339	.066	-5.123	<.001
Individual-oriented evaluation of beliefs and assumption	-.135	.066	-2.059	< .05
Social-oriented evaluation of beliefs and assumption	-.372	.055	-6.722	<.001

Appendix D

Conference Paper

Ho, J., & Nesbit, P.L (2011, August). *Self-leadership and job autonomy: Independent and interactive effects on work outcomes in a Chinese context*. Paper presented at the 71st Annual Meeting of the Academy of Management, San Antonio, TX.

Self-leadership and Job Autonomy: Independent and Interactive effects on Work Outcomes in a Chinese Context

Abstract

This study examined the influence of self-leadership behaviors on supervisor performance rating, objective work performance and job satisfaction. In addition to the main effects, we also hypothesized that job autonomy would strengthen the relationship between self-leadership behaviors and work outcomes. Using a sample of 412 supervisor-subordinate dyads collected in People's Republic of China and Hong Kong, we found that subordinates' self-leadership behaviors are positively related to supervisor performance rating, objective work performance and job satisfaction and that job autonomy moderated all three of these relationships. Implications of these findings for research and practice are discussed.

Keywords: Self-leadership, Job Performance, Job Satisfaction

Today's workers are working in turbulent, complex work environments that are characterized by globalization, rapid technological advances, declining resources and increasing costs (Kinicki, McKee, & Wade, 1996; Murphy, 2002). To adapt to the rapid changes in business markets, organizations are downsizing, restructuring, and moving toward decentralized, organic-type organizational structures (Conger & Kanungo, 1988). Employees working within these organizations are required to take greater responsibility for their own job tasks and work behaviors. Hence, people's self-leadership skills may be their most essential asset for job success as their motivation to achieve high performance levels increasingly depends on how well they could manage themselves rather than the leadership skills of their supervisors (Herzberg, Mausner, & Snyderman, 2003; Manz & Sims, 1980). Lovelance, Manz, and Alves (2007) propose that self-leadership enables people to self-motivate themselves to achieve organizational goals without relying on the supervision of their own leaders. Consequently, self-leadership offers a way of reducing some of the leadership burden of a formally designed leader (Lovelace, Manz, & Alves, 2007) by developing followers' abilities to lead themselves (Manz & Sims, 1987, 2001).

Self-leadership can be described as a set of self-influence strategies through which people control their own actions and thinking to reach personal and organizational goals (Manz, 1986; Manz and

Neck, 2004). Self-leadership strategies are usually grouped into three distinct categories, namely, behavior-focused strategies, natural reward strategies, and constructive thought strategies (Manz & Neck, 2004; Prussia, Anderson, & Manz, 1998; Manz & Sims, 1987). Despite the potential usefulness of self-leadership strategies in organizations, the majority of self-leadership research has been conceptual with only a few empirical studies examining the association between self-leadership and organizational outcomes (Neck and Houghton, 2006) especially the relationship between self-leadership and actual work performance. Furthermore, the majority of prior research investigating the effectiveness of self-leadership have narrowly focused on a single specific facet of self-leadership rather than the whole set of self-leadership strategies (Frayne & Latham,1987; Latham & Frayne, 1989; Frayne & Geringer, 2000). Indeed, we have found only two studies that examined the full conceptualized constellation of self-leadership behaviors and its relationship to performance outcomes. Prussia, Anderson and Manz's (1998) found that a general combination of self-leadership skills influenced self-efficacy perceptions which subsequently positively impacted academic performance. Another study by Stewart, Carson, and Cardy (1996) showed that a comprehensive training of behavior-focused, natural reward and constructive thought self-leadership skills was more effective for increasing self-directed behavior of low conscientious employees than high conscientious employees. In sum, while self-leadership theory states that a variety of self-leadership skills is essential for enhancing one's effectiveness in goal achievement (Manz & Neck, 2004), very little research has been done to examine whether the constellation of self-leadership behaviors influences work outcomes. To

address this issue, the first objective of this paper is to determine the relationship between a general

combination of self-leadership strategies on work outcomes such as performance and job satisfaction.

In addition to the lack of empirical studies establishing the linkage between a general

combination of self-leadership strategies and organizational outcomes, very little research has been

done to determine the boundary conditions that may enhance or undermine the effect of self-leadership

on work outcomes. Markham and Markham (1998, p.199) have raised the issue as to whether self-

leadership is "a universally applicable theory" that will work with all employees under all

circumstances" or a "contingency theory that best fits certain boundary conditions". It has been

suggested that work that give employees a high degree of autonomy and control over how the work is

done would influence the exercise of self-leadership strategies (Manz & Sims, 1994; Manz & Neck,

2004). For example, Slocum and Sims (1980) suggested that creative and non-routine work is more

appropriate for high level of self-influence than is routine work. Thus the second objective of this

study is to examine the boundary conditions that regulate the magnitude of the effects of self-

leadership on job outcomes. Specifically we examine the extent to which job autonomy experienced

by employees moderate the influence of self-leadership on work performance and job satisfaction.

To date the majority of self-leadership research has been conducted in the United States and as

such its development and supporting research reflect Western cultural values (Alves et al., 2006; Neck

& Houghton, 2006; Neubert & Wu, 2006). Calls for more empirical research to explore the

applicability of self-leadership theory at the non-western context (Neck & Houghton, 2006; Alves et

al., 2006) have led to a variety of efforts to study the generalization of self-leadership to non-western

cultures. For example, Ho and Nesbit (2009) have refined and extended Houghton and Neck's (2002)

self-leadership scale with the incorporation of social/related-based features associated with

collectivism and found that all self-leadership dimensions could be generalized to the Chinese

population. In a subsequent study, Ho and Nesbit (2010) demonstrated that the factor structure of the

modified self-leadership scale was equivalent across Chinese and Australian participants, suggesting

that the expanded theoretical components of self-leadership are relevant for both Eastern and Western

culture. In this study, we extend the internationalization of research into self-leadership by locating our

study in an Eastern work setting.

Theoretical Background and Hypotheses

Self-leadership and job performance

As previously stated, self-leadership is a self-influence process involving behavior-focused

strategies, natural reward strategies, and constructive thought strategies which individuals achieve the

self-motivation in an effort to reach their desired goals (Anderson & Prussia, 1997; Manz & Neck,

2004; Manz & Sims, 2001; Prussia et al., 1998). Behavior-focused strategies are designed to heighten

one's self-awareness in the pursuit of one's tasks, including those that are less attractive but necessary

for goal achievement (Manz & Neck 2004). Behavior-focused strategies include self-goal setting, self-

observation, self-reward, self-punishment, and self-cueing strategies. Self-goal setting involves the

process of setting challenging and specific goals leading to improved performance (Locke and Latham, 1990). Self-observation involves determining when, why, and under what conditions one engages in specific behaviors (Mahoney & Arnkoff, 1978; Manz & Sims, 1980). Self-reward consists of self-applying motivational reward imposed for goal achievement whereas self-punishment involves self-criticism leading to the elimination of undesirable behaviors. Self-cueing involves the activity of constructing environmental cues used for shaping desirable behaviors.

Behavior-focused self-leadership operates within the framework of cybernetic control theory originally developed in clinical psychology (Manz, 1986; Carver and Scheier 1981; Mahoney & Arnkoff, 1978; Cautela, 1969). According to the cybernetic control theory, an individual's self-regulation process is analogous to the operation of a mechanical thermostat. The thermostat senses the deviation between the current temperature and a given standard and signals appropriate action to reduce the discrepancy (Neck & Houghton, 2006). Similarly, individuals in organizations possess self-generated goals and standards, engage in self-evaluation processes (comparing the current performance level with the self-set standards) and self-administer rewards and punishment based on people's judgment about their success in reducing the performance discrepancy from existing standards or goals (Manz & Sims, 1980).

Natural reward strategies are designed to help a person focus on the inherently enjoyable aspects of task or activity (Manz, 1986; Manz and Neck, 2004). Natural reward strategies involves building more pleasant and enjoyable features into the tasks and focusing one's attention on the rewarding

aspect rather than the unpleasant features of the tasks (<u>Manz and Neck, 2004</u>; <u>Manz and Sims, 2001</u>).

Self-leadership's conceptualization of natural rewards is based primarily on the intrinsic motivation literature, particularly Deci and Ryan's (1985) self-determination theory. According to <u>Deci and Ryan (1985)</u>, the need for competence and the need for self-determination are the primary mechanisms that drive intrinsic motivation toward goal achievement. Self-leadership theory suggests that once self-leaders redesign their work activities to foster feelings of competence and self-determination, they would find natural enjoyment from performing the task, leading to higher task performance.

Constructive thought strategies focus on the formation of constructive thought patterns that can positively impact performance (Manz and Neck, 2004; Neck and Manz, 1992). Specific thought-oriented strategies include alternation of dysfunctional beliefs and assumption, visualizing successful performance, and positive self-talk. Thought self-leadership is derived primarily from Bandura's (1986, 1991) social cognitive theory which argues that human behavior is a function of reciprocal influences between a person's cognitions, the physical and social environment in which behaviour takes place and the behavior itself (Davis & Luthans, 1980). Thus, what people think and believe affects how they behave (Driskell, Copper & Moran, 1994; Neck and Manz, 1996). To summarize, three categories of self-leadership strategies discussed above are suggested to have positive impact on job performance.

Job performance is a broad and complex construct (Campbell, 1990), and can be assessed with objective measures of employee productivity and/or subjective performance evaluations. Objective

performance measures include production data (e.g. dollar volume of sales, units produced, number of errors…. etc), as well as employment data (accidents, absences, turnover). Objective measures of performance focus on outcomes or results of behaviors, capturing the effects of factors outside of employees' control which have an impact on performance results (Cascio, 1998). In contrast, supervisors' subjective performance measures, though subject to unreliability and bias (Bommer, Johnson, Rich, Podsakoff, & Mackenzie, 1995; Campbell, 1990), provide a means for a rater to consider factors outside of the employee's control when evaluating performance. Since both types of performance measures play a prominent role in key employment decisions, such as promotions, raises, and bonuses (e.g., Rynes, Gerhart, & Parks, 2005), it is important to understand whether the impact of self-leadership behaviors on performance ratings and objective performance measure. We propose to test the main effects of global measure of self-leadership behaviors on both types of performance measures.

Hypothesis 1: Self-leadership behaviors are positively related to supervisor performance rating.

Hypothesis 2: Self-leadership behaviors are positively related to objective work performance.

Self-leadership and job satisfaction

In addition to measures of performance it has been proposed that individuals practicing self-leadership may also experience greater job satisfaction (Neck & Manz, 1996; Houghton & Jinkerson, 2007), another variable of considerable interest in organizations. Job satisfaction can be defined as

"the pleasurable or positive emotional state resulting from the appraisal of one's job or job experience"

(Locke, 1976, p. 1300). As noted earlier, self-leadership is proposed to enhance progress towards

goals. Empirical evidence has shown that perception of goal progress and goal attainment is associated

with a person's subjective well-being (e.g. Emmons, 1986; 1989; Koestner, Lekes, Powers, &

Chicoine, 2002; Michalos, 1980; Politis, 2005).

In addition, natural reward self-leadership strategies promote a focus on the enjoyable feature

(intrinsic reward) of tasks that yield energizing emotions such as interest and excitement (Manz &

Neck, 2004). Based on self-determination theory (Deci & Ryan, 1985), focusing on the natural

rewards in a task may fulfill individuals' need of competence and self-determination, leading to higher

job satisfaction (Manz, 1986; Deci & Ryan, 2000). Indeed, Burton, Lydon, D'Alessandro, and

Koestner (2006) found that intrinsic self-regulation predicted greater positive affect.

We also expect that constructive thought self-leadership strategies which are designed to reduce

dysfunctional thought processes may positively affect job satisfaction (Houghton & Jinkerson, 2007).

According to Judge and Hulin (1993), dysfunctional thoughts lead to lower job satisfaction as they

undermine individual's self-worth and make them more vulnerable to unhappiness and depression

(Kuiper & Olinger, 1986; Kuiper, Olinger, & Swallow, 1987). Judge and Lock's (1993) empirical

study also found that dysfunctional thought processes have negative impact on job satisfaction, and

concluded that, "well-being and job satisfaction may be increased by reducing the degree to which

employees think dysfunctionally" (p. 487). Other empirical research also support the view that

constructive thought strategies could enhance employees' job satisfaction (Houghton & Jinkerson, 2007; Neck & Manz, 1996).

All of the above research point to the conclusion that individuals engaging in behavior-focused, natural reward, and constructive thought strategies are more satisfied with their jobs. However, while studies to date have examined only the effect of individual components of self-leadership on job satisfaction, we suggest that the full constellation of self-leadership strategies should be associated with positive job satisfaction.

Hypothesis 3: Self-leadership behaviors are positively related to job satisfaction.

The moderating role of job autonomy

Although we hypothesized that self-leadership is positively associated with job performance and job satisfaction, these relationships are likely moderated by the extent that employees are able to exercise their self-leadership strategies. Specifically we argue that employee perceptions of their job autonomy may moderate the influence of self-leadership on job performance and job satisfaction.

Mischel's (1977) situational strength argument suggests that low-autonomy jobs create considerable constraints on employees as they "lead everyone to construe the particular events, induce uniform expectancies regarding the most appropriate response pattern, provide adequate incentives for the performance of that response pattern and require skills that everyone has to the same extent" (p.347). Thus, low job autonomy inhibits a person from behaving in one's desired ways. In contrast, in

high-autonomy jobs, individuals have substantial freedom to determine what behaviors to undertake.

Thus greater decision latitude in high-autonomy jobs offers self-leading individuals more

opportunities and freedom to express their self-leadership tendency such as choosing their own goals,

rewarding themselves for goal achievement, or redesigning their jobs aimed for building more

enjoyable features into the tasks. Thus, individual differences in self-leadership characteristics are

more likely to influence individuals' job satisfaction and work performance under high job autonomy.

We therefore expect a stronger relationship between self-leadership and performance/job satisfaction

for individuals who reported greater autonomy than those who experienced low level of job autonomy.

Accordingly, we proposed the following:

Hypothesis 4a: Job autonomy moderates the relationship between self-leadership behaviors and supervisor performance rating, such that the relationship is stronger under high job autonomy than under low job autonomy.

Hypothesis 4b: Job autonomy moderates the relationship between self-leadership behaviors and objective work performance, such that the relationship is stronger under high job autonomy than under low job autonomy.

Hypothesis 4c: Job autonomy moderates the relationship between self-leadership and job satisfaction, such that the relationship is stronger under high job autonomy than under low job autonomy.

METHODS

Sample and Data Collection

The respondents for this study were employees of a variety of organizations and occupations in Hong Kong and Mainland China recruited using a modified snowball approach (Bryman & Bell, 2007). Using contacts, known to the first author, a number of organisations in Hong Kong were approached and asked if they would be willing to participate in the study. These contacts were asked to nominate contacts in other organization who might be interested in the research. Thus the participants came from a variety of companies and industries, although all were ethic Chinese. One group of respondents consisted of 182 insurance sales agents from five insurance companies in Hong Kong. Another group consisted of 80 engineers from different organizations who were members of the Institution of Engineers in Hong Kong. A third group of respondents consisted of 61 respondents from one public transportation company in Hong Kong. A fourth group had 89 assembly line workers from two manufacturing firms in Mainland China. For the whole sample, sixty-two percent of the employees were male, the average age was 34.3 years (S.D. = 9.2) and the average job tenure was 4.92 years (SD = 6.2).

Once we had arranged agreement with the organization for participation in the study we negotiated with the human resources managers at each company to elicit their help in distributing questionnaires to employees. These employees received a questionnaire package containing a cover

letter clearly explaining the purpose of the research and stating that participation was voluntary and that results were confidential. The survey contained questions regarding self-leadership behaviors, job autonomy, and job satisfaction. Completed questionnaires were returned directly to the researchers through a self-addressed, stamped envelop.

Subordinates were asked to forward a second questionnaire directly to their immediate supervisors. This questionnaire contained questions regarding the general job performance of their subordinates. Furthermore, those "supervisor" questionnaires that were distributed to the respondents from insurance industries included one more question seeking objective sales performance of their subordinates. Thus the study of Hypothesis 2, examining the relationship between self-leadership behaviors and objective work performance, is limited to a sub-group of the sample, namely the insurance sales agents. The matching surveys were initially distributed to 560 dyads. We received 412 completed and usable matching pairs, which represented an overall response rate of 73%. Of the insurance sales agents we received objective performance data on 153 agents.

Translation of Questionnaire Items

In order to use pre-validated measures, the questionnaire items were originally written in English. We followed Brislin's (1980) translation/back-translation procedure to create a Chinese version of the questionnaire. The survey items were translated into Chinese by the first author who is bilingual in

Chinese and English. Next, we obtained a back-translation from another bilingual academic. Finally,

another academic examined the original version in English and the back-translated English version

and found no back-translation discrepancies.

Measure

Self-leadership. Self-leadership was assessed using the modified Self-leadership Questionnaire

(MSLQ) developed by Ho and Nesbit (2009). The MSLQ consists of 38 items describing various

behaviors associated with self-leadership and participants use a 5-point Likert-type scale (1 = not all

accurate; 2 = somewhat accurate; 3 = a little accurate; 4 = mostly accurate; 5 = completely accurate) to

indicate how accurate each behavior describes them.

The dimension of behavior-focused strategy consists of five subscales which include self-goal

setting (4 items, e.g., "I consciously have goals in mind for my work efforts), task and relation-based

self-observation (4 items); self-reward (3 items), self-punishment (4 items), and self-cueing (2 items).

Natural reward strategy involves two subscales: (1) Task-based Natural Reward (4 items, "I think that

the enjoyment gained from work is more important than external rewards.") and (2) Relation-based

Natural Reward (4 items). Constructive thought strategy include four subscales which are: Self-talk (3

items, e.g., "When I'm in difficult situations I will sometimes talk to myself (out load or in my head)

to help me get through it."); Individual-oriented Evaluation of Beliefs and Assumptions (5 items);

Social-oriented Evaluation of Beliefs and Assumptions (3 items); Visualizing Successful Performance

(2 items). (For full details of the whole questionnaire, please refer to Ho and Nesbit, 2009).

Job autonomy. Job autonomy was assessed with Morgeson and Humphrey's (2006) nine-item scale.

A sample item is "the job allows me to make my own decisions about how to schedule my work."

Responses were given on a 6-point response scale on which 1 = *strongly disagree* and 6 = *strongly*

agree.

Job satisfaction. Four items were used to measure job satisfaction developed by Manz (1981). A

sample item is "my work gives me a sense of satisfaction". Participants responded using a response

scale ranging from 1 (strongly disagree) to 6 (strongly agree).

Supervisors' performance rating. Five items were used to measure job performance. Four out of 10

items developed by Goodale and Burke (1975) were used to measure four performance dimensions

related to the reliability, adaptability, productivity, and quality of work. Furthermore, one self-

developed item was used to measure the dimension of initiative. The supervisor was asked to rate their

subordinates on each of these five performance dimensions on a scale from 1 (poor performance) to 4

(average performance) to 7 (excellent). A sample item is "this subordinate produces a quantity of work

that meets the established standards".

Objective work performance. Objective work performance was measured in terms of the annual

premium payment for the insurance policy sold in the past 3-month period. Objective work

performance data were collected from those supervisors from five insurance companies in Hong Kong which have similar insurance products, product variety, sales territory, organization structure and policy.

Control Variables

Demographic variable. We controlled for organizational tenure (measured in years), gender (females = 0, males = 1), and age in our analyses. Previous research has shown these variables to be related to the outcome variables of work performance and job satisfaction (e.g. Hom & Griffeth, 1995; Spector, 1997; Sturman, 2003).

Results

Preliminary Analyses

Confirmatory factor analyses. Prior to testing the hypotheses, we conducted a series of confirmatory factor analyses to examine the construct validity of self-leadership and discriminant validity of our measures. Prior studies have provided empirical support for the second-order hierarchical factor structure of self-leadership. In this model, the first-order factors consisted of three self-leadership dimensions (behavior-focused, natural reward, and constructive thought), which were indicated by the corresponding parcels (composite indicators). Following the item parceling method recommended by Bagozzi and Edwards (1998), items within each subscale were summed and averaged to create five composite indicators for the behavior-focused dimension, four composite

indicators for the constructive thought dimension, and two composite indicators for natural reward dimension. The second order factor was the global self-leadership factor, which was indicated by three first order factors (self-leadership dimensions). Results of our confirmatory factor analysis supported the second-order hierarchical structure of self-leadership (GFI = .93; CFI = .91; IFI = .91; SRMR = .45; RMSEA = .06). We concluded that the items used in our study measured a single, global construct having three dimensions. We proceeded in our analysis using a single scale to represent self-leadership behaviors.

In order to examine the distinctiveness of the study variables, we conducted CFA to distinguish four key variables in our model, namely self-leadership, job autonomy, job satisfaction, and job performance. To reduce the number of parameters in the structural equation modeling, the item parceling method recommended by Bogozzi and Edwards (1998) was used on the variable of job autonomy as it consisted of more than seven items. Job autonomy was modeled using three parcels, with items assigned to each parcel randomly. Next, we compared the model fit of two hypothetical models. Specifically, the first model allowed all parcels of self-leadership and job autonomy and all items of job satisfaction and job performance to load on one factor. The second was a four-factor model with the items and parcels assigned to the four corresponding variables. Results showed that the four-factor model yielded a much better fit than one-factor model (four-factor model: GFI = .88; CFI = .92; IFI = .92; RMSEA = .06; SRMR = .06. One-factor model: GFI = .49; CFI = .38; IFI = .38; RMSEA = .18; SRMR = .17)

Common Method Variance. Because we collected the data for the measures of self-leadership, job autonomy and job satisfaction from the same participants at the same time, a Harmon one-factor test (Podsakoff & Organ, 1986) was used to determine the impact of common method variance. Items of self-leadership, job autonomy and job satisfaction were factor analyzed using a principal components extraction with varimax rotation. Using the eigenvalue greater than 1 as cutoff criterion, results indicated the presence of three factors with the first factor explaining only 21 per cent of the variance while the three factors in total explained 56 per cent of the variance. Although we acknowledged that common method variance may be present in our data, this procedure suggested that common method variance was not a serious problem in this study.

Descriptive Statistics. Table 1 presents means, standard deviations, and zero-order Pearson correlations among all variables in this study. As expected, self-leadership was positively and significantly related to the outcomes variables of supervisor performance rating (r=.20), objective work measure (r = .20) and job satisfaction (r = .31).

Insert Table 1 about

here

Tests of Hypotheses

We used hierarchical regression analysis (HRA), to test whether self-leadership behaviors is positively related to supervisor performance rating (H1), objective work performance (H2) and job

satisfaction (H3) and whether job autonomy would moderate these relationships (H4a; H4b; H4c).

Following the method outlined by Aiken and West (1991), we first centered the self-leadership scores and job autonomy scores around their respective means. Next, we calculated interaction scores by multiplying the mean centered self-leadership scores and job autonomy scores. The centered variables were used in all analyses in order to reduce multicollinearity between the predictor variables and their associated interaction terms. As shown in Table 2, separate analyses were conducted on each of the three dependent variables and each HRA consisted of four steps. The control variables were entered in the first step. The centered independent variable of self-leadership was entered in the second step, and it was in this step that we tested Hypotheses 1, 2 and 3. The centered job autonomy and the interaction term were entered in the third and the fourth step respectively. Step 2 in Table 2 shows that self-leadership was positively and significantly related to supervisor performance rating (β= .21, p < .05, $\triangle R^2$ = .04), objective work performance (β= .18, p < .05, $\triangle R^2$ = .03) and job satisfaction (β=.30, p <.01, $\triangle R^2$ =.08). Thus, hypotheses 1, 2, and 3 were supported.

Moreover, the self-leadership*job autonomy interaction was significantly related to supervisor performance rating (β= .08, p < .05, $\triangle R^2$ = .01), objective work performance (β= .17, p < .05, $\triangle R^2$ = .02) and job satisfaction (β= .10, p < .05, $\triangle R^2$ = .01).

Insert Table 2 about here

To determine whether the forms of the interactions matched those suggested by Hypotheses 4a, 4b, and 4c, we needed to graphically illustrate the interactions and tested the simple slopes for respondents with high job autonomy (one standard deviations above the mean) and respondents with low job autonomy (one standard deviation below the mean) (Aiken & West, 1991). In support of hypothesis 4a, we found that self-leadership was more positively related to supervisor performance rating under high job autonomy (simple slope test: $\beta = .63$, $p < 0.01$) than under low job autonomy (simple slope test: $\beta = .28$, n.s.) Furthermore, in support of hypothesis 4b, we found that self-leadership was more positively related to objective work performance under high job autonomy (simple slope test: $\beta = .18$, $p < 0.05$) than under low job autonomy (simple slope test: $\beta = -.03$, n.s.). In the same vein, and in line with Hypothesis 4c, simple slopes analysis indicated that self-leadership related more strongly to job satisfaction with individuals with high job autonomy ($\beta = .41$, $p < 0.01$) than for individuals with low job autonomy ($\beta = .07$, n.s.). Figure 1, 2, and 3 graphically depicts these findings.

Insert Figures 1, 2 and 3 about here

Discussion

In this study, we set out to examine the direct relationship between self-leadership behaviors and work performance (Hypothesis 1 & 2) and job satisfaction (Hypothesis 3) and how job autonomy moderates this relationship (Hypothesis 4a, 4b and 4c). Our findings supported all of the hypotheses

and suggested several conclusions. First, as hypothesized, the present findings showed that self-leadership behaviors were positively related to performance indicators of supervisor ratings and objective work performance as well as job satisfaction. Second, the moderating effects of job autonomy on the relationship between self-leadership and these work outcomes were supported.

Theoretical Implications

These findings offer several important theoretical implications. First, the majority of previous empirical research focused on examining the relations between a narrow specific dimension of self-leadership and subsequent performance and work attitudes. Whether a broader conceptualization of self-leadership behaviors is associated with some important organizational outcomes remains largely unexplored. We contribute by examining whether a general combination of self-leadership strategies has positive impact on job performance and job satisfaction. As expected, those who have a greater tendency to engage in self-leadership strategies are more likely to perform well and are more satisfied with their jobs. In addition, we gathered both subjective performance rating and objective work performance data from the supervisors in one study. Given the scarcity of research examining the impact of overall self-leadership behaviors on job performance, our findings are noteworthy as they confirmed that self-leadership plays a vital role in enhancing two different aspects of job performance,

especially the objective performance indicator that has never been studied in previous empirical research.

Second, our findings contribute to the literature on testing the generalizability of self-leadership theory in other non-western culture. To date, the linkages between self-leadership behaviors and work performance and job satisfaction have been tested mainly in the United States. Our results provide evidence that such linkages can be generalized to the Chinese organization settings where existing social norms and role expectations for employee behaviors are different from American organizations.

Third, our study examined the boundary conditions of the usefulness of self-leadership strategies. Our findings highlight the moderating role of job autonomy in explaining when self-leadership behaviors lead to workplace performance and job satisfaction. For example, we found that the positive relationships between self-leadership and three outcome variables were strongest for those employees reporting high level of job autonomy. Additionally, when job autonomy was low, the impact of self-leadership on two measures of job performance and job satisfaction was not significant. A possible explanation for these findings can be found in situational strength theory. Low-autonomy jobs are strong situation with considerable constraints, plus inhibiting employees from utilizing their self-leadership skills. These situations thereby reduce level of self-motivation for goal achievement and job satisfaction for those high on self-leadership behaviors. On the other hand, high-autonomy jobs

provide employees more opportunities to express their self-leadership tendency and therefore increase their job satisfaction and self-motivation for upholding good performance.

Managerial Implications

Our findings that self-leadership contributes to performance and job satisfaction prediction have important practical implications. First, with regard to employee selection, managers who hire employees with high self-leadership tendency are able to perform better and enjoy their jobs more than those with lower self-leadership tendency. As such, self-leadership skill may become an important applicant attribute that hiring managers would actively measure for their screening process in selection. A second finding is that the effectiveness of employee's self-leadership behaviors depends on how much autonomy employees have in their jobs. Given the increasing autonomy in work roles related to changing work environments self-leadership is likely to become a central employment issue. Related to this increasing importance of self-leadership since self-leadership are learned behaviors that are amenable to change (Manz, 1986), training inventions focused on enhancing existing employees' self-leadership behaviors should be considered.

Limitation and Future Directions

This study has a number of limitations. First, the use of cross-sectional data means that cause and effect relationships cannot be inferred from the findings reported here. The results are vulnerable to opposite or bi-directional relationships as we cannot rule out the possibility that poor performance and

job satisfaction may lead to a reduction in self-leadership behaviors. An argument against such reversed causality is that theory and some longitudinal research have demonstrated that training in self-management and constructive thought self-leadership strategies are effective for improving job attendance (Frayne & Latham, 1987; Latham & Frayne, 1989), sales performance (Frayne & Geringer, 2000), mental performance and job satisfaction (Neck & Manz, 1996). Nevertheless, future research should adopt a longitudinal design to affirm the causal relationship.

A second limitation involved the collection of self-reported ratings of self-leadership behaviors and job satisfaction at the same point in time from the same source. Therefore, common method bias may be an issue in this study. Although we have demonstrated that it is not serious problem in the current study, potential rating biases could be reduced by collecting data by means of two separate questionnaires at different points in time.

Third, we did not consider the effects of leadership styles of supervisors. Supervisors with different leadership styles may encourage employees' self-leadership behaviors differently, and thereby affect employees' work outcomes. Thus future research could investigate how individual differences in supervisors' leadership style influence the outcomes of employees' self-leadership behaviors.

Fourth, in this study, we investigated the association between self-leadership and three outcomes variables which included job satisfaction, performance rating and objective sales performance.

Although these outcomes are important, future researchers should consider incorporating other additional outcome variables into their studies such as organization commitment, turnover intention, and creative work performance. Self-leadership theorists propose that individuals who influence themselves towards their self-set goals often develop a sense of ownership over their tasks and work processes (Manz & Sims, 2001). As a result, self-leading employees may demonstrate higher levels of commitment to their tasks and organizations and have less intention to leave the organizations than individuals who are not engaging in self-leadership. Likewise, individuals practicing self-leadership may experience greater feelings of control and autonomy which is often identified as an essential component of individual creativity (DiLiello & Houghton, 2006). On the other hand, individuals who have insufficient self-leadership skills may become dependent on getting guidance from the traditional leaders – their supervisors, leading to decreased level of creative work performance.

In summary, we believe that our study makes an important contribution to the self-leadership literature. This is the first study which found that the utilization of the whole set of self-leadership strategies are positively related to supervisor performance rating, objective work performance and job satisfaction in Chinese context. Since self-leadership are learned behaviors that are amenable to change, organizations are suggested to use training interventions of self-leadership skills to enhance job performance and job satisfaction of their workforce. Furthermore, our findings also suggest that the effectiveness of employee's self-leadership behaviors depends on how much autonomy employees have on their jobs. In order to encourage those self-leading individuals to persist in improving their

work performance, organizations and supervisors should consider taking steps to increase employees'

discretion on determining work schedule and work methods.

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TABLE 1

Means, Standard Deviations, Correlations and Reliabilities

Variable	Means	s.d.	1	2	3	4	5	6	7	8
1. Gender[a]	1.40	.52	-							
2. Age	2.41	1.02	-.14**	-						
3. Tenure	4.74	6.09	-.21**	.59**	-					
4. Self-leadership	3.47	.46	.05	-.05	-.04	(.80)				
5. Job autonomy	4.39	.90	.07	-.05	-.10*	.37**	(.94)			
6. Supervisor performance rating	4.51	1.08	.04	-.01	0.06	.20**	.07	(.90)		
7. Objective performance measure[b]	54481	91690	-.04	.04	.14	.20*	.28**	.26**	-	
8. Job satisfaction	4.38	.92	-.03	.10*	0.07	.31**	.51**	.15**	.29**	(.90)

N = 412. Reliability estimates in parentheses.

* $p<.05$; ** $p< .1$

[a] Gender was coded "1" for male and "2" for female

[b] Data collection for the objective performance measure was only available for the sub-sample of this study which consisted of 153 insurance sample agent in Hong Kong. Thus, the sample size for all correlations between objective performance measure and other variables is 153 rather than 412 (whole sample size).

TABLE 2

Results of Hierarchical Regression Analyses

| Steps and Variables	Supervisor Performance Rating (N = 412)				Objective Performance Measure (N = 153)[a]				Job Satisfaction (N = 412)			
	1	2	3	4	1	2	3	4	1	2	3	4
1. Control variables												
Gender	.06	.05	.05	.05	-.06	-.05	-.02	-.02	-.02	-.04	-.05	-.05
Age	-.08	-.08	--.08	-.08	-.02	-.01	-.01	-.00	.1	.10	.10	.10
Tenure	.12*	.13*	.13*	.12*	.16	.13	.11	.09	.01	.01	.06	.05
2. Independent variable												
Self-leadership (A)		.21**	.21	.21*		.18*	.10	.02		.30**	.13**	.13**
3. Moderator												
Job autonomy (B)			.01	.01			.23*	.26**			.47**	.48**
4. Interaction: A*B				.08*				.17*				.10*
Adjusted R²	**.01**	.05**	.05*	.06*	.00	.03*	.07	.09*	.01	.09	.28	.29
△ R²		.04**	.00	.01*		.03*	.04*	.02*		.08**	.19**	.01*

Note: The coefficients are standardized ß weights.

p <.05; ** *p* < .01

[a] Data collection for the objective performance measure was only available for the sub-sample of this study which consisted of 153 insurance sample agent in Hong Kong. Thus, the sample size is 153 rather than 412 (whole sample size).

FIGURE 1

Effects of Interaction of Self-leadership and Job Autonomy on Supervisor Performance Rating
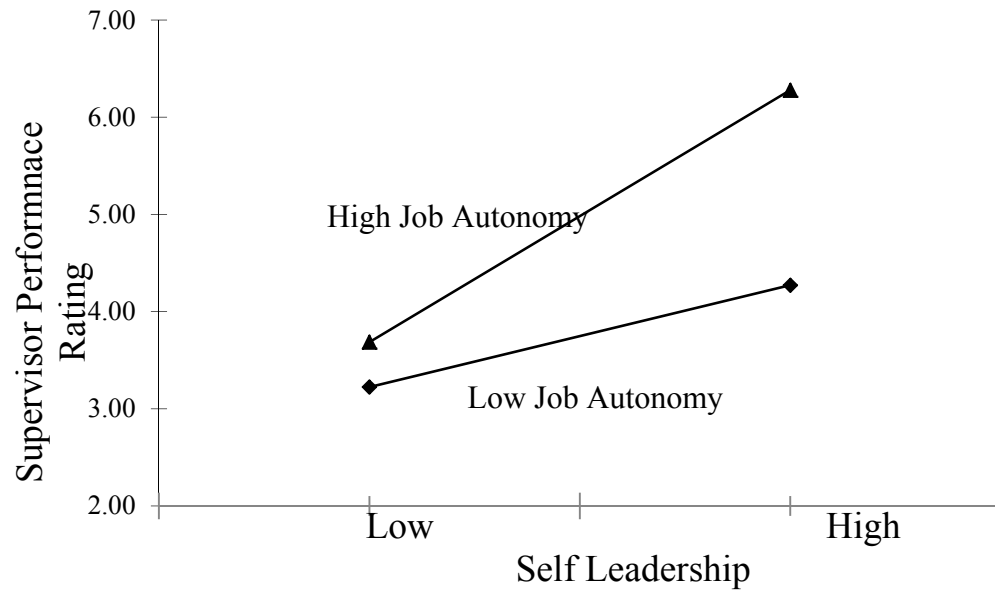
FIGURE 2

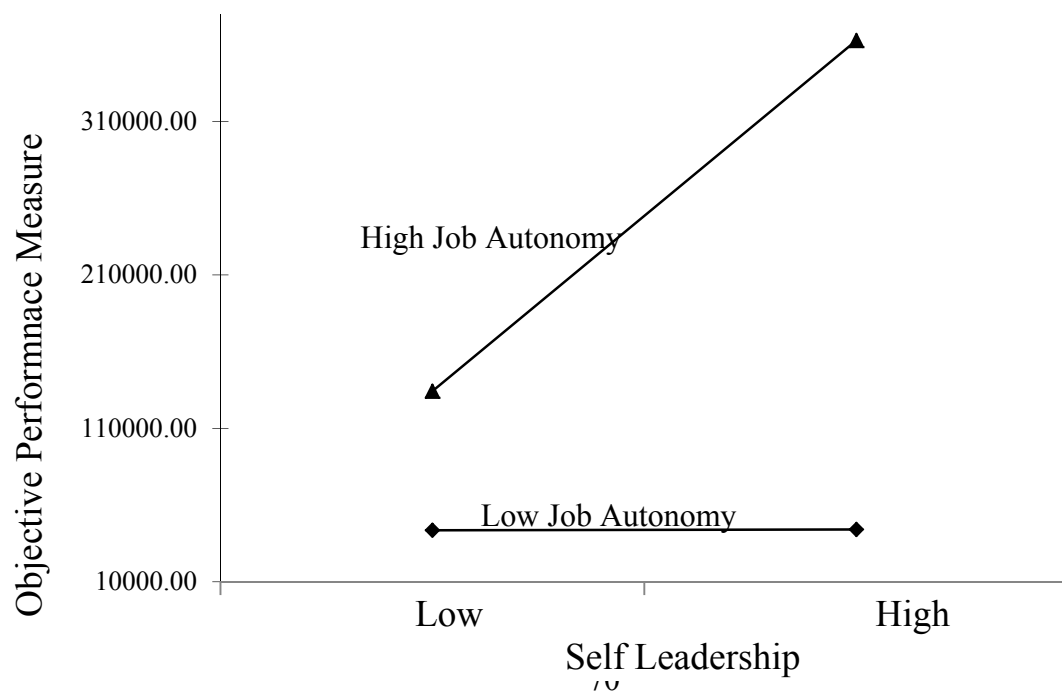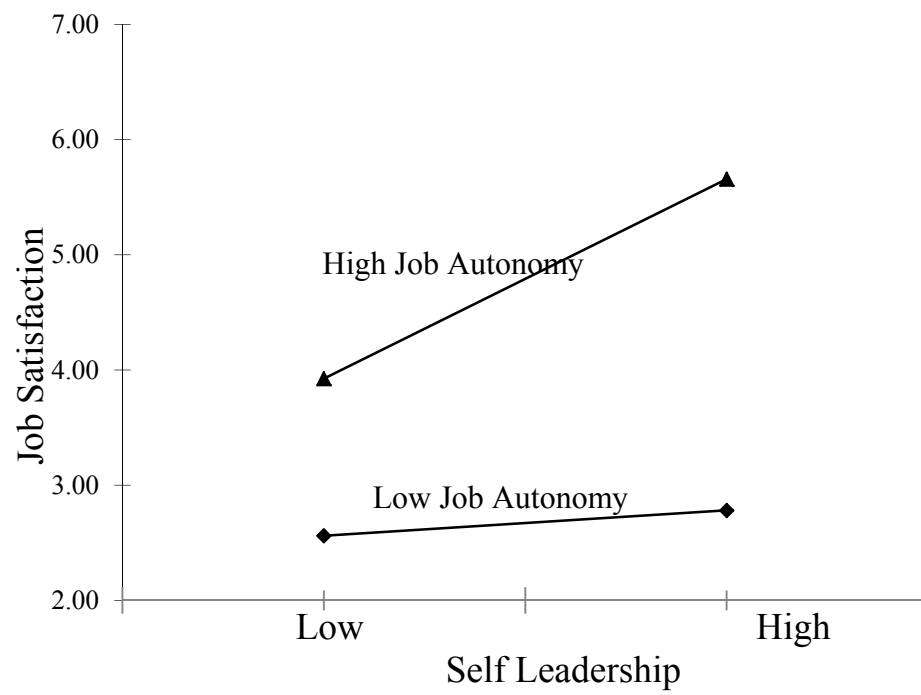**Effects of Interaction of Self-leadership and Job Autonomy on Objective Performance Measure**

FIGURE 3

Effects of Interaction of Self-leadership and Job Autonomy on Job Satisfaction

Appendix E

A Modified Self-leadership Questionnaire

MSLQ Items and Their Respective Factors

Item   Visualizing successful performance items
1. I use my imagination to picture myself performing well on important tasks.
2. I visualize myself successfully performing a task before I do it.

Self-goal setting items
3. I consciously have goals in mind for my work efforts.
4. I work toward specific goals I have set for myself.
5. I think about goals that I intend to achieve in the future[a].
6. I write specific goals for my own performance.

Self-talk items
7. Sometimes I find I'm talking to myself (out loud or in my head) to help me deal with difficult problems I face.
8. When I'm in difficult situations I will sometimes talk to myself (out load or in my head) to help me get through it.
9. Sometimes I talk to myself (out loud or in my head) to help me get through it.

Self-reward items
10. When I do an assignment especially well, I like to treat myself to some thing or activity I especially enjoy.
11. When I do something well, I reward myself with a special event such as a good dinner, movie, shopping trip, etc.
12 When I have successfully completed a task, I often reward myself with something I like.

Self-punishment items
13. I tend to get down on myself in my mind when I have performed poorly.
14. I tend to blame myself when I have not done well on a task.
15. I feel guilty when I perform a task poorly.
16. I sometimes feel displeasure with myself when I have not done well.

Task-based natural reward items
17. My thinking focuses more on the things I like about actually doing my work than on benefits I expect to receive (selected one)
18. I think that the enjoyment gained from work is more important than external rewards.
19. I try to get enjoyment in the work process rather than in the benefit I plan to gain.
20. I seek out activities in my work that I enjoy doing.

Relationship-based natural reward items

21. I try to think of the pleasure obtained from fitting myself in with my classmates/team members I work with.
22. I focus on the good feeling I gain by working harmoniously with the classmates/team members.
23. I find my own favorite ways to meet my team members' needs.
24. I think of the enjoyment I gain from helping classmates/team members reach their goals.

Task and relationship-based self observation items

25. I usually examine how well I'm doing at school.
26. I am usually aware of how well I'm doing as I perform an activity
27. I keep track of how well I fulfill the expectation of my supervisor/team members.
28. I am usually aware whether I could adapt to the expectation of my supervisor/team members when I perform an activity.

Individual-oriented evaluation of beliefs and assumption items

29. I evaluate whether I have any dysfunctional thinking whenever I encounter a difficult situation.
30. I will evaluate my ways of thinking to see if it exerts any negative impacts on my jobs.
31. I try to evaluate the consequences of my negative thinking.
32. I review whether my judgment has been too negative when facing problems .
33. I try to mentally evaluate the accuracy of my own beliefs about situations I am having problems with.

Social-oriented evaluation of beliefs and assumption items

34. When I differ from others' opinions, I try to modify my thinking to avoid conflicts so as to maintain harmony.
35. When I have conflicts with my colleagues/team members I evaluate my thinking to see if there is anything wrong.
36. I examine whether my thinking can fit in with the opinions of my colleagues and team members

Self-Cueing items

37. I use written notes to remind myself of what I need to accomplish.
38. I use concrete reminders (e.g. notes and lists) to help me focus on the things I need to accomplish.

Appendix F

Appendix F of this thesis has been removed as it may contain sensitive/confidential content