

Influence of Trust in Virtual Teams and Existing Communication Tools

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Abstract

Purpose – Virtual teams are gaining prominence. Dependence on Information and Communication Technologies (ICTs) are critical to building trust and improving the performance of these teams. This study explores the use of these technologies in relation to trust. *Design/Methodology/Approach* – This quantitative study utilised a 36-question survey developed to study correlation between a leader's use of twelve specific ICTs and the leader's level of trust in virtual teams. *Findings* – The findings showed a significant correlation between leadership trust in virtual teams and utilisation of existing ICTs. The findings also suggested a significant correlation between virtual team leadership trust and the leadership's perception of ICT importance (Levin, 2018). *Practical Implications* – This study evaluated the link between trust and the utilisation of ICTs within a geographically dispersed organisation. Leaders need to go beyond previously used technologies and learn newer ones to drive team effectiveness (Levin, 2018). Learning to use ICTs can drive engagement, trust, knowledge sharing, and team effectiveness. *Originality/Value* – This study builds upon the existing information of how leadership trust and virtual team performance are affected by leveraging ICTs. Different ICT usage and frequency can build trust, improve knowledge sharing, and enhance performance (Levin, 2018).

Keywords: Information and Communication Technologies (ICTs), Virtual Teams, Trust, Leadership

Introduction

An increase in globalisation, digitisation, competition, customer customisation, and work within networks has brought about numerous changes in the working environment and the work environment continues to change at an increasingly rapid rate. Technology has allowed leaders to supervise virtual teams and telework. These technological changes have created opportunities in the workplace as methods, strategies, and tools continue to change especially since the pandemic. The use of ICT in leading organisations virtually is often called e-leadership, which continues to bring about new trends and has become a priority area of study in various disciplines over the last few years as previous studies have been limited (Alkhayyal & Bajaba, 2023).

Background of the Problem

With virtual teams, team success depends on the ability to build strong relationships, trust, and a shared focus among the team. It can be challenging when there are no opportunities to collaborate whether due to the lack of use of tools or limited interactions. Virtual teams in general face challenges and opportunities when collaborating but shared leadership can increase trust and team satisfaction. One of the biggest challenges involves communication, coordination and cooperation. Having platforms and tools that are flexible and accessible are important (Aquino et

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al., 2022). Although communication technologies exist, they may not be utilised frequently or effectively.

Problem Statement

Leading virtual teams is a major organisational concern given the pace of change in the work environment and organisational culture, so leaders must be proactive in their approach to leading via ICTs (Bagga et al., 2023). The leaders within virtual teams in the disability benefits insurance organisation being studied did not utilise ICTs optimally or focus on task interdependence within the team throughout the organisation, which can diminish leadership trust levels in virtual team members (Levin, 2018).

Purpose Statement

The intention of the research was to assess the connection between leadership trust and the utilisation of ICTs within a disability benefits insurance corporation that was spread out regionally. The research broadens previous knowledge on virtual team leadership trust and virtual team performance by leveraging these ICTs (Levin, 2018).

The reliability and validity of a new survey developed by Levin was tested based on previous instrumentation utilised by Clark (2014) and Thomas (2010). Thomas (2010) and Clark (2014) provided several categories in which virtual team performance could be measured. These categories include trust and virtual teams, conflict, communication, problem-solving, team effectiveness and performance, assessment of virtual team performance, leadership of virtual teams and leader-follower trust (Levin, 2018).

The results of this study were used to determine the specific ICTs that can be applied to the root causes and potential solutions that exist in the workplace.

Research Question/Hypotheses

Based on Levin's (2018) work, the research question to be addressed is:

RQ1: What is the connection between leadership trust levels in virtual teams and leadership's perceptions of the importance of current information and communication

tools (ICTs)?

H1: A significant relationship does not exist between leadership trust levels in virtual teams and leadership's perceptions of the importance of current information and communication tools (ICTs).

H1N: A significant relationship does exist between leadership trust levels in virtual teams and leadership's perceptions of the importance of current information and communication tools (ICTs).

Perceptions of the importance of current information and communication tools were used as the dependent variable. Utilisation of current information and communication tools was used as an independent variable (Levin, 2018).

Literature Review

Leadership

Leadership is an influence process where leaders help employees reach organisational goals. Effective leadership is needed for virtual teams to be successful (Jude, 2017). Leading virtual teams require enhanced skills (Szelwach & Matthews, 2021). Leaders of virtual teams require effective leadership quality who can have an impact and lead others through various challenges using different ICTs (Bagga et al., 2023). Leaders need to inspire a shared vision for the team. Leaders who can integrate knowledge, skills, and abilities including communication through ICTs are important for virtual team performance (Jude, 2017). They must plan and organise meetings and team activities, dedicate additional time to team morale, conflict, training, and communication (Szelwach & Matthews, 2021). Effective leaders take advantage of ICTs to overcome challenges and achieve team success (Wang et al., 2023).

Virtual Teams

Many virtual teams evolved in the 1990s with the introduction of many ways of working like email from mobile phones, flexible workspaces, and videoconferencing. Communication in virtual teams is often difficult but instant messaging, social media, and videoconferencing have made communication more

accessible in virtual environments (Banhidi, 2024). Virtual teams can be categorised in different ways such as team members or the leader in different geographic locations or some members in the same location while others in another. Virtual teams can consist of team members working in the same or even different time zones. Whether working on a specific project or even multiple projects there are differences even among virtual teams. In general, virtual teams have some type of geographic dispersion and a reliance on ICTs which impacts performance outcomes (Puranova & Kenda, 2022).

Virtual team success depends on team effectiveness which can be much more difficult in a virtual environment, but leaders in virtual teams play an important role in cultivating team success (Jude, 2017). A high level of collaboration in virtual teams can allow for increased resources, improved decision-making, better creativity and innovation (Mitchell & Brewer, 2021).

Trust

Trust in teams is essential to meeting team goals (Gohar et al., 2023). Trust can have both a direct and indirect effect on virtual team performance (Jaakson et al., 2019). Trust is critical to team collaboration, but not all teams are successful due to low-levels of trust (Cheng et al., 2021). In working remotely, employees may feel less trust and support from their manager than in a face-to-face environment (Banhidi, 2024) which can be detrimental to team performance as trust is often based on the interactions between employees and their leaders (Jiang & Luo, 2018). Optimal workplace cultures emphasise activities and strategies that will generate and demonstrate trust (Beno, 2021). Trust not only enhances team effectiveness but increases communication, knowledge sharing, motivation, and cohesion (Sagar et al., 2021).

Information Communication Technologies

In virtual teams, individuals are connected through ICTs so team satisfaction, trust, team culture, and team effectiveness are created through the use of these technologies (Uday, 2022). ICTs cannot completely replace face-to-face communication and

these technologies may even have negative effects on organisational culture as it could reduce the potential for connection or lead to conflict (Kulshreshtha & Sharma, 2021). However, it is important to study the technologies available, their use, and their influence on organisational workplace factors. Through a literature review of existing knowledge, many citations were made about different ICT areas. The current study includes intranet and internet applications, company one-on-one phone calls, conference calls, email, face-to-face meetings, instant messaging, texts, social networks, video chats, and Wiki/Web-based threaded messaging (Clark, 2014; Thomas, 2010; Levin, 2018).

A variety of ICT tools are available to support virtual teams and the more ICT tools the team adopts the greater the ICT intensity. Poor management of ICT tools can result in low-quality communication which could reduce trust and collaboration in the workplace (Song, et al., 2021).

Methodology

An exploratory research design was used by the researcher, with the development of a new survey instrument, based on Clark (2014) and Thomas (2010). A quantitative, correlational study was completed to provide an understanding of current relationships between dependent and independent variables within the survey (Levin, 2018). Specific to this study the dependent variable was the assessment by leaders of existing information and communication tools and utilisation of current information and communication tools was the independent variable (Levin, 2018).

Data Collection and Analysis

Data was collected via the following website: <https://www.Surveymonkey.com>. The researcher conducted a brief meeting with all participants using established corporate teleconferencing technologies to explain the context of the research study and to introduce the survey instrument. The researcher was geographically co-located with some of the participants, but all meetings were facilitated in a virtual environment. Participants completed the survey independently at the end of the meeting. Participants

were chosen randomly from different corporate locations in the United States, depending on leadership approval. Descriptive statistics, Spearman's correlation, and regression analysis techniques were utilised to form the findings of this study (Levin, 2018).

Sample Size and Demographics

The targeted population included geographically dispersed executive and middle managers that had participated in leading virtual teams in a disability insurance company with over 9,000 employees. The approved participant group included 21 individuals that met the desired criteria for employees as well as experience with a virtual team. The group sampled included 14 of those people.

Instrumentation

Based on previous studies and instruments from Thoms (2010) and Clark (2014) a new 36 question survey instrument was created by Levin as the previous instruments did not sufficiently capture the current perspectives of social technologies in virtual teams.

Direct Measures: Importance of Specific Information and Communication Strategies

Some questions were developed to determine the perception by the leader of the importance of different communication technologies as it relates to leadership trust and performance (Levin, 2018). All questions referred to the same 12 communication technologies, and participants were asked to rate them in level of importance of trust and the performance of the team (Levin, 2018). The individual proficiencies provided for assessment were task comprehension, problem-solving, task responsiveness, timeliness of task completion, communication, quality, feedback, collaboration, accountability, goal setting, loyalty, empowerment, and knowledge management (Levin, 2018).

Reliability and Validity

The instrument was pre-tested with a pilot group of five experts for content validity to confirm its effectiveness in capturing information about the connection between the levels of leadership trust within VTs and the leader's utilisation of information technologies for communication (Levin, 2018). The group responded to the questions on a four-point rating scale and qualitative feedback was given on the structure and wording of the survey as well. Due to the diversity of backgrounds of the experts, an appropriate level of content validity of 0.8 (Levin, 2018). The Content Validity Index (CVI) for Levin's (2018) survey instrument was calculated, and the evaluation of the test-retest reliability produce a correlation score of 0.93 between two survey response groups.

Spearman's Correlation

Spearman's rho (ρ) correlation is a nonparametric analysis tool that measures strength and direction of associations between two variables on a linear scale (Black, 1999). Levin's (2018) virtual team trust survey responses verified Spearman's correlation were met. A relationship of less than 0.10 indicates that a strong bivariate association occurred (Levin, 2018). A higher rho indicates a strong relationship while lower values indicate a weaker relationship. Positive correlations occur in the same direction while negative correlations move in different directions.

Discussion of the Findings

Of the surveyed group, 14 of 21 candidates who met the desired criteria from a disability insurance corporation that was geographically dispersed through the United States and internationally. A 14% margin of error in the sample size occurred, as expected since the small sample size was small (Levin, 2018). In the initial survey, a mean of 4.6429 and standard deviation of .6332 occurred and with a revised survey given to a pilot sample the mean

was 2.5714 and the standard deviation was 0.51355. The effect size was 0.87, based on the data analysed in SPSS (Levin, 2018). Differences in the effect size between the two groups were greater than 0.8, which is considered to be large. The G*Power software determined that the power of 0.9104146 was appropriate because it went beyond the .8 threshold.

Leadership Trust in Virtual Teams and Leadership's Utilisation of Current Information and Communication Technologies

Participants rated their use of the twelve ICTs and if they could create and maintain trust with their VTs (Levin, 2018). Given several choices between whether there was no, slight, moderate, or strong relationships in research, in question 1: What is the correlation between leadership trust in virtual teams and leaderships' utilisation of current information and communication tools? 71.43% indicated a strong relationship, 7.14% said it was slight, and 31.43% said it was moderate. These responses suggested an important connection occurring between location of the employees as well as with their leaders and the perception of the value of using ICTs to create and maintain in virtual teams (Levin, 2018).

Leaderships' Trust Level in Virtual Teams and Leaderships' Perception of ICT Importance

Leaders were asked to rank their utilisation of ICT tools to create trust with their teams. The response choices were either minimally, moderately, definitely important, or unimportant (Levin, 2018). A total of 71.43% said ICT use was important. The rest of the responses were definitely at 21.43% and moderately at 7.14%. A moderate relationship between leader and employee time zones played a role with r of 0.69 and p of 0.006. Time zones between employees were r of 0.64 and p of 0.015), indicating a relationship exists between the use of different information and communication tools used by leaders and their teams (Levin, 2018).

Importance of Specific Technologies to Building Trust with Virtual Teams

Leaders also chose company email as the most important technology (78.57%) in supporting virtual teams in this survey. Phone calls were utilised by 64.19% and face-to-face meetings were utilised by 57.14%. Traditional ICTs were deemed most important in this survey such as company email, company cell phone, and face-to-face interactions were favoured by leadership (Levin, 2018).

Implications

The study confirmed a connection with the use of ICTs and leadership trust within a geographically dispersed organisation. This study builds upon existing information on how leadership trust in virtual team performance was influenced by ICTs (Levin, 2018). Leaders need to explore new technologies to drive team effectiveness. Learning to use ICTs can enhance engagement, trust, knowledge sharing, and overall team effectiveness.

Conclusion

Research on virtual teams has been growing but is still limited. Leading virtual teams presents many challenges including trust and other performance issues. The key factors with the greatest impact on virtual leadership are communication, trust, and team cohesion (Gentilin & Madrigal, 2021). This study contributes to the overall literature as it relates to the use of ICTs in building leader trust and improving virtual team performance. As new technologies emerge, further research should be conducted in different industries and organisations of various sizes.

Continuous improvement in ICTs have led to greater flexibility and numerous other benefits as well as challenges in the workplace as virtual teams become more common (Gohar et al., 2023). Leaders of virtual teams are critical to team performance and trust is an important factor in the virtual team environment

in promoting a successful team culture (Gentilin & Madrigal, 2021). Leaders must use the ICTs available to build team trust and promote effective team performance. They also need to encourage their team members to use these technologies.

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