Conceptual background and the development of Service Leadership Knowledge Scale

Daniel TL Shek[1-6],*, PhD, FHKPS, BBS, SBS, JP, Xiaoqin Zhu[1], PhD, and Alex YF Zhu[1], PhD

[1]Department of Applied Social Sciences, The Hong Kong Polytechnic University, Hong Kong, PR China
[2]Centre for Innovative Programmes for Adolescents and Families, The Hong Kong Polytechnic University, Hong Kong, PR China
[3]Department of Social Work, East China Normal University, Shanghai, PR China
[4]Kiang Wu Nursing College of Macau, Macau, PR China
[5]Hong Kong Institute of Service Leadership and Management Limited, Hong Kong, PR China
[6]Division of Adolescent Medicine, Department of Pediatrics, Kentucky Children's Hospital, University of Kentucky College of Medicine, Lexington, Kentucky, USA

* *Correspondence:* Daniel TL Shek, PhD, FHKPS, BBS, SBS, JP, Associate Vice President (Undergraduate Programme), Chair Professor of Applied Social Sciences and Li and Fung Professor in Service Leadership Education, Department of Applied Social Sciences, The Hong Kong Polytechnic University, Hunghom, Hong Kong, PR China. E-mail: daniel.shek@polyu.edu.hk

Abstract

Knowledge plays a key role in shaping behavior in human beings. Leadership knowledge has been extensively studied for its contribution to productivity at both individual and organizational levels. With the service industries rooted as the key to the success of Hong Kong's economy, an appropriate service leadership knowledge framework should be developed based on the demand for leaders in the modern service economies. This paper introduces the conceptual background of the Service Leadership Theory, and how Service Leadership Knowledge Scale was developed and validated based on the basic knowledge points under the Service Leadership Theory.

Keywords: Conceptual background, service leadership knowledge scale, development

Introduction

Knowledge refers to one's awareness of an objective, related processes, and how to do something (1). It is widely believed that people's previous experience and knowledge shape not only people's judgement and attitudes but also the actual behaviors (2). For example, people's level of environmental knowledge including environmental responsibility (3) and ecological awareness (4) was found to be associated with their ecological consumer behaviors, such as consumption, reuse and willingness to pay more for ecological products. In a systematic review (5), the importance of cardiac patients' knowledge was highlighted where patients' level of knowledge about cardiac care facilitates the health behavior change such as participating in physical activities, healthier dietary habits and smoking cessation. Moreover, increasing financial knowledge was a means of increasing people's responsible credit card use behavior (6).

Given the influence of knowledge on human behaviors in many fields, numerous theorists have explored the way in which knowledge influences behavior. For example, the mediated role of attitude has been emphasized. The Knowledge-Attitude-Behavior model proposes that accumulation of knowledge can motivate changes in attitude, thus further lead to behavioral changes (7). The theory of planned behavior suggests that subjectively held information determines certain behavior (8). Besides, the process of putting knowledge into action is considered worthy of attention. In the information-motivation-behavioral skills model, knowledge and motivation jointly influence behavior to the equivalen extent throught the mediation of developing behavioral skills (9). Knowledge-to-action cycle suggests knowledge phase can influence action phase at any point, and the process of translating knowledge to behavior is an iterative cycle in which knowledge and behavior update themselves anytime through dynamic interactions (10).

Influence of leadership knowledge on leadership behavior

As an important form of human behavior, leadership behavior is affected by leadership knowledge as well. Leadership knowledge includes three dimensions. First, leaders have to be equipped with hard leadership knowledge, which can be defined as a series of basic knowledge concerning managing different kinds of resources in organizations, including human resources (11), information resources (12), and financial resources (13). Second, leaders are expected to have soft leadership knowledge, which can be defined as the knowledge used to establish emotional connections in a team. This form of knowledge includes how to build relationships with others, how to construct effective collaboration and how to improve management environment (14). Third, an excellent leader needs to accumulate adequate or a very high level of leadership content knowledge, which was purposed and conceptualized by Stein and Nelson (15) as the technical or academic related knowledge in the industrial field. In other words, leaders are expected to be equipped with knowledge and technical skills closely related with industries

before constructing and strengthening leadership among subordinates.

Leadership knowledge serves as a unique window to look inside the science of organizational behavior and has been found to exert influence on leadership behavior at the individual and organizational levels. At the individual level, Weitz and colleagues (16) emphasized the role of leadership content knowledge and suggested that content knowledge of service providers in understanding their customers may change the directions of their behavior towards a more effective way. Similarly, Yammarino and colleagues (17) demonstrated that basic management knowledge, soft leadership knowledge like perspective-taking, creative problem solving, and social judgment skills and leadership content knowledge related with industries all positively directed management behaviors, including assessing a solution, identifying limitations, making action plans, and organizing supporting resources as input to management activities. At the behavioral outcome level, by surveying 102 teams in hotel properties in the United States, Srivastava and colleagues (18) showed that leadership content knowledge and self-efficacy positively predicted service performance.

Several theoretical proposals can be utilized to explain how leadership knowledge as a complex management input can be connected to positive management behavior and outputs at the individual level. For instance, leadership knowledge as a general cognitive capability may have positive effect on leadership behavior through the mediation of improving positive management attitude, increasing self-efficacy and strengthening administrative behavioral control, the theoretical foundation of which is supported by the model of planned behavior (19). The extended model of the planned behavior adds another two likely pathways connecting leadership knowledge to leadership behavior through self-identity and affective self-beliefs (20). Similarly, based on the theory of reasoned action, leadership knowledge can impact on leadership behavior through shaping the positive attitude and positive subjective norms (21). The similar technology model also supports the role of leadership knowledge in directing positive management behaviors (22). In this model, leadership content knowledge as an external force motivates leaders to evaluate the usefulness and

feasibility of purposed management plans, which further promotes positive leadership behavior through the effect on positive behavioral intentions (22).

At the organizational level, hard leadership knowledge improves the capacity of transforming resource into productivity; soft leadership knowledge spurs the potential of teams and increases the motivation of its members, while leadership content knowledge helps leaders to expose organizations into external opportunities for development (23). These mechanisms suggest a positive association between leadership knowledge and favorable organizational behavior and outcome. In line with this notion, soft leadership knowledge was proven critical to the success of organizations in terms of the performance of workers based on qualitative analysis in the study of Pearce and Manz (24). In addition, with a sample of 144 U.S. employees in a network of university libraries, it was found that leadership content knowledge positively predicted organizational citizenship behaviors (25). With a sample of 710 nurses in the South Korea, Lin and Hsiao (26) found leadership content knowledge and trust to subordinates were positively related to the organizational citizenship behaviors. Similarly, with a sample of industrial companies from four innovative industries in Spain, hard leadership knowledge and leadership content knowledge were found to promote organizational behavior and innovation through the effect of positive management practice (27).

As shown, a majority of pervious empirical studies connecting different types of leadership knowledge and leadership behavior (and behavioral outcomes) actively examined the role of leadership content knowledge, and only a very small part of them aimed to investigate the importance of soft leadership knowledge. With the global transformation in economic structure from the manufacture economy to the service economy, the framework of leadership knowledge needs to be redefined. It needs to be transformed from a framework focusing on hard leadership knowledge and leadership content knowledge, which best responded to the production and cooperative mode in the manufacture economy, to the one emphasizing on soft leadership knowledge, which can maximize the effectiveness and quality of service in the service economy. When specifying the leadership in modern service economy, Chung

and Elfassy (28) proposed the Service Leadership Theory, which displays twelve dimensions of positive attributes with which an effective service leader should be equipped. Under the framework of the Service Leadership Theory, the basic knowledge points are summarized and presented in section below.

Service Leadership Knowledge

Based on Service Leadership Theory, service leadership knowledge can be summarized in six domains. These domains are "general description of Service Leadership Theory," "three realms of service leadership," "everyone can be a leader," "Principle $E = MC^2$," "manufacturing versus service economies in contemporary world," and "distinction of Service Leadership Theory and other leadership theories." Knowledge points in these six domains are briefly outlined below.

General description of service leadership theory

Unlike the old paradigm of leadership where the relationship is hierarchical and the leader only places orders to those who are in lower positions for self-serving purpose, Service Leadership Theory emphasizes the importance of satisfying not only the needs of oneself but also others and the systems such as community, society, and environments (29). The traditional concept of "leader" is signified with power and pride, and the leader is likely to be served by others instead of the opposite. To an extreme extent, the leaders might use their power to scarify others' needs and benefits to fulfill their own needs. Such action is considered as unethical. In order to be an ethical service leader, one should work with others with care, value their wellness and benefits as much as oneself, and encourage to transcend self-interest to serve others and the system. According to Shek and colleagues (30), good service leaders are those who influence their subordinates with good personal qualities such as being caring and genuine, rather than manipulating others.

Three realms of service leadership

Noteworthy, service leadership emphasizes not only personal interest and achievement, but also the intention to fulfill the needs of others and the systems. The three realms including self, other, and the system of service leadership indicate the importance for a person to management himself or herself before leading others. Chung (31) suggested that before a person becoming a competent service leader, one should focus on improving his or her intrapersonal competence. It is believed that "a leader is unable to optimize his or her ability to lead others well unless he or she is healthy in mind, body, and spirit". In other words, one's ability to lead oneself is one of the best indicators of his or her capacity to lead others (32). Such concept shares similar value to a Confucianism thought in Daxue, which points out that if people are able to regulate the standpoint of showing love for others, interpersonal harmony and social stability will follow (33).

Everyone can be a leader

In traditional beliefs, a leader normally carries a superior, talented, and competent image. Only these leaders in high positions need to be equipped with leadership capability (34). Conversely, Service Leadership Theory believes that everyone has his or her strengths; hence, has the potential to lead. There are a wide variety of service transaction, ranging from self-serving personal achievement at work to complex service such as managing a team. Everyone has the potential to utilize their skills and strengths and becomes a leader in the collaborative process. It is important to be open-minded to see every person's potential. With such beliefs, service leaders will serve and lead in a humble and respectful manner, which can help them fully utilize their followers' skills, enhance their performance, and nurture the followers to become service leaders as well.

Principle $E = MC^2$

According to Chung and Elfassy (28), effective service leadership (E) is a function of one's moral character (M), competencies (C), and caring dispo-

sition (C) (i.e., $E = MC^2$). It is believed that effective service leaders should demonstrate good leadership competence, interpersonal competence, intrapersonal competence, as well as domain-specific knowledge in order to guide their leadership practice (30). Moral character emphasizes the importance to serve others with integrity and moral values while taking the lead. Caring disposition emphasizes one's sincerity to learn and to meet the needs of others. It is believed that a caring leader will not sacrifice the needs and benefits of others to fulfill one's own.

Although it is emphasized that the three determinants are equally important, morality and integrity appear to be essential features of effective leaders in the service industry. It is believed that the subordinates as well as service-receivers have difficulties trusting a person who lies, breaks promise, and neglects the feelings and needs of others, regardless of his or her actual work performance. These qualities are particularly important in certain industries such as counseling and nursing, where the nature of the service relies heavily on the interpersonal relationship. In addition, effective leaders serve not only clients but also everyone in life, including one's self, peers, subordinates, followers, and surroundings. Good leaders should always be "ready," "willing," and "able" to serve. They are continuously being evaluated by superiors, peers, subordinates, and all other service-receivers. Hence, instead of merely being skillful and knowledgeable, service leaders should demonstrate character strengths, moral character, leadership competency, and caring social disposition in order to perform effectively.

Manufacturing versus service economies in contemporary world

Traditional leadership education emphasizes the importance of knowledge and skills in the field. Such concept applies very well in industrialized societies, when the operation system required hands-on skills. However, in recent decades, the manufacturing industry is gradually replaced by the rapidly growing service industry, especially in Hong Kong. As a result, skills are no longer the only quality that makes one a competent leader. It is suggested that the new

concept of effective leadership focuses on whether one is moral and caring to followers and service recipients, as the basic concept is that the person himself/ herself is considered as the "service" (34).

Distinction of service leadership theory and other leadership theories

Different from other leadership theories, Service Leadership Theory puts great emphasis on the "collaborative service-focused" attitude and behavior. In addition, Service Leadership Theory purposes seven core beliefs, including 1) service means serving "oneself, others, and systems"; 2) "everyone can be a leader"; 3) "leadership effectiveness is dependent on possessing relevant situational task competences plus being judged by superiors, peers, and subordinates as possessing character and exhibiting care"; 4) "leaders should ethically improving one's competences, abilities, and willingness to help satisfy the needs of others"; 5) "high quality personal service should be consistently provided to everyone that one comes into contact with, including oneself"; 6) "service leadership is the world's oldest, most competitive, and longest surviving business model"; and 7) "high-paying, high status positions and management promotions will go to people who have domain specific knowledge and skills plus service leadership competences, character, and care" (30,31).

Development of the Service Leadership Knowledge Scale

A validated service leadership knowledge assessment tool is indispensable to measure and investigate the influence of service leadership knowledge. Moreover, it is also a key to evaluate participants' knowledge gain through service leadership education. In view of the lack of such validated scales, the research team at The Hong Kong Polytechnic University (PolyU) conducted a project entitled "Development and validation of measures based on the service leadership model," which entailed the construction and validation of a knowledge scale aimed at "capturing the essential knowledge points of service leadership in a format of multiple-choice questions" (30, p. 164).

Accordingly, the Long-Form Service Leadership Knowledge Scale (i.e., SLK-LF-200), which comprises 200 multiple-choice items covering fundamental service leadership knowledge points as outlined above (also see Table 2 for the domains and several sample items). Each item has a "correct" answer with one point whereas participants get zero point if they answer incorrectly. By adopting an objective method, the Service Leadership Knowledge Scale could reliably and validly show one's knowledge level (35). Through several validation studies as outlined below, the trimmed versions of the knowledge scale were also created which were shown to be valid and reliable.

Content validation

The SLK-LF-200 was subjected to a content validation study administered by the research team at PolyU (30). Four experts who were highly familiar with and involved in the development of the service leadership curriculum framework rated the 200 items based on three criteria, namely, i) relevance, ii) clarity, and iii) representativeness. The individual (I-CVI) and average scale content validation index (S-CVI/ave) based on experts' ratings on the three abovementioned criteria were employed to reflect the content validity of the scale. Both the I-CVI and S-CVI/ave metrics corroborated the meritorious content validity of the SLK-LF-200 on both the item and the scale levels (30).

Criterion-related validation

The SLK-LF-200 was administered in the 2014-15 academic year involving 161 PolyU students (36). The experimental group included 67 students who had taken credit-bearing training in service leadership before, while those who received no such training at the time of testing served as the control (N = 94). Results of the independent samples t-tests indicated that the experimental group scored significantly higher (i.e., all ts > 2.46, ps < .05) in all seven component scores so as the total score (computed by summing all 200 items), indicating the criterion-related validity of the SLK-LF-200. Furthermore,

analyses on the individual item highlighted that the experimental group performed significantly better on 63 of those items (i.e., all χ^2s > 2.46, ps < .05). These 63 items were subjected to a screening procedure conducted by the first author of this paper, leading to the deletion of 13 items after consideration of item redundancy and face validity. Consequently, 50 items (see Table 2 for the sample items) were retained to form the short version of Service Leadership Knowledge Scale (i.e., SLK-SF-50).

Table 1. Literature review on measures of leadership and service leadership

Steps	Details
Step 1: Literature Review on Leadership Knowledge Measures, Particularly in Different Chinese Contexts	Examples of References: − Chan, D. W. (2007). Leadership competencies among Chinese gifted students in Hong Kong: The connection with emotional intelligence and successful intelligence. *Roeper Review, 29*(3), 183-189. − Chiaburu, D. S., Huang, J. L., Hutchins, H. M., & Gardner, R. G. (2014). Trainees' perceived knowledge gain unrelated to the training domain: the joint action of impression management and motives. *International Journal of Training and Development, 18*, 37–52. − Farh, J.-L., & Cheng, B.-S. (2000). A cultural analysis of Paternalistic Leadership in Chinese organizations. In J. T. Li, A. S. Tsui, & E. Weldon (Eds.), *Management and organizations in the Chinese Context* (pp. 84-127). London: Palgrave. − Peng, J., Liu, Y., Lu, H., Liu, Y., & Wu, W. (2014). Emotional leadership: Conceptualization, measurement, development and model construction. *Advances in Psychological Science, 22*(11), 1757-1769. − Sitzmann, T., Ely, K., Brown, K. G., & Bauer, K. N. (2010). Self-assessment of knowledge: A cognitive learning or affective measure? *Academy of Management Learning & Education, 9*, 169–191. − Stedman, N. L., Rutherford, T. A., Rosser, M. H., & Elbert, C. (2009). When leadership counts: Engaging youth through the Washington Leadership Conference. *Journal of Agricultural Education, 50*, 92–104.
Step 2: Literature Review on Service Leadership	Examples of References: − Chung, P. P. Y., & Elfassy, R. (2016). *The 12 dimensions of a Service Leader* (1st ed.). New York, NY: Lexingford Publishing. − Shek, D. T. L., Chung, P. P. Y., Lin, L., Leung, H., & Ng, E. C. W. (2018). Service Leadership under the Service Economy. In J. L. Chin, J. E. Trimble & J. E. Garcia (Eds.), *Global and culturally diverse leaders and leadership: New dimensions and challenges for business, education and society* (pp. 143–161). Bingley: Emerald Publishing. − Shek, D. T. L., & Leung, H. (2015). Service Leadership qualities in university students through the lens of student well-being. In D. T. L. Shek & P. P. Y. Chung (Eds.), *Promoting Service Leadership qualities in university students* (pp. 1-16). Singapore: Springer. − Shek, D. T. L., & Lin, L. (2017). Validation of the Service Leadership knowledge scale: Criterion-related validity. In D. T. L. Shek, P. P. Y. Chung, L. Lin & J. Merrick (Eds.), *Service Leadership education for university students* (pp. 189–204). New York, NY: Nova Sciences. − Shek, D. T. L., Lin, L., Leung, H., Yu, L., Ma, C. M. S., & Li, X. (2017). Development and validation of the Service Leadership knowledge scale in a Chinese context. In D. T. L. Shek, P. P. Y. Chung, L. Lin & J. Merrick (Eds.), *Service Leadership education for university students* (pp. 163–188). New York, NY: Nova Sciences. − Shek, D. T. L., Sun, R. C. F., & Liu, T. T. (2015). Evolution and realms of Service Leadership and leadership models. *International Journal on Disability and Human Development, 14*(3), 243-254.

Table 2. Initial Development of the Long-Form (SLK-LF-200)
and Short-Forms (SLK-SF-50 and SLK-SF-40) Service Leadership Knowledge Scale

Steps	Details
Step 3: Development of the Item Pool (200 items) with Reference to the Main Proposed Domains	Seven key domains were conceptualized to be subsumed under the original, 200-item Long-form Service Leadership Knowledge Scale (SLK-LF-200). These include: [1] General description of Service Leadership; [2] Three realms of Service Leadership; [3] Everyone can be a leader; [4] Principle E= MC^2; [5] Manufacturing vs. service economies and current societal status; [6] Distinction of Service Leadership and other leadership theories; [7] Other knowledge points in SLAM curriculum framework. Three sample items are featured in the following: 2. According to the SLAM model, competence, —————, and ————— affect employees' loyalty and commitment. **[Domain 1]** A) fame; character; B) intelligence; care; C) intelligence; character; D) character; care (Correct answer: D); 27. Self-serving effort entails improving one's————— in helping to satisfy others' needs. **[Domain 2]** A) fame; B) wealth; C) authority and power; D) competencies, abilities and willingness (Correct answer: D); 149. Which of the below is typically a desired behavioral attribute of employees in a manufacturing economy? **[Domain 5]** A) Flexible; B) Creative; C) Controllable; D) Unpredictable (Correct answer: C).
Step 4: Initial Validation of the Original Scale (i.e., SLK-LF-200; 200 Items)	The SLK-LF-200 was tested in a criterion-related validation study involving 161 PolyU students conducted in semester 2 of the 2014/15 academic year. Of those 161 participants 67 took the Service Leadership course before while the rest (N= 94) did not. Findings revealed that the former significantly performed better than the latter on 63 items of the SLK-LF-200. The first author of this paper commissioned a screening procedure on these 63 items, resulting in the removal of 13 items out of duplicity or face validity concern. Ultimately, a one-factor, 50-item short-form of Service Leadership Knowledge Scale (SLK-SF-50) was retained for the main study. See below for two sample items.
Step 5: Development of Scale Used in the Main Survey (i.e., SLK-SF-50; 50 Items) and the Major domains	**Single-factor, SLK-SF-50** 35. The two dimensions of social cognition include and .————— A) warmth; talent; B) warmth; competence; C) popularity; talent; D) popularity; competence (Correct answer: B) 43. The manufacturing economy emphasizes ————— A) Capital assets; B) Human assets; C) Financial assets; D) Social assets (Correct answer: A)

Note. All sample items were slightly re-worded to avoid familiarity effect.

Large-scale validation

The SLK-SF-50 was administered in a large-scale validation study involving 4,486 undergraduates recruited from eight government-funded universities in Hong Kong. Initial reliability analyses suggested the removal of ten items with (i.e., < 0.30) item-total correlations. As a result, a single-factor, shortened 40-item solution (i.e., SLK-SF-40) was subjected to the Confirmatory Factor Analysis (CFA) using the robust weighted least squares (WLSMV) estimator. The goodness-of-fit indices underscored the excellent fit of this proposed solution with the data (Table 3).

The SLK-SF-40 also showed excellent internal consistency (α=0.94, mean inter-item correlations=0.28) and robust convergent validity, with the latter evidenced by the positive correlation between SLK-SF-40 and the list of theoretically-relevant constructs such as Servant Leadership (37) and Moral Self-concept (38). Taken as a whole, this large-scale, joint-institution validation study underlined the adequacy of SLK-SF-40 (Table 3) as a reliable, valid, and robust measurement tool in examining people's mastery of fundamental knowledge points on the Service Leadership Theory.

Table 3. Refined scales based on exploratory factor analyses and confirmatory factor analyses

Steps	Details
Step 6: Refined Scale Based on Exploratory Factor Analyses	N/A. No EFA was carried out.
Step 7: Refined Scale Based on Confirmatory Factor Analyses (i.e., SLK-SF-40)	The whole working sample (N= 4,486) was utilized to validate the 50-item SLK-SF-50. Initial reliability analyses informed the deletion of 10 items due to low (i.e., < 0.30) item-total correlations. The resultant hypothesized one-factor, 40-item solution (i.e., SLK-SF-40) was accordingly subjected to CFA using the robust weighted least squares (WLSMV) estimator. The findings revealed the excellent fit of the SLK-SF-40 (i.e., CFI= 0.984; NNFI= 0.985; RMSEA= 0.029) to the data. The SLK-SF-40 also demonstrated excellent internal consistency (□ = 0.94, mean inter-item correlations = 0.28) as well as strong convergent validity (i.e., positive and significant correlations with all external criterion scales as well as other Service Leadership scales under validation). The SLK-SF-40 was accordingly accepted as the finalized solution. Three sample items are shown as follows: 8. A manager under the service economy wants to hire someone. Based on the Service Leadership model, which of the following advice would you give him/her? A) Hire for qualifications, train for character B) Hire for character, train for skills C) Hire for attitude, train for character D) Hire for efficiency, train for mindset (Correct answer: B); 22. In the four options below, which one belongs to an attribute of the intelligent quotient (IQ)? A) Raw power B) Attractiveness C) Sexual Orientation D) Problem-solving skills (Correct answer: D) 37. Which of the following statements is inconsistent with the concept of "respect"? A) Showing off one's strength B) Accepting and appreciating differences C) Accepting and appreciating oneself D) Serving as a key element in nurturing authentic relationship (Correct answer: A)

Note. All sample items were slightly re-worded to avoid familiarity effect.

Acknowledgments

Ethical compliance

The authors have stated all possible conflicts of interest within this work. The authors have stated all sources of funding for this work. If this work involved human participants, informed consent was received from each individual. If this work involved human participants, it was conducted in accordance with the 1964 Declaration of Helsinki. If this work involved experiments with humans or animals, it was conducted in accordance with the related institutions' research ethics guidelines.

References

[1] Worsley A. Nutrition knowledge and food consumption: Can nutrition knowledge change food behaviour? Asia Pac J Clin Nutr 2002;11(Suppl):579-85.

[2] Ferguson MJ, Bargh JA. How social perception can automatically influence behavior. Trends Cogn Sci 2004;8:33-9.

[3] Stone G, Barnes JH, Montgomery C. Ecoscale: A scale for the measurement of environmentally responsible consumers. Psychol Mark 1995;12:595-612.

[4] Fraj-Andrés E, Martínez-Salinas E. Impact of environmental knowledge on ecological consumer behaviour: An empirical analysis. J Int Consum Mark 2007;19:73-102.

[5] De Melo Ghisi GL, Abdallah F, Grace SL, Thomas S, Oh P. A systematic review of patient education in cardiac patients: Do they increase knowledge and promote health behavior change? Patient Educ Couns 2014;95:160-74.

[6] Robb CA, Woodyard A. Financial knowledge and best practice behavior. J Financ Couns Plan 2011;22:60-70.

[7] Baranowski T, Cullen KW, Nicklas T, Thompson D, Baranowski J. Are current health behavioral change models helpful in guiding prevention of weight gain efforts? Obesity 2003;11(Suppl):23-43.

[8] Ajzen I, Fishbein M. Understanding attitudes and predicting social behaviour. Englewood Cliffs, NJ: Prentice-Hall, 1980.

[9] Fisher JD, Fisher WA, Williams SS, Malloy TE. Empirical tests of an information-motivation-behavioral skills model of AIDS-preventive behavior with gay men and heterosexual university students. Health Psychol 1994;13:238-50.

[10] Straus SE, Tetroe J, Graham I. Defining knowledge translation. Can Med Assoc J 2009;181:165-8.

[11] Ogunyomi P, Bruning NS. Human resource management and organizational performance of small and medium enterprises (SMEs) in Nigeria. Int J Hum Resour Manage 2016;27:612-34.

[12] Caldwell C, Ndalamba KK. Human resource professionals as strategic leaders - A behavioral opportunity for improving information management. J Values-Based Leadersh 2017;10:1-9.

[13] Finkler SA, Smith DL, Calabrese TD, Purtell RM. Introduction to financial management. In: Finkler SA, Smith DL, Calabrese TD, Purtell RM, eds. Financial management for public, health, and not-for-profit organizations. Washington, DC: CQ Press, 2016.

[14] Scamardo M, Harnden SC. A manager coaching group model: Applying leadership knowledge. J Workplace Behav Health 2007;22:127-43.

[15] Stein MK, Nelson BS. Leadership content knowledge. Educ Eval Policy Anal 2003;25:423-48.

[16] Weitz BA, Sujan H, Sujan M. Knowledge, motivation, and adaptive behavior: A framework for improving selling effectiveness. J Mark 1986;50:174-91.

[17] Yammarino FJ, Dionne SD, Schriesheim CA, Dansereau F. Authentic leadership and positive organizational behavior: A meso, multi-level perspective. Leadersh Q 2008;19:693-707.

[18] Srivastava A, Bartol KM, Locke EA. Empowering leadership in management teams: Effects on knowledge sharing, efficacy, and performance. Acad Manage J 2006;49:1239-51.

[19] Ajzen I. Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior. J Appl Soc Psychol 2002;665:32-83.

[20] Conner M, Armitage CJ. Extending the theory of planned behavior: A review and avenues for further research. J Appl Soc Psychol 1998;28:1429-64.

[21] Madden TJ, Ellen PS, Ajzen I. A comparison of the theory of planned behavior and the theory of reasoned action. Pers Soc Psychol Bull 1992;18:3-9.

[22] Mathieson K. Predicting user intentions: comparing the technology acceptance model with the theory of planned behavior. Inf Syst Res 1991;2:173-91.

[23] Kelloway EK, Barling J. Knowledge work as organizational behavior. Int J Manage Rev 2000;2:287-304.

[24] Pearce CL, Manz CC. The new silver bullets of leadship: The importance of self- and shared leadership in knowledge work. Organ Dyn 2005;34:130-40.

[25] Bettencourt LA, Gwinner KP, Meuter ML. A comparison of attitude, personality, and knowledge predictors of service-oriented organizational citizenship behaviors. J Appl Psychol 2001;86:29-41.

[26] Lin RSJ, Hsiao JK. The relationships between transformational leadership, knowledge sharing, trust and organizational citizenship behavior. Int J Innovat Manage Techol 2014;5:171-4.

[27] Donate MJ, de Pablo JDS. The role of knowledge-oriented leadership in knowledge management practices and innovation. J Bus Res 2015;68:360-70.

[28] Chung PPY, Elfassy R. The 12 dimensions of a service leader. Grandville, MI: Lexingford, 2016.

[29] Shek DTL, Li X. The role of a caring disposition in service leadership. Int J Disabil Hum Dev 2015;14:319-32.

[30] Shek DTL, Lin L, Leung H, Yu L, Ma CMS, Li X. Development and validation of the service leadership knowledge scale in a Chinese context. In: Shek DTL, Chung PPY, Lin L, Merrick J, eds. Service leadership education for university students. New York: Nova Science, 2017:163-88.

[31] Chung PPY. Service reborn. New York: Lexingford, 2012.

[32] Shek DTL, Chung PPY, Leung H. How unique is the service leadership model? A comparison with contem-

porary leadership approaches. Int J Disabil Hum Dev 2015;14:217–31.

[33] Sun CTL. Themes in Chinese psychology. Singapore: Cengage Learning, 2013.

[34] Shek DTL, Lin L. Intrapersonal competencies and service leadership. Int J Disabil Hum Dev 2015;14:255–63.

[35] Schrader PG, Lawless KA. The knowledge, attitudes, and behaviors approach how to evaluate performance and learning in complex environments. Perform Improv 2004;43:8-15.

[36] Shek DTL, Lin L. Validation of the service leadership knowledge scale: Criterion-related validity. In: Shek DTL, Chung PPY, Lin L, Merrick J, eds. Service

leadership education for university students. New York: Nova Science, 2017:189-204.

[37] Wong PTP, Page D. Servant leadership: An opponent-process model and the revised servant leadership profile. Virginia Beach, VA: Regent University, 2003.

[38] Cheng CHK. The Chinese Adolescent Self-Esteem Scales: A user manual. Hong Kong: City University of Hong Kong Press, 2005.