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Analysis of competencies for effective virtual team leadership in building successful organisations

Abstract:
Purpose
Global competition and advances in technology have enhanced the growing trend of virtual teams in order to execute business strategies. Thus, understanding the competencies needed for virtual leadership effectiveness is essential and vital to organisational success. The purpose of this paper is to identify and analyse the required competencies for virtual team leadership and its effectiveness in an organisation.

Design/methodology/approach
The study adopted case study methodology to undertake an exploratory study of a manufacturing organisation. Using a questionnaire that was designed following a focussed literature review to identify the specific virtual leadership competencies, structured interviews were conducted face-to-face with 14 respondents from two major virtual team groups. The interviews were designed to elucidate the opinions and perceptions of virtual team members with respect to selected characteristics of their virtual team leaders (VTLs). The responses obtained were analysed using descriptive statistics and thematic analysis.

Findings
The study identified the competencies required for effective leadership in virtual teams in order to achieve the organisational project success. The performance of the two VTLs in the organisation was then assessed in the light of these identified competencies. The study also identified transformational leaders as important to be considered when selecting VTLs because they are known to achieve high-performing team. However, the study found that considering the virtual leadership competencies, the two VTLs were found to have not, on the whole, performed well because they are lacking in some of the leadership competencies required for effective leadership in a virtual team and this has led to their organisation not achieving the required success in virtual teams.

Practical implications
The study has implications for organisations' virtual team project leaders. The identification of specific leadership competencies for virtual team leadership will enable organisations to be more informed when looking for effective leaders in their virtual teams in order to achieve high-performing virtual teams, which will lead to organisational growth and success. The study is expected to enhance the success rate of any typical organisation using virtual teams.

Originality/value
The study would be highly beneficial to both the potential and current stakeholder organisations considering virtual teams to execute business strategies. This study has also added to the body of knowledge by further exploring the leadership competencies needed for virtual teams.

Introduction
In recent years, activities in all types of organisation have generally become more and more global. Competition from both domestic and international sources has grown drastically, and there has been a continued shift from traditional service production to virtual service work environments

(Hossein, 2012). Advances in information and communication technology (ICT) have enabled a quicker speed of change than in the past and has created jobs that are increasingly more complex and dynamic (Hunsaker and Hunsaker, 2008). Faced with this wide and dramatic change in business activities, organisational structures, communication, strategies, processes, and policies, the need for effective virtual team leadership has arisen.

Virtual teaming is a new way of organising work that allows people to work together even though they are geographically separated. Consequently, the need of effective leadership to manage such complex environment is essential to achieving successful organisation (Hossein, 2012). Virtual teams are groups of organisationally dispersed co-workers that are assembled using a combination of telecommunications and information technologies to accomplish an organisational task, which in turn achieve organisational success (Maholta *et al.*, 2007). People working in virtual teams use technology to communicate with one another, rather than working face-to-face or travelling to meetings; this makes virtual team working very different from traditional team working. Because of this, if there is a lack of an effective VTL, projects executed by virtual teams will potentially fail (Weisban, 2008).

Bergiel *et al.* (2008) considered virtual teams to be on the continuous rise, with approximately one-quarter of a billion people already working online globally. In 2001, 8.4 million employees in the USA were members of one or more virtual team (Bergiel *et al.*, 2008). Furthermore, Hertel *et al.* (2005) founded that 376 business managers from different countries indicated that approximately 40 per cent of the managers worked at least temporarily as leaders in virtual teams and 20 per cent approximately worked mostly as members of virtual teams. It is estimated that 41 million corporate employees globally spend at least one day a week as virtual workers and 8 million work from home at least one day in a month (Jury, 2008). Mogale (2009) suggested that leading from a distance requires the application of a unique skill set; explaining that people who have not previously worked as a virtual team member will neither understand nor recognise its importance. Kayworth and Leidner (2001) stated that VTLs face a fundamentally different and very complex work environment than their traditional team counterparts. A leader's social presence may be difficult to achieve in a virtual environment; thus, creating challenges in team integration, member identification, and coordination (Connaughton and Daly, 2004). It has been argued that the major difference between mediocre and high-performing virtual teams is the development of effective virtual leaders who are able to develop and lead the virtual team to achieve success in project deliverables (Armstrong and Cole, 2002; Piccoli *et al.*, 2004).

In view of this, the relevance of effective leadership in virtual teams cannot be overemphasised. Leaders of virtual teams should know and acknowledge the differences that exist between this kind of environment and conventional teamwork, to ensure they effectively lead a high-performing team driven towards project success (Turkay and Tirthali, 2010). Team leaders, whether assigned or emergent, formal or informal, have a significant role to play when directing the formation of high-performing teams (Ebrahim *et al.*, 2009). Turkay and Tirthali (2010) argued that effective leadership with virtual leadership competence has been shown to be a significant factor in achieving successful project deliverables. Fleming (2006) claimed that behavioural integration, management of conflicts, collaboration, positive project outcomes, and timely projects can all be linked to effective project leaders who have desirable competencies. Therefore, leaders of virtual teams should adopt a transformational leadership style that will be beneficial to the team's objectives: inculcating the specific leadership competencies that are needed to effectively manage or lead members to optimal performance and attain key team objectives. This in turn leads to project success in virtual

organisations. It is against this backdrop that this study becomes important with a view to identifying and assessing the competencies for effective virtual team leadership in building successful organisations. However, it would be remiss to discuss virtual team leadership without describing what leadership is; clearly stating the types of leadership styles that exist; and explaining how it is relevant to achieving successful virtual teams, which in turn leads organisational success.

The study presents a literature review on the need for virtual team in building successful organisation; what is leadership and types of leadership; the concept of a virtual team; and virtual team leadership competencies. Then, the findings from the case study are presented and conclusions are drawn from the findings.

The need for virtual team in building successful organisation

It is evident in today's world that organisations no longer operate as stand-alone entities, but create networks of customers, suppliers, and partners through virtual teaming for organisational growth success (Jarvempaa and Tanriverdi, 2003). Building a successful organisation in today's globalised economy cannot be successfully achieved without effective leadership in the virtual team projects. The growing popularity of the virtual teaming in achieving a growth and success of organisations has led a shift from production to service-related business (Kayworth and Leidner, 2001), and has changed the ways work is organised and managed. Such changes have mainly been facilitated by ICTs that improve knowledge management, which in turn helps to build successful organisations (Jarvempaa and Tanriverdi, 2003), in addition to the dissemination of information on the global level. In essence, virtual teams have created new working methods and flexibility for achieving successful organisations (Townsend *et al.*, 1998).

Leadership and styles of leadership

Weisban (2008) defined leadership as the influencing of behaviours and attitude of individuals, including the interaction within and between groups regarding goals and vision achievements. According to Donald (2004), leadership is the use of social influence and power to direct or change the character of others, and continues to state this power can be through energy flowing through a social network of influence in the organisation. Discussions on leadership styles have always come to the fore when effective leadership is discussed, particularly in a virtual team. Bass *et al.* (2003), first, introduced present distinctive leadership styles, which are transformational and transactional. In a similar vein, Berson and Avolio (2004) indicated that there are different or numerous leadership styles; however, transactional and transformational leadership styles are the most important and specific to the virtual team. For the purpose of this study, transactional and transformational leadership styles will be the focus of discussion with respect to the virtual team leadership.

Riggio (2009) described transformational leadership as a leadership style that facilitates the redefinition of people's vision and mission with a renewal of their dedication and restructuring of their system for the accomplishment of goals. Riggio further argued that it is a leadership style by the relationship which deals or encourages mutual stimulation of team members which elevates followers into leaders and perhaps converts leaders into moral agents. Transformational leaders are known to promote trust, loyalty, admiration, and respect amongst followers (Bono *et al.*, 2012). This leadership style is very helpful for team high performance and project success. Purvanova and Bono (2009) presented an argument on virtual leadership; they have stated that transformational leadership is very effective, whether in a virtual team or traditional team, notwithstanding culture. This leadership style has always performed above average in terms of team and organisational performance, mostly under crises ridden situations and uncertainty conditions (Bono *et al.*, 2012). Ewen *et al.* (2013), in describing transactional leadership, stated that in Maslow's hierarchy of

needs, transactional leaders are described as leaders that are concerned with the basic levels of need of satisfaction, and they focussed on the lower levels of hierarchy by stressing specific or significant task performance. This kind of leadership in a virtual team will not be as effective as transformational leadership, because leadership by exception, reward, or punishment would not produce the much-needed result in a virtual setting (Hunsaker and Hunsaker, 2008).

Concept of a virtual team
The need to address the competitive demands of globalisation through the adoption of electronic communication and information technology within the workplace has made many organisations embrace virtual team structures (Bal and Teo, 2000; Piccoli *et al.*, 2004; Mogale, 2009). The concept of the virtual team evolved from teleworkers and virtual groups. Teleworkers are characterised by working partially, or completely, outside of their main company's workplace with the help of information and telecommunication services (Hossein, 2012). As the advancement of technology continues, and organisations need to run projects across the globe, the concept of teleworkers then evolved to virtual groups that are characterised by several teleworkers reporting to the same manager. Virtual groups then evolved to virtual teams characterised by virtual groups interacting with one another to accomplish common goals (Zigurs, 2003; Hanson, 2007; Mogale, 2009).

There are several definitions for virtual teams. Within the context of this study, Kirkman *et al.* (2002) defined a virtual team as a group of people who work interdependently with a shared purpose, across space, time, and organisational boundaries, using ICT to communicate and collaborate. Teams embodied within the organisational structure which is permanent report directly to managers who may be based in different countries across the globe (Kayworth and Leidner, 2001). However, Bal and Teo (2000) argued that virtual teams are not permanent teams, because most, at times, embark on short-term projects; thus, they only assemble on a needed plan or specific task. Hertel *et al.* (2005) observed that there are limitations to the aforementioned definitions of a virtual team. They stated that the level of the virtuality of a team can be complicated by the level of diversity amongst team members in countries with multiple time zones; therefore, the need for effective virtual leaders to effectively pilot the affairs of the teams to overcome the limitations for project success is not negotiable. It is on this premise that leaders of the virtual team should be conscious of complexities, dimensions, complications, and limitations of a virtual team; additionally, they must develop the needed competencies to effectively manage such a team (Hertel *et al.*, 2005; Hanson, 2007).

Virtual team leadership competencies
There are several definitions of competencies. For instance, Hossein (2012) described competencies as the characteristics of a leader that leads to the demonstration of skills and abilities, which results in effective performance within an occupational area. Competencies are a combination of knowledge, skills, and abilities which are relevant to a particular job position, and which, when acquired, allows a person to perform a task or function to a high level of proficiency and effectiveness (Jordan, 2012). It should be noted that competencies may include personal and professional aspects. The personal aspects are the skills, attitudes, and values that underlie the work; while the professional ones address the way in which we apply the knowledge to work in an organisational setting (Van, 2004; Dole *et al.*, 2005). Kramer (2005) claimed that traditional leadership has its competencies, but virtual team leadership competencies differ; thus, the needed leadership competencies tend to increase in virtual teams. It has been argued that virtual leaders lacking in specific leadership competencies usually are not effective leaders and do not achieve high-performing teams (Hunsaker and Hunsaker, 2008; Hossein, 2012). Furthermore, project leadership

and its concepts have drawn much attention over the years and several bodies of literature have emerged. But, according to Mogale (2009), none have dealt much with the effective leadership competencies required for the virtual team. A selection of the specific virtual leadership competencies are discussed below.

Ability to build trust

Trust is a leader's propensity to easily facilitate cohesion, task, and build a relationship: it is vital in achieving project success (Hunsaker and Hunsaker, 2008). Tyrant *et al*. (2003) categorised trust in three types: altruistic trust, which is not selfish and deals with the concern for the welfare of others; performance trust, which is to be reliable; and affective trust, which deals with team performance. Thus, it is one that has stronger positive performance relationship with team members. Trust issues from many empirical studies on leadership have been discovered to play a significant role in the success of a team. Zaccaro and Bader (2003) came up with a model which suggested that there are following stages of trust development: calculus trust, which develops during the formation of a new team and leads, highlights, and enhances the importance and essence of members working together to consistently and responsibly trust themselves across team situations; and knowledge trust, which arises when members get to know one another better and are able to anticipate in their behaviours and actions.

Bergiel *et al.* (2008) argued that trust development is efficient, and when it exists, team members are able to save time and trouble in their resultant ability to rely on someone else's word. They continued to suggest that trust is relevant when team members are proactive in their attainment of optimal performance. This is because trust is one of the relevant leadership competencies that must be developed and built by virtual leaders, but in traditional teams, trust is easier to build during face-to-face interactions. In research findings by Brake (2005), it is explicitly stated that if VTLs are to experience efficiency and other relevant benefits from members, they will have to rediscover how to run teams based on trust rather than control. Brake continued to argue that ability to build trust is a virtual leadership competence that is non-negotiable if virtual teams are to achieve optimal success. Building and developing trust is invaluable in team formation, especially for an initialising standpoint. Relationships are successful due to trust development, and to virtual teams, it is a must for project success (Hossein, 2012). Building trust by VTLs is always helpful for the speedy delivery of tasks, because team members can be counted upon (Snellman, 2014). Furthermore, Clark *et al.* (2010) suggested that the ability to build trust by team leaders is fundamental to successful formation and growth of any team, particularly in a virtual team, to achieve organisational success.

Ability to build team orientation and integration

Kurt (2012) claimed that at its creation, a new virtual team, in essence, starts like a collection of individuals. The role of the leader from the onset is to develop this new team into a coherent and integrated work unit, whose ability to self-manage itself is essential. To be able to achieve this, effective leaders must build team orientation, which is shaping perception and creating a positive attitude of members; and the creation of a common goal. "Team orientation" describes or represents the bond that ties team members to one another and helps in achieving team mission. Once this environment is formed, two leadership functions emerge: team development; and performance management (Zaccaro and Bader, 2003; Hunsaker and Hunsaker, 2008).

Effective communication

Brown *et al.* (2007) indicated that 70 per cent of exchanged information in face-to-face communication is non-verbal, which disappears in a virtual team. With the growing trend of virtual

team projects, communication is essential, because it plays a vital role to conquer the inherent uncertainties present in the virtual environment (Bal and Teo, 2000; Hossein, 2012). Organisations investing in virtual projects should be aware that acquiring advanced and sophisticated communication technologies, which lead to more access to information, should be able to provide essential training for virtual leaders to ensure effective communication in virtual teams is established, which in turn leads to organisational success. Communication differs when team members from a varied background and culture meet, their style and group behaviour varies. This, therefore, prompts a leader to use motivation to seek and disclose individual's information to achieve shared knowledge (Lucas, 2007). Anderson *et al.* (2007) and Hossein (2012)suggested that, in the early development of a virtual team, effective communication remains a core leadership competency for VTLs to achieve and is required when building a successful organisation. They continued to argue that the quantity and quality of communication given by VTLs to their team members are invaluable to building, gaining, and maintaining trust. In a similar vein, Bergiel *et al.* (2008) argued that virtual team members must, as a matter of importance, know or learn how to excel as effective communicators because every team success is dependent, to a large extent, on the quantity and quality of information provided by virtual leaders to their team members. Bergiel *et al*. further argued that the ability of virtual leaders to communicate effectively and efficiently to their members in a varied place and time is a key competence needed for virtual team success.

Personal characteristics

Luthans and Youssef (2004), Luthans *et al.* (2007), and Kurt (2012) stated four components of personal characteristics that are essential in virtual leadership for project success. They include: self-efficacy, which is the individual's confidence in their ability to complete specific tasks or specified tasks; hope, which is conceptualised as the cognitive ability to set realistic, yet challenging goals, and then developing paths and controlling behaviour in order to attain certain goals; optimism is the expectation of positive and desirable future outcomes, of course, optimism must be flexible and realistic; and resilience, the ability to come back from adversity or failure and at the same time pushing forward without discouragement. Avey *et al.* (2010) argued that these should simultaneously be combined with high performance. Together they have been shown to explain unique variances in organisational outcomes/performance, particularly in virtual team settings.

Goal direction

Due to lack of face-to-face interactions in a virtual team, leaders must have the ability to provide clear directions and set clear individual goals and objectives that will be understood by team members (Kurt, 2012). Clearly defined goals and objectives, communicated and understood by virtual team members, have been identified by several authors, for example, Bal and Teo (2000), Brake (2005), Bergiel *et al.* (2008), Hunsaker and Hunsaker (2008), as critical success factors for virtual teams. Brake (2005) argued that the strategy to ensure effective leadership in virtual teams is: "beating confusion through promoting clarity". Similarly, Arvidsson *et al.* (2007) stated that assigning tasks, specifying the procedure and clarifying expectations, have been shown to result in reduced role ambiguity and increased job satisfaction in employees; factors that are also important in bringing project success. Clear goals, visions, and directions enable and help individual self-regulation, as well as enabling members of a team to monitor and evaluate their own performance. As Kurt (2012) argued that the provision of such clarity is clearly relevant and of extreme importance in achieving project success in a virtual setting.

Ability to provide constant feedback

Geister *et al.* (2006) have suggested that virtual team members can feel insecure because of lack of process feedback (where "process feedback" is defined as the information concerning how one performs a job as opposed to "outcome feedback", which concerns actual performance outcomes). The ability of a virtual leader to provide constant feedback is essential to achieving high-performance outcomes in a team. Also, providing feedback is very important for project success in terms of developing and maintaining trust (Jarvenpaa, 1998); for reaching an understanding and mutual agreement amongst members (Olson and Olson, 2006); for overall team performance coming from managers to subordinates (Duarte and Snyder, 2001); and, generally, for improving the motivation, satisfaction, and performance of team members (Geister *et al.*, 2006).

Operational coordinating and conflict resolution ability
A VTL must possess operational coordinating abilities, which include ability to monitor team members, team assessment, and conflict resolution amongst team members. Hunsaker and Hunsaker (2008) stated that these coordinating abilities include effective monitoring, identifying conflicts and resolving it, motivating members when necessary, and empowering the right resources to tackle tasks or problems. This further implies that a virtual leader must have the ability to coordinate effective logistic systems, appropriate team assessment in order resolve sometimes unavoidable conflicts of interests within team members; hence achieving targeted project or organisational objectives (Linkow, 2008).

Technology skills/knowledge
Leaders must bring on board added value in terms of the business or technical skills that give credibility to their roles. For example, Cascio and Shurygailo (2003) argued that one of the competencies needed by effective leadership is the capability of the leader in a virtual team to know how and when to utilise the communications technology provided, and to recognise the need to properly educate members on proper use. Virtual leadership effectiveness is demonstrated through ICT. As a result of this, leaders must ensure that members have knowledge of how to operate these technologies so as to be fit for purpose. Also, any technology tool chosen by a team leader to use for the project must be appropriate to his/her knowledge and members' knowledge in order to communicate essential project information effectively (Zigurs, 2003).

Awareness
Hunsaker and Hunsaker (2008) listed the essentials for effective virtual team leadership as awareness of the team's overall mission, its strengths and weaknesses, and its group dynamics. They highlighted three types of awareness essential for team synergy: activity awareness, which is awareness of members' availability and schedules; process awareness, which is having an understanding of project sequence and how each individual task fits within the overall project; and social awareness, which is knowledge about the members of the team and their social environments and interactions. Thus, when leaders know about the people in their teams and their way of life, they will be able to make sound judgements at the workplace, if any issue arise. Not only that, but they should be aware of the work team members are doing, their deadlines, availability, and their feelings. Such awareness will enable them to take action to correct poor performance, poor outcomes or loss of synergy (Kurt, 2012). Zigurs (2003) noted the importance for VTLs of observing and assessing teams' group dynamics and responding where necessary.

Quality decision making
Leaders must be good decision makers in complex situations with multiple variables, and the ambiguities that particularly occur in a virtual environment (Kayworth and Leidner, 2001). Kurt

(2012) stated team members prefer leaders that make quality decisions and are assertive in their instructions and attitude because it tends to boost the confidence of members in carrying out their tasks in a complex environment.

Ability to monitor changes in environmental conditions
Bell and Kozlowski (2002) argued that for leaders of the virtual team to be effective, they need to closely monitor changes in environmental conditions. This is due to the fact that virtual teams are geographically distributed teams and are less aware of the border situations and dynamics of the overall team environment. They continue to argue that as external conditions (such as modified task, specifications, a new deadline or changes in team goals) change, leaders of virtual teams need to facilitate adaptive and appropriate variations within the team and ensure changes are put in place.

Reliability
Wright (2005) claimed that due to the nature of the virtual environment, the ability of a leader to be reliable cannot be overemphasised. Reliability is important in a traditional team, but when it has to do with virtual team leadership, it is essential for leaders of high-performing teams. Kramer (2005) emphasised the importance of a leader's reliability in enhancing performance amongst team members through increasing their confidence in the leaders' decisions.

Research methodology
The study adopted a case study approach to provide an empirical enquiry regarding the required competencies for effective leadership of a virtual team. Yin (2009) defined a case study as an empirical enquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between the phenomenon and the context are not clearly evident. Yin (2013) emphasised the use of case study methodologies because it can help find solutions to contextual problems. The validity of case study inquiry is accepted by the academic community, as a way of advancing and disseminating knowledge, particularly within professional and practical disciplines (Yin, 2013).

The company that was investigated was established in 1998 and its main activity is the production of plastics with cutting-edge technology. Their main goal is to be the leaders in providing the best quality and affordable plastic types in Nigeria, all over Africa and beyond. In 2005, they expanded and spread their presence across Nigeria and Sub-Saharan Africa, which led to virtual team projects being established. However, the company has not achieved the expected success in their virtual teams as anticipated, due to the lack of leadership competencies to provide effective leadership which will, in turn, lead to organisational success. This has threatened further expansion of the company beyond Sub-Saharan Africa. In order to achieve a successful organisation through requisite leadership competencies in virtual teams and onward expansion in their virtual projects, the organisation requested an investigation be carried out on their two VTLs using relevant kinds of literature to identify required leadership competencies needed in virtual teams in order to achieve their objective of building a successful organisation.

The investigation is also intended to evaluate and identify the short-comings of the company's VTLs and produce a list of their ineffectiveness or short-comings in order to guide them in future on how to improve and develop their VTLs in achieving high-performing teams. Creswell (2009) argued that the selection of the participants and cases does not necessarily involve a large number of participants and cases. The case study adopted within this investigation, therefore, provided the basis to compare and assess the competencies of the two VTLs in the organisation. The first VTL,

who was anonymised as virtual team leader A (VTL A), led a team that comprised of eight members. The second VTL – anonymised as virtual team leader B (VTL B) – led a team of six members. This would result in two virtual teams with a population of 14 team members that was adjudged suitable for the study; hence, the research population was limited to only the virtual team members in the two teams. Furthermore, virtual team members were required to have at least three years of experience working in a virtual team; thus, improving the reliability of the investigation.

In addition, an extensive, focussed literature review was conducted to identify the specific virtual leadership competencies and associated theories; these were then evaluated and used in the development of the interview questionnaire schedule. The study was interested in acquiring the team members' opinions and perceptions about good virtual team leadership, not the qualities of the VTLs themselves. It is on this premise that 14 face-to-face structured interviews were conducted within the case study, with team members drawn from the two virtual teams. The interview questions that were formulated following an evaluation of the literature review stage were sent to non-participant members of the organisation, but with knowledge of virtual team working, in order to identify any potential misunderstandings. Feedback from this pilot study enabled the question to be modified to ensure the questions were clear, focussed, and unbiased. The anonymised responses from each participant were revealed to the others for potential comment. This approach intended to eliminate bias and provide a validation stage to the primary data gathering process. The responses obtained where then analysed from using quantitative and qualitative techniques, i.e., descriptive statistical and thematic analysis.

Data analysis and discussion
In assessing the two VTLs, i.e., VTL A and VTL B, by their members in the case study organisation, specific questions were asked about the characteristics and competencies that make a VTL effective for project success in an organisation.

Figure 1 shows how the two teams under the both leaders VTL A and VTL B responded on how well they know their leaders. The responses from members under VTL A reveal that one (out of eight) member knows their VTL as a very close distant colleague, three (out of eight) members know their VTL as a close distant colleague, while two members identified their VTL as a distant colleague. Similarly, the responses from members under VTL B indicate that three (out of six) members recognised their VTL as a very distant colleague and the remaining three members identified their VTL as a distant colleague.

It can be deduced that VTL A has tendencies of being more of a mentor than the VTL B. This could be attributed to the fact that several members recognised VTL A as a close colleague while all the six members under VTL B identified their leader as a distant colleague. This finding is illuminated by Kirkman *et al.* (2002) who stated that to avoid feelings of isolation or detachment in their team members, virtual leaders have to mentor and continuously remind them of the common vision shared by the team. This will enable members to have a sense of belonging and that the team leader has come down to their level. Furthermore, it will enhance other enabling factors, such as strong team identity and image; thus giving purpose and meaning to the team membership.

Figure 2 shows the responses regarding the quantity of communication between the virtual team members and VTL A and VTL B. It shows that four (out of eight) members under VTL A responded that the quantity of communication with their virtual leader is just right. Two members stated that VTL A communicated too much and one member responded that VTL A communicated far too much,

while the remaining one member said that VTL A communicated too little in the quantity of communication. In the same vein, for VTL B, four (out of six) members responded that the overall quantity of communication between them and their leader is too little. The other two members stated the quantity of communication with their leader was insufficient. It is evident from the responses that VTL A's level of communication (in terms of quantity) is considered adequate when compared to VTL B's.

In addition, Figure 3 shows the responses on the quality of communication between the virtual team members and VTL A and VTL B. For VTL A, seven (out of eight) members responded that the quality of information communicated by their leader is "good" and sometimes "extremely" or "very good" while one (out of eight) member stated that the quality of communication with their leader was "poor". For VTL B, the entire six members responded that the quality of communication by their team leader was "poor" or "very poor".

Figure 4 shows how the eight virtual team members under VTL A assessed their leader based on selected characteristics, as follows: the eight virtual team members were asked: "are you confident about the skills of VTL A". Five (out of eight) virtual members responded that they "agree" in feeling confident about their virtual leader's skills. Two members responded that they "strongly agree" while one member was "neutral" as to feeling confident about the skills of their VTL. The virtual team members were further asked if their team leader has much knowledge about the team's project. Seven (out of eight) members responded "agree" while one (out of eight) member was "neutral". The virtual members were asked if their team leader has specialist capabilities that helped the team perform, seven (out of eight) members agreed while only one member disagreed with the statement. Similarly, the team members were asked if their VTL was well qualified. Five (out of eight) members responded "agree" while the remaining three members were "neutral" (see Figure 4).

In the same vein, Figure 5 shows how the six virtual team members under VTL B assessed their leader, based on selected characteristics as follows: the six virtual members responded to whether they felt confident about the skills of their VTL, three (out of six) members "strongly disagreed", two (out of six) members "disagreed" and one (out of six) member was "neutral". Also, the team members were asked if their team leader had much knowledge about the team project. Three (out of six) members responded that they "disagreed", two members were "neutral" while one member "strongly disagreed". The team members were further asked if their leader had specialist capabilities that helped their team perform, to which the entire six members unanimously "disagreed". Further, the team members were asked if their VTL was well qualified. One (out of six) member responded "strongly disagree", three members "disagree" and two members were "neutral" (see Figure 5).

It is evident from Figures 4 and 5 that team members under VTL A rated their leader highly in skills, knowledge about the team, capabilities to perform, qualified, ability to perform the task, trustworthy, and reliable, but were less sure when it came to the leader's consideration of members' opinions and lack of empathy or feelings for team members. Similarly, team members under VTL B gave low ratings to their leader in aforementioned qualities, except being considerate of team members' opinion and having empathy for members, which the team members rated high. Table I shows the responses from team members in the two virtual teams on the competencies of VTL A and VTL B as follows.

Effective communication

The overall responses from both virtual teams indicated the lack of satisfactory communication from both VTL A and VTL B. Despite this, it was felt that VTL A tried but did not fully explore the potentials for communicating effectively with team members. These must have affected the virtual projects they embarked on because they were not able to communicate satisfactorily and effectively with their team members. It appears from the findings that VTL A performed fairly well in the ability to communicate important changes, while VTL B was rated very poor. Thus, both VTL A and VTL B were rated poorly in terms of communication in its entirety. In addition, both VTL A and VTL B were considered to lack the ability to provide constant feedback to their team members, and this is recognised as one of the competencies required of a VTL to be effective.

Cultural "intelligence"
The findings reveal that the VTL A lacked the ability to effectively handle multiple cultures in his team, while VTL B did have the ability to handle members of his/her team in terms of their diverse cultures. Thus, cultural intelligence is of immense importance in a virtual team. Brake (2005) shown that cultural diversity can provide a competitive environment for an organisation. Hence, VTLs need to take the time to be conscious of the deeply rooted assumptions of cultures in order to avoid misinterpretation and miscommunication.

Trust and team cohesion
As evidenced in the responses of both set of virtual team members, trust was not present under the leadership of VTL B. However, ability to build trust is one of the essential virtual leadership competencies. While VTL A has trust-building ability, but lacks reliability in ICT expertise, this eroded team members' trust and confidence when it came to ICT-related issues in VTL A. One of the reasons why virtual team members under both leaders lacked trust and team cohesion was because there was no face-to-face meetings or video conferencing during the earlier stage of the team. This finding affirmed the assertion of several earlier researchers. For instance, Cursue *et al.* (2008) stated that face-to-face meetings are a good enabler of success in building trust in virtual teams and they are of the opinion that this enables trust building, team cohesion, and identity during the team formation stage. This is corroborated by Brake (2005) who stated the most advantageous period to build trust in a virtual team is during the early stages of its formation.

Task clarity and clear directions
VTLs need to provide members with a clear task and direction along with specific individual goals. The responses reveal that VTL A has the ability to make tasks clear to members and has the ability to give effective directions to the members, while VTL B lacks the competency. The VTLs need to be more proactive for a good structure to be achieved in virtual teams. This is supported by existing literature that highlights the need for clearly defined goals and objectives communication by all virtual team members to be one of the critical success factors for the virtual team (Bal and Teo, 2000; Brake, 2005; Wright, 2005). This is affirmed by Arvidsson *et al.* (2007) who stated that VTLs can enable clarity of tasks for team members through assignment of tasks, specifying procedures, and clarifying expectations in order to reduce role ambiguity; thus ensuring timely and successful project deliverables.

Reliability
The issue of reliability in a virtual environment is essential and it is one of the competencies required of an effective virtual leader. The responses indicated that VTL A and VTL B were rated relatively poorly by their team members with respect to this regard.

Transformational leadership
It is shown in the responses from virtual team B that VTL B is a transformational leader who exhibits characters like motivation and empathy. While VTL A possesses the characteristics of a transactional leader because his/her team members perceived him/her as a leader that issues sanctions from their responses (see Table I).

It is evident from the findings that VTL A and VTL B have not performed well considering the virtual leadership competencies anticipated of an effective virtual leader to achieve success in virtual project organisation. This study, therefore, contributes to the affirmation that organisations face challenges and have important roles to play in developing their VTLs in order to help them achieve the competencies required for effective leadership in virtual teams.

Conclusion
The growing use of virtual teams in the contemporary business world is becoming increasingly extensive. Leadership effectiveness in a virtual team is a necessity because virtual teams differ from traditional teams. It is, therefore, of immense importance that virtual leaders take cognisance of the specific leadership competences that are unique to a virtual environment and inculcate the competencies in achieving effective leadership. It is against this backdrop that this study has identified and analysed the competencies required for effective leadership in virtual teams from a case study of a single organisation and two virtual teams and their leaders. The study identified some competencies of an ideal VTL in terms of effective communication, including: constant feedback; trust and task clarity; clear directions and reliability; and personal characteristics amongst others. Understanding the competencies needed for virtual leadership effectiveness is vital to achieving organisational success. The study found that the two VTLs did not perform well because they lacked the required leadership competencies; this lead to poor performances experienced in their virtual teams. This resulted in the organisation failing to achieve its goal of spreading its operations beyond Sub-Saharan Africa. It is pertinent to note that organisations should look out for the required competences enumerated on this study and tend to appoint leaders with such competences. By doing so, they will establish high-performing virtual teams that will contribute to the attainment of organisational success. The study also identified that transformational leadership traits should be considered when selecting the VTLs because this leadership style is very helpful in achieving high-performing team and project success. Transformational leaders are self-reflective based, changing beliefs and values of team members for the general benefit of the team. It is important to note that no compromise should be made by any organisation when selecting their VTLs without considering the competencies as aforementioned and transformational leadership traits in order to achieve high performing and successful teams. This study will assist organisations in selecting their VTLs particularly in developing countries seeking to expand beyond the shores of their countries in terms of global business. The study will also be of benefit to VTLs who avail themselves with identified competencies they need to achieve high-performing virtual teams that contribute to organisational success. Finally, it is believed this study has contributed to the limited literature on effective leadership in virtual teams and will, therefore, help the academic community in carrying out further studies associated with this topic in the future.
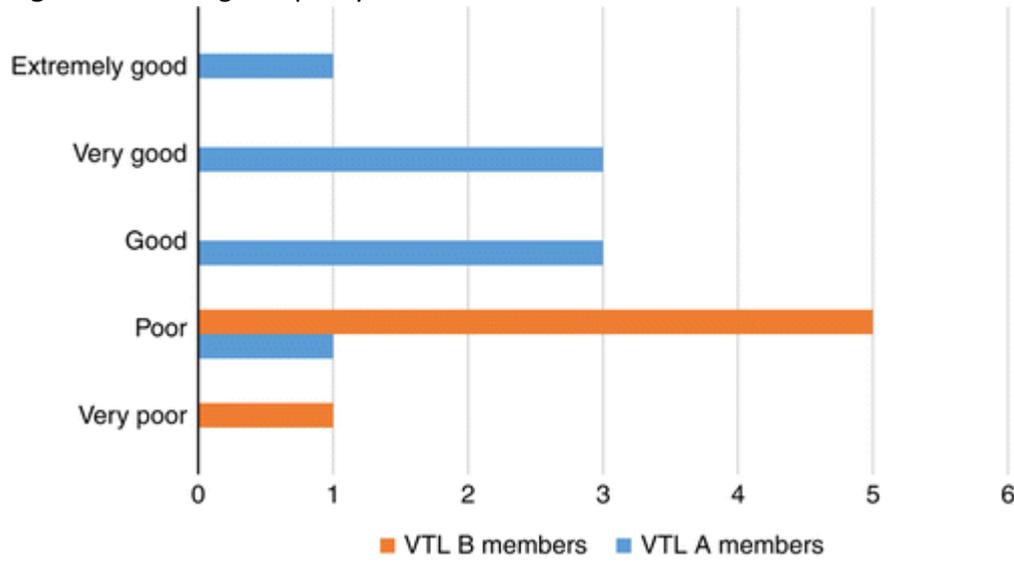
**Figure 1** Showing how well the virtual teams know their virtual team leader (VTL)
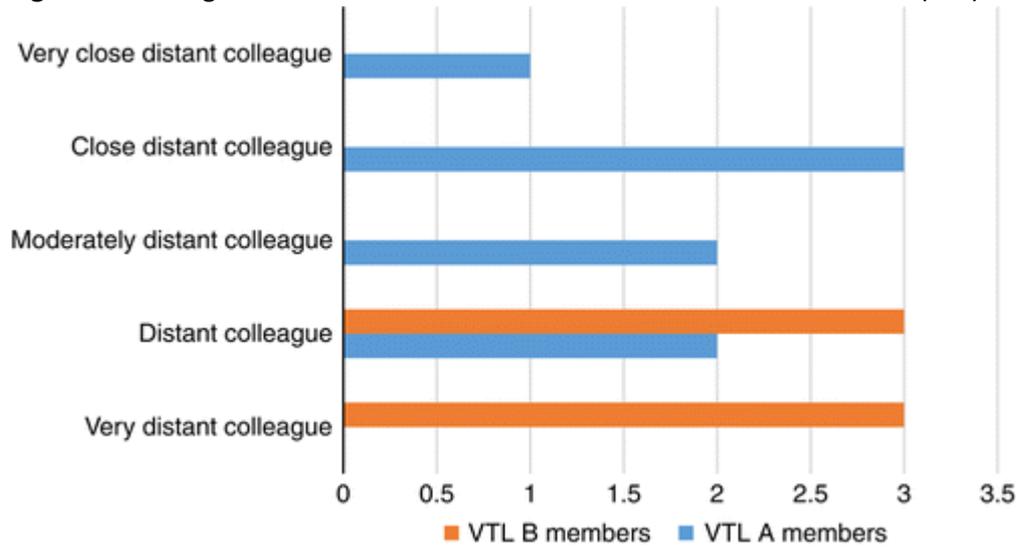
Figure 2 Indicating the overall quantity of communication the virtual teams received from their VTL
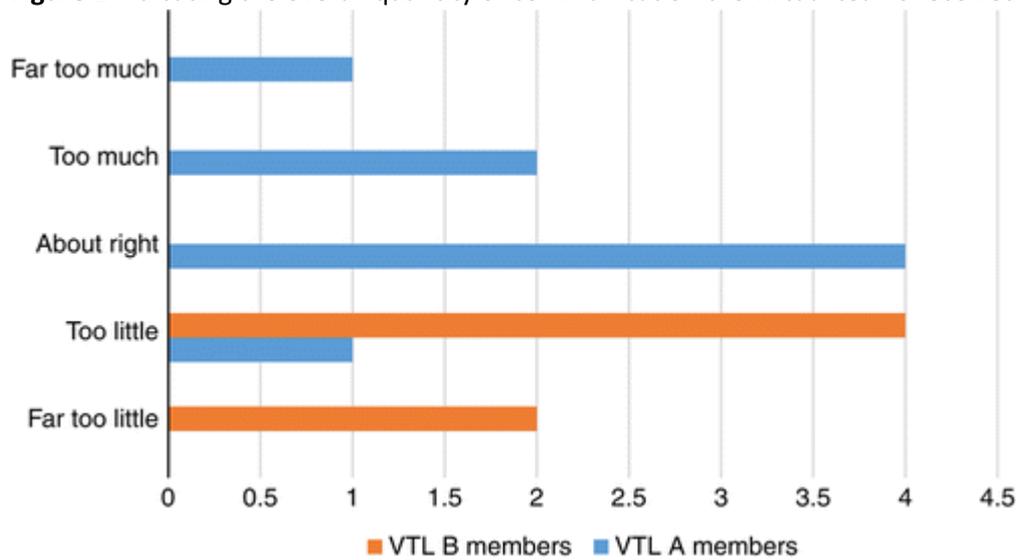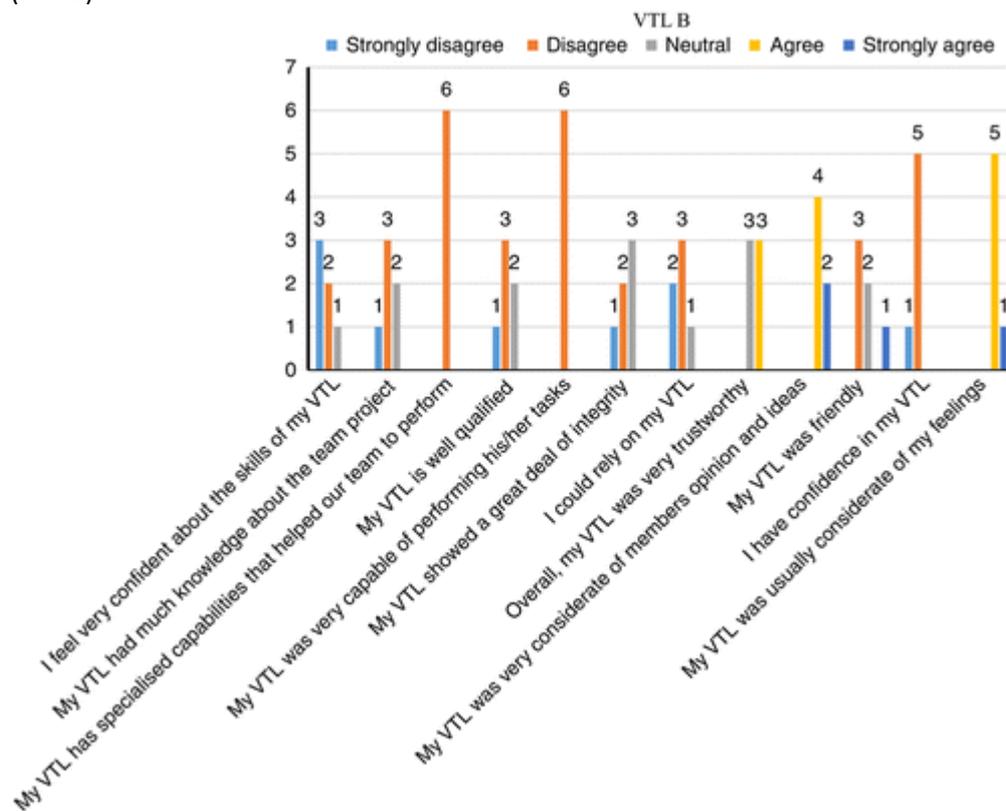
Figure 3 Indicating the quality of communication the virtual teams received from their VTL

Figure 4 Showing how virtual team A assess the selected characteristics of their virtual team leader (VTL A)
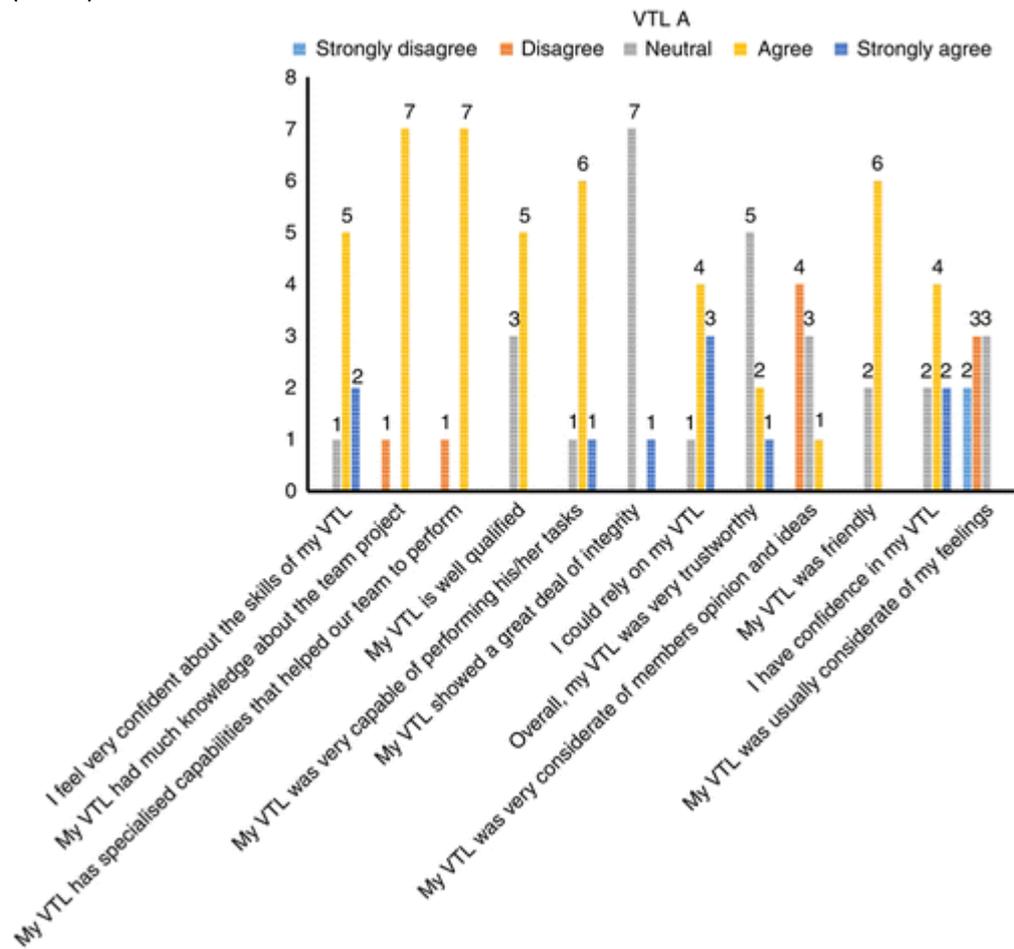
Figure 5 Showing how virtual team B assess the selected characteristics of their virtual team leader (VTL B)

Table I Rating of identified competencies between VTL A and VTL B

Identified competencies	Virtual team leader A	Virtual team leader B
Effective communication	–	––
Ability to provide constant feedback	––	––
Ability to manage multicultural team	–	++
Ability to build trust	–	––
Goal directed	+++	–
Reliability	–	–
Transformation traits or style	––	+++
Coordinating and monitoring ability	++	+
Good decision making ability	+++	+
Ability to meet short-term goals	++	–
Ability to resolve conflict	+	+++
Team assessments	+	–

- **Notes:** +++ = excellent; ++ = very good; + = good; – = poor; –– = very poor

References

1. Anderson, A.H., McEwan, R., Bal, J. and Carletta, J. (2007), "Virtual team meetings: an analysis of communication and context", Computers in Human Behaviour, Vol. 23 No. 5, pp. 2558-2580.
2. Armstrong, D.J. and Cole, P. (2002), "Managing distances and differences in geographically distributed work groups", in Hinds, P. and Kiesler, S. (Eds), Distributed Work, MIT Press, Cambridge, MA, pp. 167-186.
3. Arvidsson, M., Johansson, C., Ek, A. and Akselsson, R. (2007), "Situational leadership in air traffic control", Journal of Air Transportation, Vol. 21 No. 1, pp. 68-86.
4. Avey, J., Luthans, F. and Youssef, C. (2010), "The additive value of positive psychological capital in predicting work attitudes and behaviours", Journal of Management, Vol. 36 No. 2, pp. 430-452.
5. Bal, J. and Teo, P. (2000), "Implementing virtual team-working part 1: a literature review of best practice", Logistics Information Management, Vol. 13 No. 6, pp. 346-352.
6. Bass, B.M., Avolio, B.J., Jung, D.I. and Berson, Y. (2003), "Predicting unit performance by assessing transformational and transactional leadership", Journal of Applied Psychology, Vol. 88 No. 2, pp. 207-218.
7. Bell, B.S. and Kozlowski, S.W.J. (2002), "A typology of virtual teams: implications for effective leadership", Group and Organization Management, Vol. 27 No. 1, pp. 14-49.
8. Bergiel, B.J., Bergiel, E.B. and Blasmeier, P.W. (2008), "Nature of virtual teams: a summary of their advantages and disadvantages", Management Research News, Vol. 31 No. 2, pp. 99-110.
9. Berson, Y. and Avolio, J. (2004), "Transformational leadership and dissemination of organisational goals: a case study of telecommunication firm", The Leadership Quarterly, Vol. 15 No. 5, pp. 625-646.
10. Bono, J.E., Hopper, A.C. and Yoon, D.Y. (2012), "Impact of rater personality on transformational and transactional leadership training", The Leadership Quarterly, Vol. 23 No. 1, pp. 132-145.
11. Brake, T. (2005), "Leading global virtual teams", Industrial and Commercial Training, Vol. 38 No. 3, pp. 116-121.
12. Brown, M.K., Huettner, B. and James-Tanny, C. (2007), Managing Virtual Teams: Getting The Most From Wikis, Blogs, and Other Collaborative Tools, Wordware Publishing, Inc. and Jones and Bartlett Publishers, Sudbury, MA.
13. Cascio, W.F. and Shurygailo, S. (2003), "E-leadership and virtual team", Organizational Dynamics, Vol. 31 No. 4, pp. 362-376.
14. Clark, W.R., Clark, L.A. and Crossley, K. (2010), "Developing multidimensional trust without touch in virtual teams", Marketing Management Journal, Vol. 20 No. 1, pp. 177-193.
15. Connaughton, S. and Daly, J. (2004), "Identification with leader, a comparison of perceptions of identification among geographically dispersed and co-located teams", An International Journal Corporate Communications, Vol. 9 No. 2, pp. 89-103.
16. Creswell, J.W. (2009), Research Design: Qualitative, Quantitative and Mixed Methods Approaches, Sage Publications, Thousand Oaks, CA.
17. Cursue, P., Schalk, R. and Wessel, I. (2008), "How do virtual teams process information? A literature reviews and implications for management", Journal of Managerial Psychology, Vol. 23 No. 6, pp. 628-657.
18. Dole, W.V., Hurch, J.M. and Liebst, A. (2005), "Assessment: a core competency for library leaders", Librarian Administration and Management, Vol. 19 No. 3, pp. 125-132.

19. Donald, D.D. (2004), "The Tao of leadership in virtual team", Organisational Dynamics, Vol. 35 No. 1, pp. 47-62.
20. Duarte, N. and Snyder, N. (2001), Mastering Virtual Teams: Strategies, Tools and Techniques that Succeed, Jossey-Bass, San Francisco, CA.
21. Ebrahim, N., Ahmed, S. and Taha, Z. (2009), "Innovation and R&D in virtual teams", European Journal of Scientific Research, Vol. 34 No. 3, pp. 297-307.
22. Ewen, C., Wihler, A., Blickle, G., Oerder, K., Parker-Ellen III, B., Ceaser, D. and Ferrie, G.(2013), "Further specification of the leader political skills-leadership effectiveness relationships: Transactional and transformational leader behaviour as mediators", The Leadership Quarterly, Vol. 25 No. 4, pp. 516-533.
23. Fleming, B.L. (2006), The Virtual Teams Pocketbook, Management Pocketbooks Ltd.
24. Geister, S., Koradt, U. and Hertel, G. (2006), "Effects of process feedback on motivation, satisfaction and performance in virtual teams", Journal of Management, Vol. 37 No. 5, pp. 459-489.
25. Hanson, K.S. (2007), "Emerging elements of leadership in a complex system: a cognitivist approach", PhD thesis, University of San Diego, San Diego, CA.
26. Hertel, G., Geister, S. and Konradt, U. (2005), "Managing virtual teams: a review of current empirical research", Human Resource Management Review, Vol. 15 No. 1, pp. 69-95.
27. Hossein, G. (2012), "A literature review on challenges of virtual team's leadership", Journal of Sociological Research, Vol. 3 No. 2, pp. 134-145.
28. Hunsaker, P. and Hunsaker, J. (2008), "Virtual teams: a leader's guide", Team Performance Management, Vol. 14 Nos 1/2, pp. 86-101.
29. Jarvenpaa, S.L. (1998), "Communication and trust in global virtual teams", Journal of Computer Mediated Communication, Vol. 3 No. 4, pp. 165-198.
30. Jarvempaa, S.L. and Tanriverdi, H. (2003), "Leading virtual knowledge networks", Organisational Dynamics, Vol. 31, pp. 403-412.
31. Jordan, M.W. (2012), "Developing leadership competencies in librarians", Journal of Graduate School of Library and Information, Vol. 38 No. 1, pp. 37-46.
32. Jury, A. (2008), "Key themes for effective team leaders", available at: http://blogLeadersimulator.com/2008/10/key-themes-for-effective-virtualteamleaders (accessed 20 March 2015).
33. Kayworth, T.R. and Leidner, D.E. (2001), "Leadership effectiveness in global virtual teams", Journal of Management Information Systems, Vol. 18 No. 3, pp. 7-40.
34. Kirkman, B.L., Rosen, B., Gibson, C.B., Tesluk, P.E. and Mcpherson, S.O. (2002), "Five challenges to virtual team success: lessons from Sabre Inc", Academy of Management Executive, Vol. 16 No. 3, pp. 67-79.
35. Kramer, R.J. (2005), "Developing global leaders: enhancing competencies and accelerating the expatriate experience", Research Report No. 1373-05-WG, The Conference Board, New York, NY.
36. Kurt, J. (2012), "Virtual leadership: required competencies for effective leadership", available at: http://teleworkmanagement.com/wp-content/uploads/2012/11/Virtual-Leadership.pdf(accessed 20 March 2015).
37. Linkow, P.R. (2008), "Meeting the challenges of a dispersed workforce: managing across language, culture, time and location", Report No: R-1432-08-KF, The Conference Board, New York, NY.
38. Lucas, K.A. (2007), "Examining servant leadership within virtual and face-to-face teams", PhD thesis, School of Global Leadership and Entrepreneurship, Regent University, Virginia.

39. Luthans, F., Avolio, B., Avey, J. and Norman, S. (2007), "Positive psychological capital: measurement and relationship with performance and satisfaction", Journal of Personnel Psychology, Vol. 60 No. 3, pp. 541-572.

40. Luthans, F. and Youssef, C. (2004), "Human, social and now positive psychological capital management: investing in people for competitive advantage", Organisational Dynamics, Vol. 33 No. 2, pp. 143-160.

41. Maholta, A., Majchrzak, A. and Rosen, B. (2007), "Leading a virtual team", Academy of Management Prospective, Vol. 21 No. 1, pp. 60-70.

42. Mogale, L. (2009), "Effective leadership to manage virtual teams in multinational companies", MBA dissertation, Gordon Institute of Business Science, University of Pretoria, Pretoria.

43. Olson, J.S. and Olson, G.M. (2006), "Bridging distance: empirical studies of distributed teams", in Galletta, D. and Zhang, P. (Eds), Human Computer Interaction in Management Information System, M.E Sharp Publishers Inc., Armonk, New York, NY, pp. 23-28.

44. Piccoli, G., Ahmad, R. and Ives, B. (2004), "Web based virtual learning environment: a research framework and preliminary assessment of effectiveness in basic it skills training", MIS Quarterly, Vol. 25 No. 4, pp. 401-426.

45. Purvanova, R. and Bono, J. (2009), "Transformational leadership in context: face-to-face and virtual teams", The Leadership Quarterly, Vol. 20 No. 3, pp. 343-357.

46. Riggio, R.E. (2009), "Are you a transformational leader", Psychology Today, pp. 18-24.

47. Snellman, C.L. (2014), "Virtual teams: opportunities and challenges for e-leaders", Procedia - Social and Behavioral Sciences, Vol. 110, pp. 1251-1261.

48. Townsend, A.M., De-Marie, S.M. and Hendrickson, A.R. (1998), "Virtual teams: technology and the workplace of the future", Academy of Management Executive, Vol. 12 No. 3, pp. 17-29.

49. Tyrant, K.L., Tyran, C.K. and Shepherd, M. (2003), "Exploring emerging leadership in virtual teams", in Gibson, C.B. and Cohen, S.G., (Eds), Virtual Teams That Work, John Wiley & Sons, San Francisco, CA, pp. 183-195.

50. Turkay, S. and Tirthali, D. (2010), "Youth leadership development in virtual worlds: a case study", Procedia – Social and Behavioural Sciences, Vol. 2 No. 2, pp. 3175-3179.

51. Van, V.L. (2004), "How do we know what we don't know? Competencies and staff development in special libraries", Colorado Libraries, Vol. 30 No. 2, pp. 10-14.

52. Weisban, S. (2008), Leadership at a Distance: Research in Technologically Supported Work, Lawrence Erlbaun Associates Inc., New York, NY.

53. Wright, T. (2005), "Trust: a critical factor to your team's success", available at: http://ezinearticles.com/?Trust:-A-Critical-Factor-to-Your-Teams-Success&id=57996 (accessed 20 March 2015).

54. Yin, R.K. (2009), Case Study Research, Design and Methods: Applied Social Research Methods Series, Sage Publications, London.

55. Yin, R.K. (2013), Case Study Research. Volume 5 of Applied Social Research Methods, Sage Publications, London.

56. Zaccaro, S.J. and Bader, P. (2003), "E-leadership and the challenges of leading E-teams: minimizing the bad and maximizing the good", Organizational Dynamics, Vol. 31 No. 4, pp. 377-387.

57. Zigurs, I. (2003), "Leadership in virtual teams: oxymoron or opportunity?", Organizational Dynamics, Vol. 31 No. 4, pp. 339-351.