Re-Engineering Leadership Communication by Mobile Technology: Comparative Effect on Intra-team Communication, Job Satisfaction and Job Performance

Mohd Yusri Ibrahim, Zurita Othman

Abstract: Through the phase of the 4th Industrial Revolution, the concept of organizational leadership needs to change in line with the rapid of digital climates. Compared to adopting conventional leadership that require leaders and followers to meet face-to-face, organizational leaders today are urged to practice virtual leadership communications, allowing leaders of the organization to continue practicing function of leadership although being away from their employees. Despite various expectations, previous studies have shown that organizational leaders are still less interested in changing conventional leadership practices to digital-based leadership, especially by using mobile technology. This study was conducted to compare mobile technology-based e-leadership practices toward intra-team communication within the organization, job satisfaction and job performance. This cross-sectional survey involved 1033 school leaders in Malaysia. Data were collected through questionnaire, and analysed by SPSS software which is focusing on independent sample t-test and multiple linear regression for hypothesis testing. The findings show that organizational leaders who practice e-leadership at high level have greater impact on intra-team communication, job satisfaction and job performance compare than the school leaders who practicing low-level e-leadership. Since the use of mobile technology in leadership has a major impact on work performance, it is recommended that all leaders of the organization be optimally practicing e-leadership in their leads. To achieve that goal, the responsible parties need to carry out of campaigns, training, incentives and any encourage acts to increase the use of mobile technology in organizational leadership.

Index Terms: Leadership communication, e-leadership, digital leadership, virtual leadership

I. INTRODUCTION

Leadership is an important element of an organization [1]. Studies have proven that successful organizations are usually led by effective leaders [2]. There are many skills that a leader needs to master, but the most important is communication skills [3]. Effective communication skills enable leaders to communicate ideas, interact, negotiate, persuade, influence and connect with their followers in better way. In general words, leadership communication can be understood as controlled, purposeful transfer of meaning by which leaders influence a single person, a group, an organization, or a community. It requires using the full range of communication abilities and resources to connect positively with audiences, overcome interferences and create and deliver messages that guide, direct, motivate, or inspire others to action [3].

In traditional practice, leaders should communicate face-to-face with their followers [4] [5], both leaders and followers should be at similar place on the same time to practice their leader-follower tasks. Once leaders were apart from followers, they can’t exercise this traditional-based leadership style. As ICT develops, communication climates also begin to change which is people can still communicate even though they are geographical far from each other [6]. This development was contributed lot of benefits to organizational behavior, particularly in the aspect of leadership communication. With the rapid development of digital technology, organizational leaders can still able to carry out their leadership functions despite being away from employees [7]. They can continue communicate to give orders, guides, interacts or having meeting using such communication technology, especially mobile technology that is easier to carry anywhere [8].

Walking across the phase of the 4th Industrial Revolution, urges for organizational leaders to use mobile technology as leadership medium became frequently [9]. If an organization is not willing to change their operations to digital-based, those organizations will lose their competition in this IR 4.0 era. Similarly with the concept of leadership, if leaders are not willing to capitalize on digital technology in their leadership practices, they will be left behind and lose in competition and challenges [10]. Digital technology was growing fast, smart leaders who taking advantage of this technology will control the game, while leaders who are not willing to follow the trend will be left behind. All organizational leaders, including leaders of educational organizations especially school organization should leverage technology in their leadership practices to ensure they remain relevant in nowadays challenges [11]. Character of readiness to change is essential needs to become an effective
of organization leader.

Despite being urged to use mobile technology in leadership, previous studies still show those practices is still at low level [4]. Due to various factors, organizational leaders are still not fully ready to change their traditional leadership style to e-leadership based on digital technology. Majority of organizational leaders, especially school leaders are still comfortable applying the traditional leadership styles in their organizations. Despite the findings show that the rates of mobile gadgets owning among school leaders are high, but the using of those gadgets for leadership function is still unsatisfactory. This situation is rather alarming, supposing that school leaders should change quickly to adapt to current developments, especially to the rapidly expanding of digital technology [11].

Weaknesses of using mobile technology by organizational leaders not only about that matter, it’s also cause disadvantages in the organization’s internal communication and delivery systems [5]. Being in a modern digital era, the delivery system and intra-team communication of an organization needs to be at the most efficient condition [4]. Efficiency in internal communication allows all units within the organization to move quickly to achieve the set goals, as well as achieve the desired of key performance index (KPI). If intra-team communication was problematic, there are risks will be drop out of information, misunderstanding of orders, delayed work and so on. Base of these reasons, it is very important for organizational leaders to implement mobile-based communication technology which is more convenient and appropriate to overcome the problems that arise, while ensuring that the organization can operate with most effective.

These weaknesses issues of intra-team communication were worried being negatively impact on job satisfaction among members of the organization [5], thus causes for reducing of job performance. In short, failure to leverage mobile technology in the IR 4.0 era is feared to cause chain problems, especially the incompetence of intra-team communication that will resulting of lost job satisfaction, thus reasoning of poor performance. To look into these issues, this study was conducted to compare the impact of e-leadership applications amongst organizational leaders on intra-team communication, job satisfaction and job performance of organizations. This study will compare the effects of these variables by two groups of organizational leaders who practice low-level e-leadership and who practice e-leadership at high levels.

II. BACKGROUNDs

Both leadership and communications subjects have been widely discussed in previous [12]. Leadership is the influence of relationships between leaders and followers [13], while communication is a process of transferring information from the sender to the receiver [14]. In other words, leadership is the way leaders communicate about the necessary changes, ensuring personal goals, suggesting new strategies and helping to provide action to support decisions making within the organization [15]. It is should encompass aspects of directing, guiding, embarking, being leaders, influencing, governing, educating, creating ways, controlling actions and implementing [16]. Combining of leadership and communication concept, leadership communication can be define as controlled, purposeful transfer of meaning by which leaders influence a single person, a group, an organization, or a community [3].

To ensure an organization could operate effectively, the climate of intra-team communication inside the organization needs to practice at high level [17]. When team members fail to communicate effectively, business operation will suffer. Intra-team communication is a process through which team members communicate with one another. It is made up of the communication strategies and styles of each member of the team. Intra-team communication was functioning to clarify tasks, overcome problem, supervising performance, planning, controlling, evaluating and any needed interaction to ensure every members of organization working together in identical path toward achieving the organization goals [5]. In line with digitalisation of IR 4.0, nature of intra-team communication was changed by utilizing of digital networking technology. Rapid development in ICT are allowing organization maximising their online interaction, virtual meeting, sharing storage and create virtual room to communicate at any place and any time despite they are apart from each other [6].

The most important in organization operation is performance, because job performance will drive organization to achieve the goals that had been set [18] [19]. However job performance of the employee always came after job satisfaction, hence concept of job performance and job satisfaction need to discuss together. Job satisfaction is usually construed as psychological or affective states that reflect the employee's positive emotional state toward the work and associated work factors to which the employee been assigned [20], it was represents an individual's psychological well-being on the job [21]. Meanwhile, job performance is referring to ability of an employee as a group member of organizations to solve a given task regarding the amount of work, quality, quantity, timeliness and positive attitude [18], hence contributes to organizational goal’s achievement.

Why characters and leader’s performance is so important? Because Path Goal Theory of Leadership [22] had proven that leader’s behaviours such directive, supportive, achievement oriented and participative will contributing toward subordinate attitudes, behaviour and performances such as job satisfaction, acceptance of leader, motivational behaviour as well as job performance. This direct effect interaction will moderate by two moderators known as subordinate characteristics and organization climates. Subordinate characteristics including authoritarism, locus of control and ability, while organization climate consist of task behaviour, formal authority system and primary work group. This study was applied this Path Goal Theory to predict job satisfaction and job performance by e-leadership practices, while intra-team communication functioning as mediator between those predictor and criteria variables.

Previous works had suggested that e-leadership practices by organization leaders will contribute to increase of intra-team communication’s climate [2] [4] [6] [10] [23] of
an organization, while the conducive climates of internal communication will raising of job satisfaction among employee as well as raising up the job performance among them [5] [7] [11] [24]. This hierarchy interaction was proposed as this research hypothesis model as shown in Figure 1 bellow.

![Figure 1. Hypothesis model](image)

The variable of e-leadership practices is about how an organization leader had integrated mobile technology in leadership style, which is a leader use computer mediating for task-oriented, decision-making and problem solving [25]. For this study, the e-leadership was measured by four main construct such online interaction, electronic file sharing, online meeting and electronic planner sharing. Performance of online interaction was measured by frequently of leaders applied SMS/MMS, SMS/MMS group, Facebook, Facebook messenger, Facebook group, Twitter, WhatsApp, WhatsApp group, email, email group, Yahoo messenger, Google talk, Google messenger and Skype to communicate with their followers. The construct of electronic file sharing was measured by how frequently they used Email, Dropbox, Google Drive, Sky Drive, iCloud and Facebook as sharing platform inside organization. For online meeting, the performance was measured by frequently of applied Skype and Google Hangout as channels for virtual meeting, while frequently using of Google Calendar and Yahoo Calendar were counted for planner sharing measurement.

The variable of Intra-team communication is about to clarify tasks, overcome problems, supervising proses as well as outputs, planning, controlling, evaluating and any needed interaction to ensure every members of organization working together in identical path toward achieving the organization goals. This variable was measured base on how effective of information was sending and receiving inside organization, how easy organization’s members communicating between each other, how any suggestion by any of members easily to discuss, how far organization members well understood their own tasks, how smooth discussion about any issues can be practice, and how decision making can be decide in effective way inside organization members. All these behaviours were represented the good climate of internal team communication.

This model proposed that well climates of intra-team communication will give positive effect toward job satisfaction of organization members. Job satisfaction can be understood as how far to which an employee feels self-motivated and satisfied with their job. Job satisfaction was happen when employees feel they are having job stability, career growth and comfortable work life balance. For this study, job satisfaction was measured by how the employee were felt happy and satisfied with their job, working hour, facilities in workplace, resources, peer workers, ability to make decision, and potential for professional growth.

The dependent variable of this hypothesis model was job performance which defined as ability of an employee as a group member of organizations to solve a given task regarding the amount of work, quality, quantity, timeliness and positive attitude [18]. There are eight factors to be consider to explain the concept of job performance such the efficiency of certain tasks, mastery of task specialization, mastery of communications, efforts that given, maintaining self-discipline, improving the team performance, quality of leadership among team, and work management [26] [27]. In this research, job performance was measured base on end output that produce by employee including volume, quality, time taken, extra value and so on.

## III. METHODS

### Designs

This study was applied quantitative method with cross-sectional survey design. This design was chosen because of suitability with major number of respondents were involved in this study, while whole Malaysia is a large coverage area, and this study was focusing to explore general level of mobile technology application in leadership matter. As elaborates in background section about referring of Path Goal Theory, then this study was an Applied Research which is following all characteristics of those research type’s rules.

### Participants

Research participants are school leaders in Malaysian that consists of principals who serves at secondary school, headmasters or headmistress which serves at primary school, senior assistant, head departments and head of unit. Data were collected from total of 1033 school leaders which 361 was male and the rest are female. Among them, 39.8 percent or 411 participants were from urban area while the balances are rural. Meanwhile, 579 participants are leaders at primary school, while the rest of 454 were working at secondary school. For position at school, 67 are principals at secondary school, 129 are headmasters/headmistress at primary school, 298 senior assistant, 122 as head of departments, and 417 as head of unit. The participants also came from various criteria of ages, working experiences, teaching area, academic qualification and school type. After preliminary analysis, 936 participants were practiced e-leadership at low level, while 97 at high level.

### Measures

Data were collected through questionnaires that applied degree of agreement responses. This instrument consist five parts such demographics, e-leadership practices, intra-team communication, job satisfaction and job performance. Measurement of e-leadership contains four construct ie online interaction, file sharing, online meeting and planner sharing, using four scale number of measurement. Meanwhile, the intra-team communication, job satisfaction and job performance was measured as single construct for every variables, applied five number of measurement scale. All variables have Alpha reliability coefficient between
0.769 and 0.908 as shown in preliminary result table.

Analysis

The main objective of this study was to compare the effect of high e-leadership practices and low leadership practices on intra-team communication, job satisfaction and job performance. Hence, the main research hypothesis was tested using both t-test and linear regression. The t-test was applied to compare differences between low and high e-leadership practices on variables of intra-team communication, job satisfaction and job performance, where t-values with significant below than 0.05 was consider has a significant difference. Meanwhile, multiple linear regression was applied to find the best path analysis of final model between who practices e-leadership at low and high level. In this case, values of regression weight and R squared were considered.

IV. RESULTS

Table 1 below shows the preliminary results of this study. In general, the findings show that e-leadership among school leaders is at low level with mean score of 1.483, compare to maximum score was four. This finding does not mean that school leaders are weak in leadership practices, but they still have not opted for optimum mobile technology as a delivery mechanism in carrying out their leadership functions. They still practicing leadership in conventional mode, which mean leaders acting leadership face to face with their employee. This finding shows that participants were less in using mobile technology equipment and tools for online interaction with subordinates, sharing electronic files in organizations, conducting online meetings and sharing planners to operate organizational activities and programs. Meanwhile, finding shown intra-team communication within organization was at a moderate level, while job satisfaction and work performance are at a high level with mean scores more than four of the maximum five. The findings also show that all study variables are inter-correlated at a moderate level, fit with the proposed interaction that was stated in the hypothesis model. That table also shows results of reliability testing and normality tests, confirming that data are in normal distribution which is allowing for parametric testing, and has a high level of reliability measurement.

As explained in the method section, the participants are divided into two categories ie those who practice e-leadership at high level and who practicing e-leadership at low level. Respondents who obtained the mean score below 2.00 were considered as low, while those who obtained the mean score above 2.00 were considered to be at high level. Then analysis was continued using t-test to test the difference in intra-team communication, job satisfaction and job performance based on those two categories.

The findings show that participants who practice high level e-leadership scored intra-team communication, job satisfaction and job performance higher than those who practice low-level e-leadership as shown in Table 2 below. This finding confirms that the more frequent school leaders use mobile technology in leadership, the greater the effectiveness of communication within the organization, enhancing job satisfaction, and improving performance. Whether using mobile technology to interact, share electronic files, virtual meetings or share electronic planners; these practices will add communication efficiencies in the organization, while increasing their satisfaction and work performance. In other words, e-leadership practices will increase the satisfaction and performance of leaders and employees in the organization, allowing an organization to achieve a defined goal.

Table 2. Practices of e-leadership between low and high application of mobile technology

<table>
<thead>
<tr>
<th>Variables</th>
<th>Level of E-leadership Practices</th>
<th>N</th>
<th>Mean</th>
<th>Sd</th>
<th>df</th>
<th>T</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intra-team Communication</td>
<td>Low level</td>
<td>936</td>
<td>3.95</td>
<td>.639</td>
<td>1031</td>
<td>-4.454</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>High level</td>
<td>97</td>
<td>4.26</td>
<td>.601</td>
<td></td>
<td>3.005</td>
<td>.003</td>
</tr>
<tr>
<td>Job Satisfaction</td>
<td>Low level</td>
<td>936</td>
<td>4.10</td>
<td>.482</td>
<td>1031</td>
<td>-3.005</td>
<td>.003</td>
</tr>
<tr>
<td></td>
<td>High level</td>
<td>97</td>
<td>4.26</td>
<td>.438</td>
<td></td>
<td>3.005</td>
<td>.003</td>
</tr>
<tr>
<td>Job Performance</td>
<td>Low level</td>
<td>936</td>
<td>4.33</td>
<td>.434</td>
<td>1031</td>
<td>-1.978</td>
<td>.048</td>
</tr>
<tr>
<td></td>
<td>High level</td>
<td>97</td>
<td>4.43</td>
<td>.494</td>
<td></td>
<td>3.005</td>
<td>.003</td>
</tr>
</tbody>
</table>

Then, analysis was continued to test interactions between variables as stated in the hypothesis model. Findings show that e-leadership had predicted significantly toward intra-team communication, while intra-team communication contributes significantly to job satisfaction and job performance. The combination of e-leadership practices, intra-team communication and job satisfaction contributed 29.1 percent to the organization's work performance. The findings are shown in Figure 2 below.

Figure 2. Final model for general level application of mobile technology

The findings in Figure 2 were for the overall data, a mix of those who practice e-leadership at low and high levels. To compare the differences in the practices, data for participants who practice e-leadership at low and high levels were analysed separately. Figure 3 shows the final model for respondents who practice e-leadership at a low level. Although the findings still support the theory, the effect of e-leadership on intra-team communication is shrinking, as well as the effect of intra-team communication on
job satisfaction and job performance. Compared to previous overall data which contributed 29.1 percent to job performance, participants who practice e-leadership at low level only accounted for 28.4 percent of job performance.

Based on this finding, it is recommended to the authorities to aggressively campaign to encourage organizational leaders to fully utilize mobile technology to enhance their e-leadership practices, which have proven to improve their organization's work performance. This campaign includes incentives for organizational leaders who use mobile technology excellently. Recognition or appreciation in the form of promotion and award-giving can also be done to further promote the use of mobile technology amongst them. Some previous studies also show that there are leaders in organizations especially older ones who are not proficient in using sophisticated and up-to-date mobile technology gadgets and software. It is recommended to responsible parties to provide mobile technology training to leaders of the organization. Either introducing a new training syllabus or modifying existing exercises, exercises on the use of these tools and software is needed to be done systematically and effectively, in particular the ways to leverage mobile technology in carrying out leadership tasks.

Sometimes the problem of using mobile technology among the leaders of this organization is due to lack of internet coverage in their workplace, especially organizations that are located in rural areas far from ICT facilities. To address this problem, it is proposed to the government to expand the internet access to rural areas at the most immediate pace. The government has no other choice, the difference in ICT facilities in rural and urban areas should be immediately brought to ensure the people get equal and fairer facilities. Without internet access, rural areas will be lagging behind in the aspect of advancement, especially in this very rapid digital development. The 4th Industrial Revolution foundation is a digital system, without good internet coverage and without adequate ICT facility facilities, of course the rural area will be lagging behind progress, this issue need to solve immediately by government or any responsible parties.

REFERENCES
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