THE INFLUENCE OF PSYCHOLOGICAL FACTORS FOR LEADER'S EFFICIENCY IN GLOBAL IT COMPANIES

Lina Cirtautienė[1], Auksė Endriulaitienė

Vytautas Magnus University

Abstract. Changing business environments require a different leadership. Global information technology (IT) leaders must demonstrate in-depth competencies in technology and business as well as softer interpersonal skills. Studies provide disputed evidence regarding the psychological factors that contribute to a leader's efficiency. This study analyses what the most important competencies for effective IT leadership in local and global IT organisations are. An integrative literature review was used to examine and summarise previous research in global IT literature. The competencies' framework, containing three levels (core traits, personal character, and ability) and four dimensions (intercultural, interpersonal, global, and global organisational) (Kim & McLean, 2015), was chosen to examine psychological factors that contribute to IT leadership effectiveness. The results show that features related to adaptation of the cultural environment are significant for a global leader. Personality traits (extraversion, awareness, and openness to experience), characteristics (self-esteem, self-efficiency, global mindset, and motivation), and abilities (communication skills, leadership style, and experience), within the organisational context are related to higher leadership efficiency. Local and global leaders differ in the significance of social intelligence (IQ, EQ, and CQ). Sufficient educational interventions can improve an individual's effectiveness regarding global leadership challenges. This study discovers guidelines for development and education of IT leaders which include strengthening personality traits related to performance, utilising communication gaps, leveraging cultural differences, promoting trust and motivation, fostering leadership roles and attitudes,composing teams based on teamwork and task work, and modelling and practising other critical competencies for global leadership through crosstraining.

Keywords: IT leadership, global, effectiveness, competency, local

---
[1] Corresponding author: Vytautas Magnus University, Jonavos g. 66, LT-44191 Kaunas, Lithuania. E-mail: lina.cirtautiene@vdu.lt. +37065031002, ORCID 0000-0003-0551-2067.

INTRODUCTION

Requirements for an effective IT leader are unique. The information technology (IT) sector is specific (Wynekoop & Walz, 1998), and IT professionals are in high demand. IT leaders contribute to achieving strategic goals and objectives in the organisation (Eom, 2015). Technological competence alone is no longer sufficient for constantly changing environment. They are required in quick flexible responses, adjusting their products and projects in order to incorporate the latest technological innovations (Kaufeld, Chari, & Freeme, 2009). Continuous change brings uncertainty, tension, and stress (Naik & Bisht, 2014). IT leaders can only accept changes so their ability to adapt is crucial. Global IT leaders must demonstrate in-depth competencies in technology and business as well as softer interpersonal skills and to adapt to the changes in the environment with the necessary competency set (Kaufeld, Chari, & Freeme, 2009). Most managers found it challenging to transform themselves from technical expert to leader (Naik & Bisht, 2014).

Effectiveness means the degree of being able to achieve goals and the extent to which problems are properly solved (Naik & Bisht, 2014). Research confirms the strong influence of personal capability on software productivity (Boehm et al., 1995). If psychological factors explain variance in the productivity of software development teams, they should yield significant benefit to effective IT leadership as well. Only a few researchers investigate the influence of psychological factors on developing software projects (Dittrich, John, Singer, & Tessem, 2007) or the significance to IT leaders. Fragmented studies reveal that a leader's personality traits, character, attitude, and abilities contribute to IT needs assessment, resource utilisation, core business strategy, and problem-solving (Creasy & Anantatmula, 2013; Eom, 2015; Hoch & Kozlowski, 2014; Li, Mobley, & Kelly, 2013; Magnusson, Schuster, & Taras, 2014).

In addition, IT personnel possess unique characteristics:they are highly educated, intellectually curious, and creative, and they value opportunities for personal growth and autonomy at work (Wynekoop & Walz, 1998). It can be challenging for IT leaders to be perceived as effective in such a context. Personal qualities are particularly significant to IT leaders.

Moreover, IT leaders operate in the specific organisational environment. Global IT leadership and new organisational forms (as virtual teams) evolve faster than they are explored (Lisak & Erez, 2015; Zander, Mockaitis, & Butler, 2012). Dispersed teams (as ad-hoc teams, virtual teams, or 'technology-mediated teams') operate in specific conditions where colleagues are not co-located but co-working on interdependent tasks with shared responsibility for outcomes using computer-mediated communication (Purvanova, 2014; Turel & Connelly, 2012). Frequent use of virtual teams is promoted by their economic efficiency: it reduces costs, accelerates decision processes, and evolves dispersed team members (Purvanova, 2014; Turel & Connelly, 2012). These teams enable flexibility and autonomy in organisational structures, optimising resource distribution (Colquitt, Hollenbeck, Ilgen, LePine, & Sheppard, 2002). Although innovative organisational forms require specific leadership competencies (Hoch & Kozlowski, 2014; Morgan, Paucar-Caceres, & Wright, 2014), there is still a significant gap between global and local leadership. Changing business environments require a different leadership but what makes it distinct from the local leadership remains unclear. Although local leaders operate at the national level, they must prepare themselves for global leadership because they are exposed to globalisation as well (Jokinen, 2005).

Global IT leaders are one of the most important components required for organisational effectiveness and success (Wu, Chen, & Lin, 2004). An appropriate response to unique characteristics of IT personnel, the nature of an IT unit's complex and demanding tasks are highly linked with an IT leader's competency. However, most research has focused on tools and production methods developing software with limited exploration of personal issues influencing IT leader's efficiency (Glassetal., 2002; Sawyer & Guinan, 1998; Sjoeberg et al., 2005). IT leaders must be aware of what competencies and traits facilitate effective leadership. The leaders must develop and nurture these abilities if they are to be successful. While leadership studies provide only a partial picture of how IT leadership can be developed (Eom, 2015). Thus, an IT leader's development, management, and retention become a concern for organisations in the long term.

Over the past two decades, scholars have begun examining the necessary capabilities, skills, and characteristics in people who are exposed to global leadership responsibilities (Mendenhall, Reiche, Bird, & Osland,

2012; Galvin, Gibbs, Sullivan, & Williams, 2014). However, research remains fragmented and offers limited explanations of the empirical data to develop consistent knowledge (Mendenhall et al., 2012). Still, global leadership definitions can be critiqued (Mendenhall et al., 2012), and global IT leadership lacks a unified theoretical background.

Competence theory contributes to the understanding that competencies are measurable and can be developed. According to Spencer and Spencer (1993), there are three levels of competencies: the first level consists of traits and motives, the second level contains attitudes, and the third level presents behavioural knowledge and skills (Kim & McLean, 2015). The competency-based leadership model suggests that personal traits, behaviours, skills, values, and knowledge can be assessed as competencies to distinguish effective from ineffective performers (Caligiuri, 2006; Jokinen, 2005). Successful leaders demonstrate certain personal characteristics and competencies more frequently: these features can be recognised, evaluated, and developed (Brownell, 2006; Kim & McLean, 2015). According to the integrative framework, leadership could be developed through specific educational activities and by modelling and practising leadership competencies. Staff diversity management programmes are implemented in international companies, but they lack appropriate application knowledge (Lisak & Erez, 2015).

Kim and McLean (2015) proposed the integrative framework for global leadership, which can be adapted to a specific sector and organisational context (Kim & McLean, 2015). Developing specific global leadership competencies is compulsory for an organisation to become more globally competent and operate effectively. Such factors as company culture, team diversity, and hierarchical and functional positions in the organisation will have varying degrees of impact on the characteristics that affect leadership (Espinosa, Nan, & Carmel, 2015; Magnusson et al., 2014; Morrison, 2000; Muratbekova-Touron, 2009; Salas, Shuffler, Thayer, Bedwell, & Lazzara, 2015). Global leadership phenomenon was explicated in dimensions (Mendenhall, 2011; Morisson, 2000) along which global IT leadership can be analysed. Therefore, the integration of two theoretical foundations, levels from the competency model (Spencer & Spencer, 1993), and dimensions from the leadership competency model (Morrison, 2000) can be significant for a systematic approach to global IT leadership.

Despite the contributions, it is difficult to identify necessary competencies and efficient global leader characteristics due to global leadership complexity, limited availability of empirical data, different applied methodologies, and diverse samples (Kim & McLean, 2015; Morrison, 2000). While the effects of global leaders on value creation, employment, and technology development can be huge, relatively little research has been carried out on global leadership characteristics, competencies, and developmental strategies (Morrison, 2000).

PROBLEM STATEMENT

Research on global IT leadership lacks a clear theoretical background. There is no straightforward evidence on which psychological factors contribute to leaders' efficiency. It is difficult to identify reliable global leaders' prototypes as concepts are overlapping (Joshi & Lazarova, 2005) and lack a clear theoretical background (Jokinen, 2005). There is limited research on the systematic global leadership competency structure (Kim & McLean, 2015).

Studies lack clear guidelines for leaders' development, with the view of promoting changes in the efficiency of organisations (Zander et al., 2012). Thus, identifying global leadership competency models should be a priority to succeed in the changing global environment (Kim & McLean, 2015).

RESEARCH QUESTIONS

What competencies must IT leaders exhibit to be perceived as effective?

Should these competencies be different for leaders' effectiveness in local and global IT organisations?

AIM OF THE STUDY

The aim of this study is to investigate the relationship among various competencies of IT leaders and perceived leadership effectiveness in global and local IT organisations.

RESEARCH METHODS

An integrative literature review was used to examine and summarise previous research in global IT literature. A literature search on Academic Search Complete, Regional Business News, Business Source Complete, masterFILE Premier, Library, Information Science & Technology Abstracts, and PsycARTICLES was conducted in March 2017. The following search strategy algorithm was used: competence or ability or skills or personality traits AND effective leader or leadership AND global IT or global leadership or virtual team's leadership. Published quantitative studies examining the factors contributing to effective IT leadership and the development of leadership behaviours in global organisations were included. During the title screening stage, studies were included if the titles contained the following keywords: traits, personal characteristics, ability, competencies, self-concept, attitudes, global mindset, skills, effective leader, leadership, organisation, IT, global, cross-cultural. One hundred and twenty articles spanning the period of 2012–2017 were found in academic databases. Data extraction, quality assessment, and analysis were completed on 20 selected articles.

The integrative literature review was performed according to the competency theory and global leadership competency model (Kim & McLean, 2015). The competency framework with three levels (core traits, personal character, and ability) and four dimensions (intercultural, interpersonal, global organisational knowledge, and skills) (Kim & McLean, 2015) was chosen to examine psychological factors that contribute to IT leadership effectiveness.

FINDINGS

According to the literature review and global leadership competency model, the components of global leadership competency are categorised into three levels (core traits, personal character, and abilities) and four dimensions (intercultural, interpersonal, global, and global organisational) (Kim & McLean, 2015). The review of the previous research supports the idea that there are key competencies, over and above the contextual ones, that predict successful leadership in a global environment.

Figure 1. *The components of global leadership competency according to the literature review and global leadership competency model (Kim & McLean, 2015)*

Core traits. To date, leaders' personality traits have been analysed only in individual cultures (Judge, 2001), while the qualities of a global leader's personality are just starting to be analysed (Lisak & Erez, 2015; Zander et al., 2012). A leader's verbal fluency, confidence, and independence have links to successful leadership. The components that were determined from the literature review and assessed as an IT global leader's core traits are awareness, extraversion (Magnusson et al., 2013), openness to experience, (Blasco, Feldt, & Jakobsen, 2012; Creasy & Anantatmula, 2013; Magnusson et al., 2013), anxiety level (Creasy & Anantatmula, 2013), emotional resilience, critical analysis, vision and imagination, intuitiveness, interpersonal sensitivity (Galvin et al., 2014), empathy (Post, 2015), independence (Zander et al., 2012), and conscientiousness

(Creasy & Anantatmula, 2013; Galvin et al., 2014). Their development is significant for a leader's effectiveness.

Core traits are interrelated to other components of the global leadership competency model. Personality traits, such as awareness and openness to experience, are linked with metacognitive cultural intelligence. Motivational cultural intelligence is related to extraversion and openness to experience. Cultural intelligence is significant for a global leader's adaptation and efficiency (Magnusson et al., 2013). The extrovert leader will be able to achieve long-term goals, postpone the award, and be more efficient. Personality traits and communication style have a combined effect on the productivity of the organisation (Solaja, Idowu, & James, 2016).

To summarise, personality traits, such as awareness, extraversion, openness to experience, anxiety level, emotional resilience, critical analysis, vision and imagination, intuitiveness, interpersonal sensitivity, empathy, dominance, independence, and conscientiousness are significant for a global IT leader's efficiency.

Personal character. Personal character is interpreted as personality, values, and spirituality, directing leader attitudes and behaviour (Judge, 2001). In the global leadership competency model such elements as a global mindset, self-concept, attitudes, global perspective, and self-efficacy were determined as second level concepts (Kim & McLean, 2015). The literature review has shown that operational efficiency (Kim & McLean, 2015), degree of change orientation, and degree of innovativeness are related to an IT leader's effectiveness (Creasy & Anantatmula, 2013). Flexibility, intuition, talent, innovation, and non-standard thinking are meaningful characteristics for leadership (Brownell, 2006). Subjective well-being (Eisenberg et al., 2013), attitudes, and job satisfaction remain essential elements for the global leader (Eom, 2015). Moreover, effective global leadership requires a global mindset (Blasco et al., 2012; Javidan, Bullough, & Dibble, 2016; Kim & McLean, 2015) and cosmopolitan view (Blasco et al., 2012). Other frequently mentioned self-concepts are self-awareness (Galvin et al., 2014), self-efficacy (Javidan et al., 2016; Quisenberry & Burrell, 2012), level of self-monitoring (Creasy & Anantatmula, 2013), self-leadership, and self-confidence (Eisenberg et al., 2013; Zander et al., 2012; Segawa, 2015).

Thus, notable global leadership components, such as motivational factors, job satisfaction, and global mindset, drive positive outcomes. Self-concepts (such as self-awareness, self-efficacy, self-monitoring, self-leadership, and self-confidence) remain assessed as a global leader's efficiency features. Social competencies, adaptability, accessibility, engagement, operational efficiency, and the degree of change orientation and innovativeness encourage successful management in an IT organisation.

Abilities. According to the selected competency framework (Kim & McLean, 2015; Morrison, 2000), the third level consists of the following four dimensions: intercultural knowledge and skills, interpersonal knowledge and skills, global knowledge and skills, and global organisational knowledge and skills.

First dimension: Intercultural knowledge and skills. Intercultural competency knowledge and skills are the most frequently assessed in global leadership studies. Cultural intelligence is analysed through motivational cultural intelligence and metacognitive cultural intelligence (Blasco et al., 2012; Eisenberg et al., 2013; Magnusson et al., 2014; Magnusson et al., 2013). Motivational cultural intelligence is particularly relevant in IT teams. This motivational construct influences group processes and outcomes, it captures the team members' motivation, self-efficacy, and openness, suggesting better adaptability to the inherent challenges in a global organisation (Magnusson et al., 2014). Cultural intelligence is linked with intercultural leadership efficiency, operational effectiveness, and efficient negotiation (Rockstuhl et al., 2011; Ng et al., 2012). Research reveals that separate components are linked in the global leadership competency model. Cultural intelligence is associated with openness to experience (Rockstuhl et al., 2011) and less exclusionary reactions (Rockstuhl et al., 2011). It is also linked to higher confidence in the international context (Rockstuhl et al., 2011; Eisenberg et al., 2013).

Moreover, it is important to mention that high cultural intelligence encourages a global leader's effectiveness through awareness of diversity, desire to understand differences, collection and retention of information of such differences, and behaving in a manner consistent with the norms of others (Tung, 2014).

Second dimension: Interpersonal knowledge and skills. Effective employee leadership in the global context demands certain interpersonal skills: motivating people and building interpersonal relations. This is

accomplished using good communication skills, including a leader's orientation to the relationship (Morgan et al., 2014, Solaja et al., 2016), ability to drive engaging communication (Galvin et al., 2014; Zander et al., 2012), indirect influence (Hoch & Kozlowski, 2014), good delegation skills (Quisenberry & Burrell, 2012), negotiation (Ng et al., 2012), and the ability to give sufficient feedback to a team (Morgan et al., 2014; Quisenberry & Burrell, 2012) and resolve conflicts effectively (Morgan et al., 2014; Salas et al., 2015). Frequent spontaneous communication efforts can reduce interpersonal conflict and improve IT team performance (Magnusson et al., 2014). Frequent interaction among team members positively benefits the communication process, as it reduces coordination issues and improves shared team knowledge and common ground (Espinosa et al., 2015). Global IT leaders need empowering skills to motivate and inspire the team (Zander et al., 2012), affect the members' motivation and behaviour (Hoch & Kozlowski, 2014), reduce discomfort, and proactively increase benefits (Morgan et al., 2014). Developing mutual trust is important due to the forms of work applied in global companies. Mutual trust is encouraged by building confidence through communication (Javidan et al., 2016; Morgan et al., 2014; Quisenberry & Burrell, 2012), making people feel appreciated and accepted, creating a sense of community (Morgan, Paucar-Caceres, & Wright, 2014) and relationship building (Quisenberry & Burrell, 2012), and giving structured support for employees (Hoch & Kozlowski, 2014). A leader's communication style is linked to the productivity of the organisation.

Studies highlight adaptive leadership (Galvin et al., 2014; Hoch & Kozlowski, 2014), transactional leadership (Quisenberry & Burrell, 2012), shared leadership (Javidan et al., 2016), leader-member exchange (LMX), and 'informal' leadership (Hoch & Kozlowski, 2014) as significant for global IT leaders. Transformational leadership behaviours help IT personnel become more aware of the process and committed to the organisational goals, enhancing the higher possibility to retain IT employees (Eom, 2015; Hoch & Kozlowski, 2014). The ability to identify and transmit the vision of the organisation is vital in maintaining core business operations and specific organisational requirements (Eom, 2015). A collaborative leadership style fits more than the authority style in matrix organisations (Oertig & Buergi, 2006). Ability in managing resources may increase a leader's effectiveness in coordination (Galvin et al., 2014; Salas

et al., 2015), coaching (Salas et al., 2015), and cooperative learning (Post, 2015). Task orientation would be preferable for sufficient direction and target setting (Morgan et al., 2014, Zander et al., 2012), defining the roles of each team member (Quisenberry & Burrell, 2012), fostering a group goal, showing high performance expectations, providing intellectual stimulation (Eom, 2015), and creating routines effectively (Hoch & Kozlowski, 2014).

The main challenges for IT leaders are building trust, communication, cultural diversity, and complexities in exchanging data and information. Leadership effectiveness is related to sufficient direction and target setting, effective communication, teamwork facilitation, motivation, and inspiration, leveraging cultural differences and empowerment (Zander et al., 2012).

Third dimension: Global knowledge and skills. The third dimension justifies the need for global business competencies. Global business competencies were mentioned as global leadership (Kim & McLean, 2015; Zander et al., 2012) or shared leadership (Hoch & Kozlowski, 2014) in self-managed virtual teams (Quisenberry & Burrell, 2012) or distributed teams (Salas et al., 2015). Effective global leadership requires value-added skills: teamwork facilitation (Salas et al., 2015; Zander et al., 2012), operational effectiveness (Eisenberg et al., 2013), and knowledge in international business (Salas et al., 2015). Task management skills remain important for team efficacy, cooperation (Salas et al., 2015), trust (Espinosa et al., 2015; Quisenberry & Burrell, 2012), and commitment (Hoch & Kozlowski, 2014). Intercultural adaptation (Eisenberg et al., 2013; Javidan et al., 2016; Zander et al., 2012), cross-cultural efficiency (Eisenberg et al., 2013), and adaptation to the changing environment (Kim & McLean, 2015) leverage cultural differences. Knowledge and skills that are essential for global business are gained through experience (Eisenberg et al., 2013; Javidan et al., 2016; Li et al., 2013). The key features that are urgent for global IT leaders depend on the organisational context (Brownell, 2006). Physical distance negatively affects trust and satisfaction (Magnusson et al., 2014). Availability, regardless of location and collaboration, technology use with the reduction of communication, and delayed feedback reduce conflict identification and increase misunderstandings. Psychic distance is meaningful for performance and interaction in virtual teams (Magnusson et al., 2014). Otherwise, the psychic distance may not

always be negatively associated with team performance, particularly in a temporal distance (Espinosa et al., 2015;); it may be positively related to performance according to the 'psychic distance paradox' (Magnusson et al., 2014). Separate components in the global leadership competency model are linked.

To summarise, global knowledge and skills are highlighted as global leadership skills, value-added skills, sufficient task performing issues, and 'relational factors' (commitment and trust). Leveraging cultural differences may be developed through experience and exposure to effective global IT leaders.

Fourth dimension: Global organisational knowledge and skills. This dimension contains the following global organisational features as a context influencing leadership: organisational climate (Morgan et al., 2014; Salas et al., 2015), organisational dynamics, organisational project management maturity, structure (Creasy & Anantatmula, 2013; Eom, 2015), external threat and stress (Salas et al., 2015), stability (Javidan et al., 2016; Quisenberry & Burrell, 2012), functional diversity, geographic dispersion and size (Post, 2015), and cultural diversity (Salas et al., 2015). Team context is a component of the organisational context affecting global leadership, including global virtual teams (Hoch & Kozlowski, 2014; Magnusson et al., 2014), 'psychic distance paradox' (Espinosa et al., 2015; Magnusson et al., 2014), team cohesion, team interaction norms (Post, 2015), general collective intelligence (Javidan et al., 2016), team members' expectation of challenges, team members' satisfaction (Magnusson et al., 2014), team interaction, communication, and social integration (Espinosa et al., 2015; Magnusson et al., 2014), team performance (Espinosa et al., 2015), and experience in a global organisational context (Li et al., 2013). To summarise the literature findings, global leadership experience, global organisational context, and team context are significant for effective IT leadership.

Global and local leaders' differences. Excellent global and local leaders are goal orientated (Eom, 2015; Seijts et al., 2015), able to engage employees (Blasco et al., 2012; Seijts et al., 2015; Zander et al., 2012), and can increase team loyalty and trust (Hoch & Kozlowski, 2014; Seijts et al., 2015; Liborius, 2014; Quisenberry & Burrell, 2012). Despite existing similarities, local and global leaders differ in the significance of social intelligence (IQ, EQ, and CQ). Social competencies, such as emotional

intelligence (Creasy & Anantatmula, 2013) and emotional competence (Post, 2015), are related to a leader's efficiency and adaptability (Blasco et al., 2012; Eisenberg et al., 2013). Emotional intelligence has a positive effect on local and global leadership. However, a leader's key features depend on the organisational context (Brownell, 2006). Emotional intelligence predicts common, but not intercultural leadership effectiveness (Rockstuhl et al., 2011; Judge, 2001). Emotional intelligence with intelligence quotient (IQ) are significant variables associated with effective regional leadership. Meanwhile, the global market and changes in working conditions require specific leadership competencies (Herbert, Mockaitis, & Zanderb, 2014; Zander et al., 2012), related to adaptation in the cultural environment (Magnusson et al., 2013; Ng et al., 2012). Thus, cultural intelligence is associated with more cross-cultural, global leadership efficiency (Judge, 2001). Effective global IT leaders need to adjust to cultural differences, values, attitudes, and behaviour according to cross-cultural diversity (Javidan et al., 2016; Morgan et al., 2014). Other significant differences among global and local IT leaders are not provided in analysed literature.

However, cross-cultural skills and personality traits, such as awareness and openness, can be developed even in a local multicultural team (Tung, 2014). Due to the growing international diversity within countries, employees in a local context must collaborate with colleagues from other countries. Intranational and international diversity can be equally significant and have positive and negative implications. Global and local leaders are already exposed to global leadership (Jokinen, 2005; Tung, 2014).

Developmental Guidelines for IT Leaders

Leadership can be developed through educational activities by modelling and practising leadership competencies. Training, created according to assessed deficiencies in individuals, would develop specific competencies and focus on more tangible aspects to improve performance (Caligiuri, 2006). By identifying the most significant global leadership competencies, organisations could successfully develop global leaders in reduced time and with low costs (McCall & Hollenbech, 2002). Developing the required personality traits through an educational

intervention process reinforces preparation for global leadership (Kim & McLean, 2015). Strengthening personality traits related to performance, like extraversion, openness to experience, critical analysis, vision and imagination, intuitiveness, interpersonal sensitivity, empathy, and independence, will help a global IT leader perform in the global context. Stress management training could support decreasing the anxiety level and emotional resilience.

Promotion of cultural intelligence will strengthen the development of global orientation among IT leaders. Cultural intelligence can be developed through training, internships, and exploration (Crowne, 2008). Exercises demonstrating cultural differences are particularly beneficial, especially encouraging efforts in preparation for managing cross-cultural interactions (Magnusson et al., 2014). Trainees must be attentive for non-obvious cultural differences, such as values and beliefs. In the global environment, a leader's major focus will be on maintaining commitment and trust. Team trust and efficiency can be increased by providing foreign language and cultural difference training for new team members (Oertig & Buergi, 2006).

Training should strive to become individually-focused with an orientation towards the near future and solving short-term performance challenges. Fostering proper leader roles and attitudes remains sufficient for effective IT leadership. Leaders are urged to fill communication gaps (learning how to give sufficient feedback, resolve conflict, and have confidence in communicating), promote trust (learning how to express appreciation and acceptance, a sense of community, and structured support) and motivate the team (learning how to gain empowering skills, reduce discomfort, and increase the benefits). Continuous observation and assessment of the leader's performance is useful in the development of specific competencies (like decision-making and problem-solving strategies) (Brownell, 2006), value-added skills (teamwork facilitation, operational effectiveness, and sharing knowledge), and task management skills (team efficacy, teamwork, cooperation, and collective efficacy), which encounter effective management of human resources. Experiential learning activities and training can be used to trace the development of leaders as they advance through each stage of learning. Increased interest in the 'delivery' of leadership programmes

is observed (Tung, 2014). There is growing evidence in the efficiency of networking, mentoring, coaching, and facilitation training programmes (Brownell, 2006; Tung, 2014). The content of training programmes and the lecturer competencies are particularly relevant in the context of cross-cultural training (Magnusson et al., 2014).

Programmes for global leadership development must be attentive to the following global organisational contexts: organisational climate, organisational dynamics, structure, external stress, and stability. Functional and cultural diversity in the team context is linked with leadership efficiency and, therefore, must be assessed in the executives' educational process. Developing competencies might have individually focused training as a short-term performance goal (Caligiuri, 2006).

Sufficient educational interventions can improve individuals' effectiveness concerning global leadership challenges. Practice through cross-training encourages appropriate roles, sufficient leadership style and attitudes by modelling and practising other critical competencies that are beneficial for global IT leaders. Attentive preparation for global leadership during programme development will contribute to developing the required traits, attitudes, and related capabilities. Gathered information about required competencies for global IT leaders may be used in the recruitment process, career development, appraisal, and talent identification and in assessing organisational threats or in identifying training needs.

CONCLUSION

The global leadership competency model is useful for analysing global IT leadership and assessing how personality traits, characteristics, and abilities are related to an IT leader's effectiveness. Results reveal that personality traits (extraversion, awareness, and openness to experience), personal character (self-esteem, self-efficiency, global mindset, and motivation), abilities (communication skills, leadership style, and experience) are significant for a global IT leader's efficiency and encourage successful management in an IT organisation and may be developed through experience and exposure to effective global IT leaders.

Local and global leaders differ in the significance of social intelligence. Emotional intelligence and IQ are significant for effective regional leadership. Meanwhile, cultural intelligence was associated with global leadership efficiency.

Appropriate global IT leadership development can positively affect globalisation consequences for the organisation. Strengthening personality traits related to performance; eliminating communication gaps; regaining cultural differences; promoting trust and motivation; fostering a leader's proper roles and attitudes; composing teams based on teamwork and task work; and modelling and practising other critical competencies are significant for effective global IT leadership and can be developed through specific educational activities. Individually-tailored educational activities must be oriented towards cultural and functional diversity and the global organisational context, focusing on the near future and solving short-term performance challenges, thus reinforcing preparation for global leadership.

REFERENCES

Blasco, M., Feldt, L. E., & Jakobsen, M. (2012). If Only Cultural Chameleons Could Fly Too: A Critical Discussion of the Concept of Cultural Intelligence. *International Journal of Cross Cultural Management, 12*(2), 229–245. doi: 10.1177/1470595812439872

Boehm B.W., Clark B, Horowitz E., Westland C., Madachy R, & Selby R.W. (1995) Cost Models for Future Software Life Cycle Processes: COCOMO 2.0. *Annals of software engineering*, 1(1), 57–94. doi: 10.1007/BF02249046

Brownell, J. (2006). Meeting the Competency Needs of Global Leaders: a Partnership Approach. *Human Resource Management, 45*, 3. doi: 10.1002/hrm.20115

Caligiuri, P. (2006). Developing Global Leaders. *Human Resource Management Review, 16*, 219–228. doi: 10.1016/j.hrmr.2006.03.009.

Colquitt, J. A., Hollenbeck, J. R., Ilgen, D. R., LePine, J. A., & Sheppard, L. (2002). Computer-Assisted Communication and Team Decision-making Performance: the Moderating Effect of Openness to Experience. *Journal of Applied Psychology, 87*(2), 402. Accessed in November 2018. Retrieved from: https://media.terry.uga.edu/socrates/publications/2013/06/ColquittHollenbeckIlgenLePineSheppard2002.pdf

Creasy, T., & Anantatmula, V. S. (2013). From Every Direction - How Personality Traits and Dimensions of Project Managers Can Conceptually Affect Project Success. *Project Management Journal, 44*(6), 36–51. doi: 10.1002/pmj.21372

Crowne, K. A. (2008). What Leads to Cultural Intelligence? *Business Horizons, 51*(5), 391–399. doi: 10.1016/j.bushor.2008.03.010

Dittrich, Y., John, M., Singer, J., &Tessem, B., (2007). For the Special Issue on Qualitative Software Engineering Research. *Information and Software Technology* 49(6), 531–539. doi: 10.1016/j.infsof.2007.02.009

Eisenberg, J., Lee, H. J., Brück, F., Brenner, B., Claes, M. T., Mironski, J., Bell, R. (2013). Can Business Schools Make Students Culturally Competent? Effects of Cross-cultural Management Courses on Cultural Intelligence. *Academy of Management Learning & Education, 12*(4), 603–621. doi: 10.5465/ amle.2012.0022

Eom, M. T. I. (2015). How Can Organization Retain IT Personnel? Impact of IT Manager's Leadership on IT Personnel's Intention to Stay. *Information Systems Management, 32*(4), 316–330. doi: 10.1080/10580530.2015.1080001

Espinosa, J. A., Nan, N., & Carmel, E. (2015). Temporal Distance, Communication Patterns, and Task Performance in Teams. *Journal of Management Information Systems, 32*(1), 151–191. doi: 10.1080/07421222.2015.1029390

Galvin, T., Gibbs, M., Sullivan, J., & Williams, C. (2014). Leadership Competencies of Project Managers: An Empirical Study of Emotional, Intellectual, and Managerial Dimensions. *Journal of Economic Development, Management, IT, Finance, and Marketing, 6*(1), 35. Accessed in November 2018. Retrieved from: http:// web.a.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=0&sid=dbee29de-2c7c-4739-b29b-dbc41d66f537%40sdc-v-sessmgr02

Glass, R. L., Vessey, I., & Ramesh, V., (2002). Research in Software Engineering: an Analysis of the Literature. *Information and Software Technology* 44(8), 491–506. doi: 10.1016/S0950-5849(02)00049-6

Herbert, K., Mockaitis, A. I., & Zanderb, L. (2014). An Opportunity for East and West to Share Leadership: A Multicultural Analysis of Shared Leadership Preferences in Global Teams. *Asian Business & Management, 13*(3), 257–282. Accessed in November 2018. Retrieved from: https://doi.org/10.1057/abm.2014.10

Hoch, J. E., & Kozlowski, S. W. (2014). Leading Virtual Teams: Hierarchical Leadership, Structural Supports, and Shared Team Leadership. *Journal of Applied Psychology, 99*(3), 390. doi: 10.1037/a0030264

Javidan, M., Bullough, A., & Dibble, R. (2016). Mind the Gap: Gender Differences in Global Leadership Self-efficacies. *The Academy of Management Perspectives, 30*(1), 59–73. doi: 10.5465/amp.2015.0035

Jokinen, T. (2005). Global Leadership Competencies: A Review and Discussion. *Journal of European Industrial Training, 29*(3), 199–216. doi: 10.1108/03090590510591085.

Joshi, A., & Lazarova, M. (2005). Do 'Global' Teams Need 'Global' Leaders? Identifying Leadership Competencies in Multinational Teams. *Advances in International Management, 18*, 281–302. doi: 10.1016/S0747-7929(05)18011-1.

Judge, W. Q. (2001). Is a Leader's Character Culture-bound or Culture-free? An Empirical Comparison of the Character Traits of American and Taiwanese CEOs. *Journal of Leadership Studies, 8*(2), 63–78. Accessed in November 2018. Retrieved from: https://doi.org/10.1177/107179190100800205

Kaufeld, U. N., Chari, V., & Freeme, D. (2009). Critical Success Factors for Effective IT Leadership. *Electronic Journal of Information Systems Evaluation*, 12(1). Accessed in November 2018. Retrieved from: https://pdfs.semanticscholar.org/77de/6b26a737d6e83f69bba9b5e99bf15421a914.pdf

Kim, J., & McLean, G.N. (2015). An Integrative Framework for Global Leadership Competency: Levels and Dimensions. *Human Resource Development International, 18*(3), 235–258. doi: 10.1080/13678868.2014.1003721

Li, M., Mobley, W. H., & Kelly, A. (2013). When do Global Leaders Learn Best to Develop Cultural Intelligence? An Investigation of the Moderating Role of Experiential Learning Style. *Academy of Management Learning & Education, 12*(1), 32–50. Accessed in November 2018. Retrieved from: https://doi.org/10.5465/amle.2011.0014

Liborius, P. (2014). Who is Worthy of Being Followed? The Impact of Leaders' Character and the Moderating Role of Followers' Personality. *The Journal of Psychology, 148*(3), 347–385. doi: 10.1080/00223980.2013.801335

Lisak, A., & Erez, M. (2015). Leadership Emergence in Multicultural Teams: The Power of Global Characteristics. *Journal of World Business. 50*, 3–14. doi: 10.1016/j.jwb.2014.01.002

Magnusson, P., Schuster, A., & Taras, V. (2014). A Process-based Explanation of the Psychic Distance Paradox: Evidence from Global Virtual Teams. *Management International Review, 54* (3), 283–306. doi: 10.1007/s11575-014-0208-5

Magnusson, P., Westjohn, S. A., Semenov, A. V., Randrianasolo, A. A., & Zdravkovic, S. (2013). The Role of Cultural Intelligence in Marketing Adaptation and Export Performance. *Journal of Marketing Research, 21*(4), 44–61. doi: 10.1509/jim.13.0055

Mendenhall, M. E., Reiche, B. S., Bird, A., & Osland, J. S. (2012). Defining the "Global" in Global Leadership. *Journal of World Business, 47*(4), 493–503. doi: 10.1016/j.jwb.2012.01.003

McCall, M. W., & Hollenbeck, G. P. (2002). Developing Global Executives: The Lessons of International Experience. Boston, MA: Harvard Business School Press.

Morgan, L., Paucar-Caceres, A., & Wright, G. (2014). Leading Effective Global Virtual Teams: The Consequences of Methods of Communication. *Systemic Practice and Action Research, 27*(6), 607–624. doi: 10.1007/s11213-014-9315-2

Morrison, A. J. (2000). Developing a Global Leadership Model. *Human resource management, 39*(2, 3), 117. doi: 10.1002/1099-050X(200022/23)39:2/33.0.CO;2-1

Naik, Y. N., & Bisht, M. (2014). Structural Equation Model for Effectiveness of Technical Managers in Information Technology Industry. *International Journal of Supply Chain Management*, 3(3). Accessed in November 2018. Retrieved from: https://ojs.excelingtech.co.uk/index.php/IJSCM/article/viewFile/974/pdf

Ng, K. Y., Van Dyne, L., & Ang, S. (2012). Cultural Intelligence: A Review, Reflections, and Recommendations for Future Research. In Ryan, A. M., Leong, F. T., Oswald, F. L. *Conducting multinational research: Applying organizational psychology in the workplace,* 29–58. Washington, DC: American Psychological Association. Accessed in November 2018. Retrieved from: https://pdfs. semanticscholar.org/0179/bb9b4a676f320ed35458580d529a8cb44f59.pdf

Oertig, M., & Buergi, T. (2006). The Challenges of Managing Cross-cultural Virtual Project Teams. *Team Performance Management: An International Journal, 12*(1/2), 23–30. doi: 10.1108/13527590610652774

Post, C. (2015). When is Female Leadership an Advantage? Coordination Requirements, Team Cohesion, and Team Interaction Norms. *Journal of Organizational Behaviour, 36*(8), 1153–1175. doi: 10.1002/job.2031

Purvanova, R. K. (2014). Face-to-face Versus Virtual Teams: What Have We Really Learned? *The Psychologist-Manager, 17*, 2–29. doi: 10.1037/mgr0000009

Quisenberry, W., & Burrell, D. N. (2012). Establishing a Cycle of Success by Utilizing Transactional Leadership, Technology, Trust, and Relationship Building on High Performing Self-managed Virtual Teams. *Review of Management Innovation & Creativity, 5*(16), 97–116. Accessed in November 2018. Retrieved from: http://www.intellectbase.org

Rocksthul, T., Seiler, S., Ang, S., Van Dyne, L., & Annen, H. (2011). Beyond General Intelligence (IQ) and Emotional Intelligence (EQ): the Role of Cultural Intelligence on Cross-border Leadership Effectiveness in Globalized World. *Journal of Social Issues, 67*(4), 825–840. doi: 10.1111/j.1540-4560.2011.01730.x

Salas, E., Shuffler, M. L., Thayer, A. L., Bedwell, W. L., & Lazzara, E. H. (2015). Understanding and Improving Teamwork in Organizations: A Scientifically Based Practical Guide. *Human Resource Management, 54*(4), 599–622. doi: 10.1002/hrm.21628

Sawyer, S., & Guinan, P. J., 1998. Software Development: Processes and Performance. *IBM Systems Journal* 37(4), 552–569. doi: 10.1147/sj.374.0552

Segawa, J. K. (2015). A Domain-based and Integrated Conceptual Framework for Effective Project Leadership. *West Indian Journal of Engineering, 38*(1), 4–14. Accessed in November 2018. Retrieved from: http://sta.uwi.edu/eng/wije/

Seijts, G., Gandz, J., Crossan, M., & Reno, M. (2015). Character Matters: Character Dimensions' Impact on Leader Performance and Outcomes. *Organizational Dynamics, 44*(1), 65–74. doi: 10.1016/j.orgdyn.2014.11.008

Sjoeberg, D. I. K., Hannay, J. E., Hansen, O., Kampenes, V. B., Karahasanovic, A., Liborg, N. K., Rekdal, A. C. (2005). A Survey of Controlled Experiments in Software Engineering. *IEEE Transactionson Software Engineering* 31(9), 733–753. doi: 10.1109/TSE.2005.97

Solaja, M. O., Idowu, E. F., & James, E. A. (2016). Exploring the Relationship Between Leadership Communication Style, Personality Trait and Organizational Productivity. *Serbian Journal of Management, 11*(1), 99–117. doi: 10.5937/sjm11-8480

Spencer, L. M. Jr., & Spencer, S. M. (1993). *Competence at work: Models for superior performance*. New York: John Wiley & Sons.

Tung, R. L. (2014). Distinguished Scholar Invited Essay Requisites to and Ways of Developing a Global Mind-set: Implications for Research on Leadership and Organizations. *Journal of Leadership & Organizational Studies, 21*(4), 329–337.

Turel, O., & Connelly, C. E. (2012). Team spirit: The Influence of Psychological Collectivism on the Usage of Ecollaboration Tools. *Group Decision and Negotiation, 21*(5), 703–725. Accessed in November 2018. Retrieved from: https://doi.org/10.1007/s10726-011-9245-7

Wu, J. H., Chen, Y. C., & Lin, H. H. (2004). Developing a Set of Management Needs for IS Managers: a Study of Necessary Managerial Activities and Skills. *Information & Management*, 41(4), 413–429. doi: 10.1016/S0378-7206(03)00081-8

Wynekoop, J. L., & Walz, D. B. (1998). Revisiting the Perennial Question: Are IS People Different? *ACM SIGMIS Database, 29*(2), 62–72. doi: 10.1145/298752.298759

Zander, L., Mockaitis, A. I., & Butler, C. L. (2012). Leading Global Teams. *Journal of World Business, 47*(4), 592–603. doi: 10.1016/j.jwb.2012.01.012

PSICHOLOGINIŲ VEIKSNIŲ SVARBA VADOVO EFEKTYVUMUI GLOBALIOSE IT ORGANIZACIJOSE

Lina Cirtautienė, Auksė Endriulaitienė
Vytauto Didžiojo universitetas, Lietuva

Santrauka. *Problema.* Kintama verslo aplinka, specifinis informacinių technologijų sektorius, dideli lūkesčiai IT sprendimams reikalauja kitokio vadovavimo. Tarptautinėje organizacijoje vadovo technologinės, organizacinės, socialinės ir emocinės kompetencijos tapo vienodai svarbios. Tačiau esami tyrimai taptautiniam efektyviam vadovavimui svarbius veiksnius pristato segmentiškai. Neaišku, kokie psichologiniai veiksniai siejasi su vadovų veiklos efektyvumu tarptautinėje ir regioninėje IT organizacijoje. ***Tikslas*** – išanalizuoti literatūroje pateikiamus tyrimų rezultatus, kokie psichologiniai veiksniai yra svarbūs vadovų veiklos efektyvumui tarptautinėse IT organizacijose. ***Metodas.*** Sisteminė literatūros analizė. Psichologiniai veiksniai reikšmingi efektyviai IT lyderystei pateikti pagal trijų lygių (bruožai, savybės, gebėjimai) ir keturių dimensijų (tarpkultūriniai, tarpasmeniniai, globalaus verslo, globalios organizacijos) kompetencijų modelį (Kim ir McLean, 2015). ***Rezultatai ir išvados.*** Rezultatai parodė, kad vadovavimo efektyvumui svarbiausi veiksniai susiję su adaptacija prie kultūrinės aplinkos. Asmenybės bruožai (ekstraversija, saviveiksmingumas ir atvirumas patirčiai), savybės (pasitikėjimas savimi, saviveiksmingumas, globali mąstysena ir motyvacija) ir gebėjimai (bendravimo įgūdžiai, lyderystės stilius ir patirtis) pritaikomi reaguojant į pakitusią organizacinę aplinką ir susiję su vadovavimo efektyvumu. Socialinių kompetencijų (IQ, EQ ir CQ) reikšmė skirtinga tarptautinių

ir regioninių organizacijų vadovams. Tinkamos ugdomosios intervencijos gali prisidėti didinant vadovų efektyvumą globalioje aplinkoje. Straipsnyje pateikiamos ugdymo gairės IT vadovams, susiję su asmenybės bruožų svarbių veiklos efektyvumui stiprinimu; bendravimo įgūdžių ugdymu; prisitaikymu prie kultūrinių skirtumų; pasitikėjimo ir motyvacijos skatinimu; dėmesiu vadovavimo stiliui ir nuostatoms; komandinio darbo ir orientacijos į užduotis skatinimu; globaliai lyderystei svarbių kompetencijų stiprinimu mokymų metu.

Reikšminiai žodžiai: IT lyderystė, globali lyderystė, efektyvumas, kompetencijos.