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Opportunities and Challenges of Remote Workers in COVID-19 Era: Experiences from Ghana

By Daisy Ofosuhen, PhD, Alexander Opoku and Edward Cobbinah

This study examined the opportunities and challenges of remote workers in Ghana. The descriptive research design with a survey strategy was utilized. The population was comprised of 35 organizations consisting of 20 public and 15 private organizations that made a formal remote working arrangement during the COVID-19 lockdown period in Ghana. Five hundred and seventy (570) employees were conveniently sampled for the study. Data was collected through an online survey with the use of Google forms. Data were analyzed descriptively and were presented in frequencies, percentages, means and standard deviations. Findings revealed that remote work offered opportunities in terms of flexibility, work-life balance, and better organization of work, avoidance of vehicular traffic in commuting to workplace, as well as avoidance of formal dress codes. The study also found significant challenges to remote work in areas of work-home interference, inadequate communication, procrastination, loneliness, security threats, lack of technological know-how, and lack of supervision. The implication for the study is that management of organizations are to develop formal remote work arrangements by implementing remote work with desired tools, technical training and innovative measures to deal with the challenges of working remotely, in order to enhance the benefits that come along with remote work.

Keywords: Remote work, Opportunities, Challenges, Tools for remote work, COVID-19 pandemic, Ghana.

Introduction

Working remotely has received considerable interest as a result of the outbreak of the COVID-19 pandemic. As a measure to curb the spread of COVID-19, the World Health Organization recommended that people keep physical distance. This measure affected the world of work as individuals had to maintain a set physical distance.

This saw many organizations putting strategies in place to assist employees to ‘work from home’ in order to achieve their production targets even amidst the pandemic. Many organizations now consider remote work not as an option, but a strategic business tool that could boost productivity in the midst of the pandemic. Researchers as such, Riom and Varelo (2020) noted that over 60% of organizations across the globe have made significant investments in new technology and digital capacity. Consequently, organizations need support to find suitable remote work plans as remote work is associated with complications from home dynamics, COVID stress, overworking and challenges of collaborations.

In Ghana, the effect of COVID-19 on employee’s work activities has changed enormously. Although there were denials about the disease initially, Ghanaians began to take it more seriously after the World Health Organization declared COVID-19 a pandemic (World Health Organization, 2020). The government of Ghana then began to put in place preventive measures and interventions to deal with its spread. Once the president of the Republic of Ghana issued measures to curb the spread of COVID-19 the social fabric of Ghana became disrupted (Khoo & Lantos, 2020). Funerals, weddings, outdoorings and other religious activities could no longer be performed the way they were. Human activities, movement and interactions were associated with the spread of COVID-19 and so a call to keep physically distant was necessary to curb its spread. This invariably affected work activities in most organization, as employees were restricted from working in teams and groups which culminated into the idea of working remotely. For instance, Agyepong et al.(2021) observed that teaching and learning have been positioned and conducted online, a complete deviation from the traditional resident campus arrangement.

This study examines remote work in Ghana during the COVID-19 Lockdown period by looking at the tools used for remote work and the opportunities and challenges of remote work. The uniqueness of this study is that, it will assist firms and managers to have a different perspective to work re-design and to accommodate remote work practices. Moreover, this study is expected to provide relevant implication for policy and practice, and for future research on the subject.

Literature Review

Overview of Remote Work

Remote working has been defined by Collins et al.(2016) as work that is completed outside the employee's organizational office and using various technologies to communicate with colleagues and customers. Remote working is also known as telework, telecommuting, anywhere work, distributed work, and virtual work. Allen et al. (2015) argued that review of scientific findings on telecommuting has become problematic due to differences in what the definition really is and the conceptualization employed by various researchers on the subject. The definition debate is important because it influences the design adopted for a study in telecommuting or remote work. Based on their analysis of literature, Allen et al. (2015) defined telecommuting as "work practice that involves members of an organization substituting a portion of their typical work hours (ranging from a few hours per week to nearly full-time) to work away from a central workplace, principally from home, using technology to interact with others as needed to conduct work tasks". Instead of the term telecommuting and teleworking, organizations now prefer to use the term working from home or working remotely because it resonates with modernity.

Although working remotely is not a new phenomenon according to extant literature, Como et al.(2021) postulate that people who integrate their work with their personal lives have challenges setting priorities, they have a highly integrated lifestyle and usually have higher emotional exhaustion. Working remotely may also face complications from home dynamics, overworking and challenges of collaboration. Desilver (2020) noted that most employees have little remote work experience and their organizations are not ready to support remote working; many employees have not had the needed training and resources

to cope with remote work. Many jobs which are performed remotely were triggered by COVID-19, which inadvertently led to a de-facto global experiment of remote work. Other researchers have also argued that there are organization wide challenges with remote work especially with respect to cost in the form of installation of information and telecommunication devices, inadequate training on the part of employees, inadequate support from management and inadequate technical expertise to manage organizations' ICT infrastructure.

A pre-crisis industry-level survey by Bartik et al. (2020) found that remote work during the crisis is more common in highly educated industries. Monteiro et al.(2019) however, opined that remote work is being practiced in many occupations across a number of industries and not only by the highly educated. Most organizations adopt remote work because of lack of physical space to operate, have wide spread and diverse employees, as well as limited space to employ more people or operate in a technology sector (Avornyo, 2020). Eurostat (2018) found that those who work from home in the European Union constituted 5 percent of the employed workers. In America, around 56% of employees have a job which could be done from home at least on a part time basis due to the fact that one does not need to be physically present to get the job done (Global Workplace Analytics, 2020). Dingel and Neiman (2020) further asserted that 37% of jobs in the United States could be done solely at home. Remote work is now no longer an option but a compulsory and a mandatory order (Wang et al., 2021).

A survey by the Society for Human Resource Management in the United States found that 70% of firms allowed remote work from an ad-hoc to a full-time basis (SHRM, 2018). Other firms in Europe allow a good balance between work and family life thereby promoting flexibility at work. OECD (2016) found that 70% of Europeans have access to some work flexibility. Available research indicates that the work-life wellness of remote workers could be influenced by two factors, the first being the lack of organizational support during the transition and the second being COVID-19 related stress (Como et al., 2021). According to Wepfer et al.(2018), highly integrated lifestyles are often related to higher exhaustion. There is however a disagreement on this notion. Gadeyne et al.(2018) believe that working remotely will rather promote work compatibility although they

acknowledged that remote work can have both positive and negative impacts.

Wang et al. (2021) categorized remote work into three different approaches. In the first approach they explained that work characteristic is a moderating factor to remote work outcomes. The implication therefore is that remote work was optional prior to the COVID-19 era and therefore managers ought to design remote work policies for suitable jobs. In their second approach, they argued that remote work results in less social support with its negative effect on employee well-being. In short, remote work was optional under approach one and two. The third approach, which they espoused strongly, was that remote working is no longer an option and therefore it has become necessary to redesign remote work for optimum output. Their research focused on work experience of remote workers in a COVID-19 triggered circumstance. Although researching into the experiences of remote workers is necessary, as far as Ghana is concerned it is more important to create awareness.

What Work can be Done Remotely?

The key question regarding remote work is whether every work could be done remotely. Golden and Veiga (2005) posit that remote work should be allowed for appropriate jobs and workers. Dingel and Neiman (2020) found that 37% of jobs in the United States could be performed entirely at home with significant variations across cities and industries. They also found that those jobs that could be performed at home typically paid better than jobs that cannot be done at home. Jobs that could be done at home accounted for 46 percent of all United States wages. This is consistent with the argument by Kniffin et al. (2021) that prior to the COVID-19 pandemic over 75% of employees who worked from home were those with annual salary above \$65,000. DeSilver (2020) was also right when he postulated that remote work was a luxury for a few. Dingel and Neiman (2020) further found that lower income economies have a smaller share of jobs that could be done remotely.

Although a lot of these researches were done with pre-pandemic data, Dingel and Neiman (2020) found a correlation with the estimate of work which could be done remotely in the COVID-19 era. They also found that most jobs in finance, corporate management; professional

and scientific services could be done remotely whereas fewer jobs in agriculture, hotels and restaurants or retail could not be done remotely. They established that 14 percent of jobs could be done remotely in Ghana. While commending the remote work feasibility by Dingel and Neiman (2020), an observation was made by Bartik et al. (2020) about the feasibility constraint in practice and whether the variation in remote work was well predicted. Applying this classification, the authors observed that 27 to 31 percent of employees in small businesses could feasibly work remotely. Nonetheless, they agreed that the remote work classification by Dingel and Neiman (2020) is a strong predictor of industry level variation in remote work during the pandemic. These findings were achieved through their Alignable Network Survey.

Applying the Skills Towards Employability and Productivity (STEP) approach, Saltiel (2020) identified jobs that could be done remotely in 10 different developing countries. The author found that only 13 percent of workers among the ten selected countries could work remotely ranging from 5.5 percent in Ghana to 23 percent in China. There is however a clear variation in the percentage of work that could be done remotely by these two different researchers. While Dingel and Neiman (2020) found 14 percent for Ghana, Saltiel (2020) found approximately 6% for Ghana. The author agreed with previous researchers that there are differences in the feasibility of working from home across countries in high paying occupations and further added that workers providing clerical services may also work remotely. Bartik et al. (2020) discovered that 40 percent of workers who have switched to work remotely as a result of the COVID-19 pandemic will continue to do so even when the pandemic ends. They further predicted that there will be less demand for office space if the projection proves true.

Tools Used to Implement Remote Work

Social distancing has made it possible for some applications to gain a new level of usage (Roulet & Laker, 2020). Videoconferencing software such as Zoom and Houseparty has made it possible for individuals to reconnect with neighbours, friends and colleagues. The authors noted that tools such as Microsoft Teams, Zoom, Cisco WebEx and Slack have improved collaboration among workers while they observe social distancing. Roulet

and Laker (2020) argue that with the current condition of our social life, communication via digital platforms have made it possible to reactivate a shared history and bonding. With the right morale support and a platform that enables employees to share ideas in an uncertain time like the COVID-19 pandemic, the authors believe that individuals will develop resilience in both the current and future situations.

Ilag (2021) believes that effective collaboration is possible through proper communication, cooperation, coordination and teamwork. He explained that some elements must be present for a proper mix between communication and collaboration and listed interpersonal skills, communication skills and problem-solving skills as critical in building trust among employees. Scott and Queens (2017) agree that a good balance between collaborative software and tools with the right working system is vital. Kazilbash (2020) affirms that it is possible to work from home and achieve the same or better level of productivity but with the application of the right technology. With the aid of technology, workers are able to connect their laptops with Virtual Private Networks (VPNs) to have access to their company's cloud services. Even with highly technical jobs like architecture and engineering, technology such as Bluebeam and Autodesk are available to facilitate their work remotely.

With monitoring tools like ActivTrak, Tamarind, Hubstaff and Time Doctor, supervisors are able to know employees' screen time, computer mouse activities, shots of employee screens, and even their GPS locations at any given time. Avornyo (2020) listed some internet enabled devices that make monitoring of remote workers possible. Tools such as Google Docs, Google Sheets, Google Drive, Drop Box and Trello make it possible for progress of work to be tracked. He added that assignment of task and changes made to tasks is made possible by tools like Freed Camp and Click Up. Furthermore, it is possible to hold meetings with tools such as Skype, Zoom, Slack and Facebook Workplace. Other tools such as AlwaysOn, Isolation identification and Throughput are helpful in promoting the experiences of engineers working remotely. AlwaysOn helps bosses assess if employees are having trouble disconnecting from work, while Isolation Identification shows employee attendance at virtual meetings to determine their level of collaboration and connec-

tion with the team. Throughput evaluates changes in productivity through metrics such as median review time and Jira cycle time (Kazilbash, 2020).

Based on the analysis above, remote working tools could be classified into four main categories. The first category is communication and collaboration tools which includes tools such as Microsoft teams, Zoom, Cisco Webex, Houseparty, Skype and Facebook Workplace, Email, Google Docs, Google Sheets, Google Drive, Drop Box and Trello. The second category is employee monitoring tools which include tools provided by companies such as ActivTrak, Tamarind, Hubstaff and Time Doctor. The third category of tools is project management which includes Feed Camp and Click Up. Finally, there are tools that improve the experience of remote workers and that include tools such as AlwaysOn, Isolation identification and Throughput.

Remote Work Opportunities

Remote work benefits both organizations and individuals. According to Wang et al. (2021), one of the benefits of remote work is job autonomy. Hunkeler (2018) pointed that working remotely gives workers an opportunity to align with their work preferences. He noted that remote work gives employees some form of autonomy, where employees are able to decide when and how to accomplish work assignments. At home, employees might have different styles of delivering on their assignment. They can decide to work from a home office, on their beds, while having some leisure or at night. All that matters are how the job will be delivered. Lazarova (2019) believes that management must set rules and guidelines for remote workers even as they enjoy autonomy. With job autonomy, employees can benefit in relation to their well-being and productivity since they can balance work and other personal and family related issues.

According to Lazarova (2019), remote work is helpful in acquiring talent and retaining them. This is because Generation Z is more in tune to flexible work arrangements. This generation desires flexibility because they want to work and enjoy their hobbies, talents and families at the same time (Ilag, 2021). Bloom (2018) found that office workers lagged behind remote workers in terms of productivity by 13 percent. They also found that remote workers worked 9.5 percent longer than office workers. Work flexibility therefore helps or-

ganisations to minimize cost (Felstead & Henseke, 2017; Thompson, 2018). Working remotely has been found to boost the well-being of employees (Lazarova, 2019). It helps to improve the morale and happiness of employees. It has been argued by Dimitropoulou (2019) that it is not enough to limit employee morale and happiness to pay and promotions but a flexible work arrangement that allows the worker to manage family and work issues is worth considering. A study conducted by a leading provider of software services PGI, found that 80 percent of remote workers had high morale and 82 percent saw a decline in their stress levels (Loubier, 2017).

Remote work has been found to improve health and also resulted in less pollution of the environment (Lazarova, 2019). With the enactment of the Clean Air Act in 1970, organizations were tasked to develop ways of reducing air pollution. As a measure to achieve this, remote work programs were designed (Allen et al., 2015). Studies have found that fossil fuel consumption has been significantly impacted by work from home programs (Ripton, 2016). Furthermore, it was found that consumption of gas was reduced by more than twenty million dollars per year globally as a result of remote work. There was also a reduction of greenhouse emissions by 54 million tons annually and 640 million barrels of oil were saved in a year according to a report by Global Workplace Analytics (2015).

Challenges with Remote Work

Wang et al. (2021) identified work-home interferences, ineffective communication, procrastination and loneliness as challenges of remote workers. They found that the shutdown in schools during the COVID-19 pandemic meant that remote workers will have their families around them to take care of and this makes remote working very challenging. The integration between work and family makes it difficult for remote workers to concentrate on their tasks as well as responding to their family demands. Ineffective communication was found to be a challenge to remote workers (Wang et al., 2021). The researchers noted that the inability of remote workers to be efficient was as a result of poor communication. Remote work relies heavily on ICT and this sometimes can pose a challenge to effective communication. Avornyo (2020) observed that working close to your television set can be distracting and tempting. Re-

ote workers also suffer from a psychological challenge because ICT enabled communication was more task focused. Workers therefore craved a sense of belongingness. He argued that remote workers need to be self-disciplined, keep daily schedules, manage burnout and avoid distractions in order to be productive.

Lazarova (2019) opined that organizations that adopted remote working earlier such as IBM, Yahoo and Best Buy are now reversing their policies to return to office work due to lack of collaboration. There is a lack of face-to face interaction in remote working and even though an attempt has been made to improve this by video calls, the two cannot be the same. The author further claimed that, in a global situation, a face-to-face gathering at least twice annually can help to better know people. Lazarova's claim corroborated with the findings of Coffey and Wolf (2018), who discovered that social interaction is crucial for human existence. They further identified lack of affiliation as a challenge with remote work. These scholars argued that the opportunity to have a face-to-face interaction, in-person team meetings and random or unplanned meetings which exist in a traditional working environment is missing in a remote working setting which deprives the remote worker of the need for affiliation.

According to Lazarova (2019), remote work has effect on efficiency, synergy and collaboration. There is a lack of interaction when employees work from home. The elements of efficiency, synergy and collaboration are essential to employees' enthusiasm, loyalty, passion and sense of value to the organization and this is difficult to achieve when workers work remotely. It may take a longer time to build trust among remote workers than when work is done face-to-face. A lack of trust among team members could have consequences on the entire project. There is the temptation for workers to be self-centered and not focus on the bigger goal. Islam et al. (2021) further argued that remote workers may miss out on opportunities to advance their career because they may not be visible. Because of proximity and affiliation, on-site workers are more likely to catch the eye of their managers than remote workers. The lack of visibility could also create performance gaps as on-site and off-site workers might not know the problems being solved by each other. If this is not well managed, it could lead to work overload on the manager.

Research Design

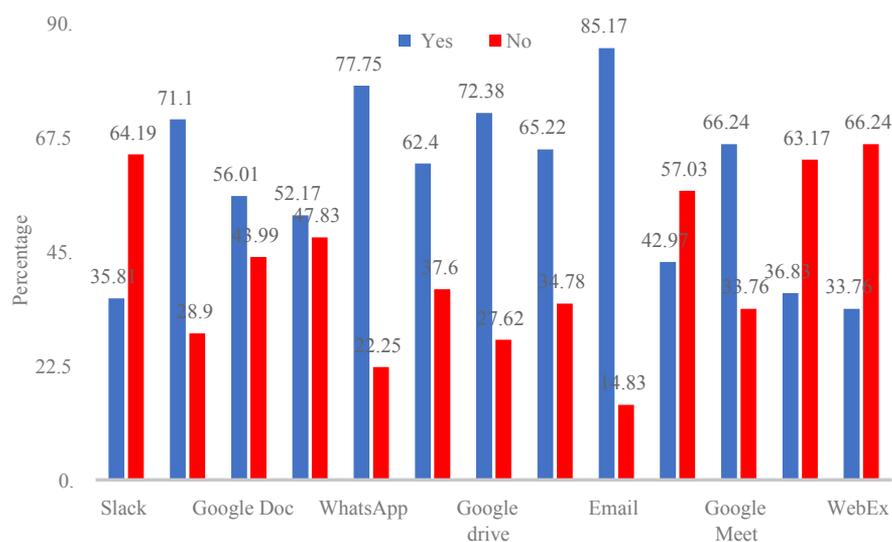
This study utilized descriptive design with a survey strategy. The population included all individuals who worked from home during the COVID-19 pandemic. The population covered 35 Ghanaian organizations that made formal arrangements for their employees to work remotely. Based on the findings by Saltiel (2020), only jobs that were possible to be performed at home were considered. The population however did not include employees who were made to stay at home as part of measures to ensure social distancing and were not necessarily working while at home. In all, 570 employees from 20 public and 15 private organizations were identified to have worked from home and these were conveniently sampled for the study. The study used a structured questionnaire which was designed with a five-point Likert scale. Data collection was done using an online survey with Google forms. This tool was appropriate since it was easily accessible to the population which was geographically dispersed. The method was economical and was convenient for respondents. The questionnaire was emailed to target population who completed them through the Google platform. The 570 employees identified to have worked remotely, only 391 responded to the questionnaire, representing 69% response rate. Data was pulled from the Google platform and imported to SPSS for cleaning and analysis. Data was analyzed with descriptive statistics and was presented in tables and figures. Ethical considerations were upheld in this study as the study ensured anonymity and confidentiality of respondents. The purpose of the study was explained to respondents so they could decide whether to partake in the study or not.

Findings and Discussions

Tools Used to Promote Remote Work

Findings indicated that remote workers in Ghana mostly used tools like Slack, ZOOM, Google Docs, Google Sheets, WhatsApp, Google Hangouts, Google Drive, Dropbox, Email, Proof-Hub, and Box, for remote operations. It further revealed that email was the most used tool in promoting remote work (85%). This was followed by WhatsApp (78%), Google Drive (72%), Zoom (71%), Google Meet (66%), Dropbox (65%), Google Hangout (62%), Google Doc (56%), Google Sheet (52%), Proof Hub (42%), Box (36%), Stack (35%), and WebEx (33%). Moreover, the study revealed that among these tools, WebEx (66%) is the tool that most respondents did not use when working from home. This is then followed by Slack (64%), Box (63%), Proof Hub (57%), Google sheet (48%), Google Doc (44%), Google Hangout (38%), Dropbox (35%), Google Meet (34%), Google drive (28%), Zoom (29%), WhatsApp (22%), and Email (14%). This finding is in line with Roulet and Laker (2020) and Kazilbash (2020) who espoused that social distancing has made it possible for some applications to gain new level of usage. Videoconferencing software such as Zoom and Houseparty has made it possible for individuals to reconnect with neighbours, friends and colleagues. According to Kazilbash (2020), tools such as Zoom, Microsoft Teams, Slack and Cisco Webex have improved collaboration among workers while they observe social distancing.

Figure 1. *Tools Used to Promote Remote Work*



Source: Field survey (2021)

Opportunities in Remote Work

To explore the opportunities in remote work, respondents were made to indicate their levels of agreement or disagreement with some statements which were measured on a five-point Likert scale with 1 indicating strong disagreement and 5, indicating strong agreement. Table 1 presents descriptive statistics on remote work opportunities. The result is presented in means and standard deviations. With a mean value of 3.63 and a standard deviation of 1.05, the study found that working remotely helped employees to avoid vehicular traffic. Work flexibility produced a mean value of 3.57 and a standard deviation of 1.03, the results indicate that remote work offers flexibility for workers

since they are able to make their own schedule and choose a time that suits them for a specific task. This finding is in line with the findings of Bloom (2018). It was also revealed that working remotely helped workers to learn new things and acquire a new hobby. This is consistent with the findings of Lazarova (2019) who claims that remote work is helpful in acquiring new talents, due to its flexible work arrangement. Similarly, Ilag (2021) added that remote work has helped in generating desired flexibility because they want to work while at the same time spend time with their hobbies, talents and families. Working remotely enabled respondents to avoid a formal dress code and appearance-related requirements, with a mean of 3.57 and a standard deviation of 0.93.

Table 1. *Opportunities in Remote Work*

Variable	Obs	Mean	Std. Dev.
Avoidance of vehicular traffic	391	3.63	1.05
Work Flexibility	391	3.63	1.03
Work Productivity	3.57	1.05	0.99
Opportunities to learn new things	1.03	3.46	0.93
Avoidance of formal dress code and appearance-related requirements.	391	3.23	0.99
Unnecessary interaction.	391	3.43	1.10
More time to work	391	3.29	1.00
Work-life balance	391	3.68	0.93
Effective organization of work	391	3.69	0.92
Work efficiency	391	3.57	1.03

Source: Field survey (2021)

The findings further suggested that working remotely assisted in limiting unnecessary interactions and helped workers to save time commuting, with mean values of 3.43 and 3.59, and standard deviations of 1.10 and 1.00. Moreover, results of the study indicated that working remotely enabled employees to balance work and personal life, with a mean value of 3.68 and a standard deviation of 0.93. This result is in agreement with the findings of Wang et al. (2021) who argued that through remote work employees are able to balance work and other personal and family related issues. The findings further suggest that working remotely enabled employees to effectively organize their work, with a mean value of 3.69 and a standard deviation of 0.92. Finally, the study suggests that workers are efficient when working from home, as they are able to plan and schedule their activities to suit them.

Challenges in Remote Work

Working remotely is not without challenges. Despite the opportunities and benefits that come along

with remote work, empirical literature suggests some challenges. One of the challenges identified by this study was work-home interference. Respondents indicated that working from home comes along with family interferences, especially from spouses and children, with a mean of 3.01 and a standard deviation of 1.04. This finding corroborates the result of Batur and Nart (2018) who established that work-family conflict is one of the major challenges in remote work. In addition, respondents indicated that during the period of working from home, the time they spent on family responsibilities often interfered with their work responsibilities (Home-to-work Interference), with a mean of 3.36 and a standard deviation of 0.96. The findings of the study further indicated that online communication, when working from home is not as efficient as face-to-face communications in the office (Ineffective Communication), with an average response of 3.40 and a standard deviation of 0.96. This finding corroborates with Lazarova (2019), who espoused that poor communication was a problem in remote work, which resulted in inefficiencies on the part of employees. Remote work relies heavily on ICT and this sometimes can pose a challenge to effective communication. Coffey and Wolf (2018) argued that social interaction is crucial for human existence. They averred that the opportunity to have a face-to-face interaction, in personal team meetings and random or

unplanned meetings which exist in a traditional working environment is missing in remote work settings which deprive the remote worker of affiliation.

Moreover, the findings indicated that during the period of working from home, employees delayed finishing jobs, even when they were important (Procrastination), with a mean of 3.18 and a standard deviation of 1.03. This finding is in line with Wang et al. (2021) who confirmed that procrastination is a challenge when working from home. They found that, although workers were committed to productivity, they suffered from self-regulation failure. The findings again suggested that employees feel lonely with remote work arrangements, with a mean of 3.26 and standard deviation of 1.09. This finding conforms to the work of Wang et al. (2021) who contended that loneliness is a challenge to remote work. They further indicated a psychological challenge as admitted by some of the participants because ICT enabled communication was more task focused. Workers therefore longed for a sense of belonging. Table 2 represents descriptive statistics on the challenges of remote work.

Table 2. *Challenges in Remote Work*

Variable	Obs	Mean	Std. Dev.
Work-Home Interference	391	3.01	1.04
Home-to-work Interference	391	3.36	0.96
Ineffective Communication	391	3.40	0.96
Procrastination	391	3.18	1.03
Loneliness	391	3.26	1.09
Security Risks	391	3.27	1.08
Lack of technical know-how	391	3.12	1.17
Lack of monitoring	391	3.33	1.04

Source: Field survey (2021)

Furthermore, respondents also indicated that remote work opens up the organization to many potential security risks such as security leaks, on-line hacking, external breaches as well as data exposure (Security Risks), with a mean of 3.27 and a standard deviation of 1.08. The study additionally discovered that remote work is associated with a lack of digital literacy which poses a challenge to work efficiency (Lack of technical know-how), with a mean of 3.12 and a standard deviation of 1.17.

Conclusions and Implications

This study has provided significant insight on triggers of remote work and remote work in Ghana. The study is important as it highlights the tools use to implement remote work and the opportunities and challenges of remote work in Ghana. Though some empirical studies have provided significant literature on remote work, studies in the Ghanaian setting remain limited, thus highlighting the importance of this study and the contribution it makes to empirical literature. The study found that remote workers in Ghana mainly used Emails, WhatsApp, Zoom and Google Meet as tools to facilitate tasks. Additionally, findings of the study indicated that remote work presents a lot of opportunities for employees who made use of it during the COVID-19 era. Some of these opportunities included avoidance of vehicular traffic to workplace, work-life balance, and work flexibility among others, which were consistent with extant literature. Challenges associated with remote work in Ghana were also identified, including work-home interference, loneliness, security threats and lack of monitoring. In view of the opportunities identified to be associated with remote work, this study recommends that the management of organizations should take advantage by implementing innovative and the state-of-the-art technology to enhance remote work in Ghana. Employees should be given the necessary assistance in areas of technical training and collaborations to become efficient and productive to work remotely in order to reap all the benefits that come with remote work.

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The Effects of E-Governance on Customer Satisfaction: The Case of Addis Ababa Water and Sewerage Authority

By *Jemal Abagissa, PhD*

The emergence of electronic governance has been one of the important developments in public administration in the past decades which helped governments as a means of reducing costs, improving service provision for citizens and increasing effectiveness and efficiency. The purpose of this study is to assess the effects of e-governance on customers' satisfaction. The target population comprises customers from the Addis Ababa Water Supply and Sewerage Authority (AAWSSA in its Arada branch. Both quantitative and qualitative data were collected to analyze the effects of e-governance on a sample of 330 users of water billing. Data were analyzed using the five attributes of SERVPERF model. The study revealed that e-governance has brought positive effect on service delivery by enhancing the customers' perception on the service delivery and their satisfaction even though the satisfaction level is moderate. The satisfaction level is moderate because the office encountered challenges such as customer e-service illiteracy of the customers, poor internet infrastructure and dependence on external e-service platform suppliers.

Key words: E-governance, Service delivery, Customer, Customer satisfaction, SERVPERF, AAWSSA.

Background of the Study

E-Governance is the public sector's use of information and communication technologies with the aim of improving information and service delivery, encouraging citizen participation in the decision-making process and making government more accountable, transparent and effective (Mesfin, 2010).

In other words, e-Governance refers to the use by government agencies of information technologies that have the ability to transform relations with citizens, businesses, and other arms of gov-

ernment. These technologies can serve a variety of different ends: better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information and more efficient management.

Governments take resources from citizens and transform them into products and services to create public value. Public value includes the quality of citizens' experiences of public services, and it can be created and improved by improving public services quality. Since the emergence of electronic government, the significance of providing quality services online to citizens has been recognized by many government sectors.

In 2013 a public private partnership (PPP) was launched with the Ethiopian Ministry of Information and Technology known as "LEHULU" or one window service for AAWSSA, EELPA, ethio-telecom, and ETV for bill payments.

Like many other agencies of the city administration of Addis Ababa, Addis Ababa Water and Sewerage Authority practiced the E-governance system in order to provide its services easily and conveniently. Among the services provided by the authority, bill payment is the one which is processed through mobile banking and CBE-birr in collaboration with commercial banks of Ethiopia.

The objective of this research is to examine the effects of the application of e-governance on customers' satisfaction in Addis Ababa water and sewerage authority (AAWSA) at Arada branch.

This research applies the SERVPERF model which is the subset of the SERVQUAL model to examine the effect of e-governance on customers' satisfaction. The detail of these models will be discussed in the literature section of this study.

Short highlights on e-governance and SERVQUAL model

Traditionally citizens go to a government office to transact with government offices to get a certificate, apply for or renew a passport and driving license or to pay utility bills. Today using ICT systems, it is possible for the same interaction to take place in a service centre close to the citizen using the internet or even at a kiosk. These services are provided in different modalities.

Modalities of E-government Initiatives

The emergence of Information and Communication Technology has provided means for faster and better communication, efficient storage, retrieval and processing of data and exchange and utilization of information to its users, be they individuals, groups, businesses, organizations or governments.

E-government is broadly defined as the continuous optimization of service delivery, constituency participation, and governance by transforming internal and external relationships through technology, the Internet, and new media. Although e-government encompasses a wide range of activities and actors, four distinct sectors can be identified. This includes Government to Government (G2G), Government to Citizen (G2C), Government to Employee (G2E) and Government to Business (G2B).

1. Government to Government (G2G): this modality is considered as the backbone of e-government. Governments run and update their own internal system and procedures before electronic transactions with citizens and businesses to be successful. This includes the use of information technologies by different governmental agencies to share or centralize information, or to automate and streamline intergovernmental business processes such as regulatory compliance, and has produced numerous instances of time and cost savings and service enhancements.

2. Government to Citizen (G2C): this modality deals with the relationship between government and citizens. G2C allows citizens to access government information and services instantly, conveniently, by using multiple channels. It is a way

governments share information and deliver services to achieve greater transparency and convenience in transacting with citizens. These initiatives attempt to make transactions, such as renewing license issuance, certifications, paying taxes and bills and applying for social benefits using ICT systems.

3. Government to Business (G2B): this type of e-government initiative involves business sector using e-governance as a venue for reducing costs through improved interactions with government organizations. On the other hand the government applies this initiative to transact goods and services such as Tendering, auction, and information and administrative management tools that involve the private sector.

4. Government to Employees (G2E): It is a combination of information and services offered by government institutions to their employees to interact with each other and their management. G2E is a way to provide e-learning, bring employees together and to encourage knowledge sharing among them. It gives employees the possibility of accessing relevant information regarding compensation and benefit policies, training and learning opportunities, and allowing them access to manage their benefits online with an easy and fast communication model. G2E also includes strategic and tactical mechanisms for encouraging the implementation of government goals and programs as well as human resource management, budgeting and dealing with citizens (Ndou, 2004).

SERVQUAL and SERVPERF Models

This section presents a review of the existing literature about service quality and its measurements. It examines service dimensions and its measurement approaches. Two prominent service quality measurement approaches are also presented and compared.

Service Quality Measurements

Many different methods exist to measure, control and improve quality in various fields. Among the different approaches of service quality that measure the external perspective, the one given by PZB (1985) seems particularly useful. They (PZB) define service quality as the degree of discrepancy between consumers' perceptions and expectations

in terms of different but relatively important dimensions of service quality.

According to the authors, customers' perception of service quality depends on the nature of the discrepancy between the expected service and service perceived by the client (Parasuraman et al., 1985). Service quality is thus operationalized as performance (P) – minus expectation (E). Thus by this perspective, the way to maximize quality is to maximize the difference between these measures, P and E. In other words, it means exceeding the customers' expectations. Service quality is therefore a function of pre-purchase customers' expectations and perceived process quality.

The SERVQUAL instrument was originally measured on ten (10) aspects or dimensions of service quality: reliability, responsiveness, competence, access, courtesy, communication, credibility, security, understanding, and tangibles (Parasuraman et al., 1985) as a means of measuring the gap between customer expectation and experience.

The original construct was found to be complex, subjective and statistically unreliable, and as a result it was simplified and modified to the five dimensions which are measured on five (5) aspects, namely - reliability, assurance, tangibility, empathy and responsiveness.

The five Dimensions of Service Quality

As stated above the revised SERVQUAL scale consists of five dimensions, namely, tangibility, reliability, responsiveness, assurance and empathy. What are these dimensions?

A. Tangibles

Tangibility can be defined as physical facilities, equipment and the appearance of employees and management team. Further, it is also defined as the ease in visibility of resources necessary for providing the service to customers, well groomed employees and ease in accessing written materials like pamphlets, brochures, folders, and information books will have a favorable consequence on the level of customer satisfaction (Parasuraman et al., 1985). Modern looking or sophisticated equipment and visually appealing or attractive ambience are viewed as the positive impacts of tangibility on customer satisfaction in the banking sector.

B. Reliability

Reliability is defined as the ability to perform the required service to customers dependably and accurately as promised to deliver (Zeithaml et al., 1990). Dealing with whatever problems in services are encountered by customers, performing the required services right the first time, services being rendered at the promised time and maintaining an error-free record are the paradigm of reliability in terms of service quality which will strongly influence the level of customer satisfaction (Parasuraman et al., 1988). Accuracy in completing orders, maintaining precise records, accuracy in billing, maintaining promised services are the basic views of reliability which is considered as the most important factor in convincing customers to remain.

C. Responsiveness

Responsiveness refers to the interest shown in providing prompt service to customers when required. It also includes the willingness and readiness of employees to provide the required customer service without any inconvenience at any time.

D. Assurance

Assurance is defined as the knowledge and good manners or courtesy of employees. It is also defined as the ability of employees with the help of the knowledge possessed to inspire trust and confidence that lead to customer satisfaction.

E. Empathy

Empathy is defined as the ability to take care of customer's attention individually in providing service to customers. Further, it refers to understanding customer expectations better than competitors in providing the required service at any time without any inconvenience. Convenient working hours, individualized attention, better understanding of customer's specific needs, enhanced communication between management and customers will have a positive outcome on customer satisfaction in this regard.

There are also 22 factors or attributes associated with these service quality dimensions. Thus, according to the SERVQUAL Model, quality of services is a construct comprising five dimensions with 22 associated explanatory factors.

Table 1: SERVQUAL Dimensions, Definitions and Explaining Factors

Dimension	Definition	Indicators
Assurance	The ability to convey trust and confidence.	(1) employees who instill confidence in customers, (2) making customers feel safe in their transactions, including secure delivery of items (3) employees who are consistently courteous, and (4) employees who have the knowledge to answer customer questions
Reliability	The ability of employees to perform the promised service timely and accurately.	(1) provision of services as promised, (2) dependability in handling customer's service problems, (3) performing services right the first time, (4) providing services at the promised time, and (5) Maintaining error-free records.
Responsiveness	The willingness of the employees to assist clients and provide prompt service.	(1) keeping customers informed about when services will be performed, (2) prompt service to customers, (e.g., convenient pickup and delivery time), (3) willingness to help customers, and (4) readiness to respond to customers' requests, including flexibility in meeting special handling requirements.
Tangibles	The physical appearance of the public companies, inclusive of the available facilities.	(1) modern equipment, transportation facilities and warehouse availabilities, use of information technologies, port management, (2) visual appearance of facilities and equipment for transportation, warehousing and communication, (3) employees with regard to neatness and professionalism, and (4) visually appealing materials associated with the service of the ESLSE
Empathy	The caring individualized attention that the employee of the public companies staff provides to clients.	(1) giving customers individual attention (2) employees who deal with customers in caring fashion (3) having the best customers interest at heart, (4) employees who understand the needs of their customers, and (5) convenient business hours.

Source: adapted from Parasuraman et al. (1985)

SERVPERF

An alternative instrument to measure service quality was introduced by one of the SERVQUAL critics - Cronin and Taylor (1992). Instead of SERVQUAL, Cronin and Taylor introduced the performance-based measure of service quality called SERVPERF.

SERVPERF excludes consideration of expectations. In other words, SERVPERF differs from SERVQUAL in that SERVPERF does not assess gap scores because the expectations portion is not included. The research of Cronin and Taylor (1992) suggested that although expectations can have an effect on consumers' perception of service quality, the performance minus expectations is inappropriate basis for use in the measurement of service quality.

These scholars state that SERVQUAL's hesitance to treat perceived service quality as an attitude is one of the key reasons why the theory is difficult to put into operation.

The views of the service users may change from time to time depending on certain factors such as the mood and past experience of the individual being interviewed. For example a person who is used to a 5 star hotel will find a 4 star hotel of lower quality while a person who has never been to a 5 star hotel will find 4 star hotel a high quality hotel. This is one of the weaknesses of the SERVQUAL model in measuring expectations.

Based on their findings Cronin and Taylor (1992) proposed a tool they called SERVPERF as the replacement of SERVQUAL. They state that the performance-based scale developed is efficient in comparison with the SERVQUAL scale. That is it only measures the perceived service process performance and disregards expectation of the customers before their service encounters. The rationale for doing so is because:

- a. Measuring the customers expected service level before the service is rendered is not always possible,
- b. Measuring the expected service level after the service has been rendered is inaccurate as the customer's expectation by then has already been biased by the service rendered.

In this paper, the author uses SERVPERF. The researcher preferred SERVPERF as it provides a benchmark based on customer opinions on their experience using key service quality attributes identified in this study.

3. Sources of Data and its Analysis

The population of this study consists of customers using e-service system to pay their water bills to the Addis Ababa Water Supply and Sewerage Authority in its Arada sub-city branch of Addis Ababa. There were a total of 36,578 customers at the time of this study.

Figure 1: Arada sub-city



Source: Addis Ababa City administration

Sample Size

As stated above, there are 36,578 customers at the time of the study in the branch. From these, the following are active customers who pay bills through electronic media (i.e. CBE Mobile banking, CBE Birr, and Internet banking). The researcher first identified the number of e-service users at the office for three consecutive months (November to January) to find an average number.

1. November 2021 = 4,689
2. December 2021 = 4,385
3. January 2022 = 4,737

Then the average population found to be 4600 using the following simple formula.

$$\frac{N = 4,689 + 4,385 + 4,737}{3}$$

N= 4,600 where N stands for population

Out of this, the sample of 330 customers was selected based on convenience sampling. That means the customers were approached at the AWSSA branch office and were asked to fill in the questionnaire about the service quality and their perceptions on the spot.

The Variables

In order to measure users' satisfaction, data are collected using the five variables identified in the SERVPERF scale namely; Tangibility, Reliability, Responsibility, Assurance and Empathy. Each variable was broken down into sub components as indicated in Table 1 of this paper. The researcher customized the components to suit the topic under discussion for greater validity. One should also note that though e-service is a unique type of service delivery used to avoid physical contacts with service providers, the variables used in this study have a pervasive nature of touching upon other types of service modalities as well.

Data Analysis

The results of the questionnaires were analyzed using the Likert scale method and then entered into SPSS software. The Likert scale consists of five ordinal measures ranging from 1 to 5. Based on the frequency distribution, each response to each variable was analyzed.

4. Presentation and Analysis of the Data

This section begins with the users' responses on the level of e-service provided by the authority and followed by more related analysis.

Table 2. *The Level of Electronic Service Performance*

		Frequency	Percent	Valid %	Cumulative %
Valid	at infant stage	286	86.7	86.9	86.9
	good	25	7.6	7.6	94.5
	very good	12	3.6	3.6	98.2
	very attractive	6	1.8	1.8	100.0
	Total	329	99.7	100.0	
Missing		1	.3		
Total		330	100.0		

Table 2 shows that 86.9% of the respondents rated the level as at infant stage, 7.6% of the respondents rated it as good. The rest, 3.6% and 1.8% categorized it as very good and attractive respectively. From the above statement the researcher can conclude that the E-service provision of the authority is at infant stage, which is unsatisfactory showing more is to be done by the authority.

Types of Services Provided to Customers

There are different services being provided by the authority.

Table 3. *Type of Electronic Services Provided to Customers by AAWSA*

Types of electronic services provided to customer by AAWSA				
		Frequency	Percent	Valid Percent
Valid	AAWSA's website provide information	15	4.5	4.6
	Billing transaction	297	90.0	90.3
	using AAWSA's services virtually	13	3.9	4.0
	GPS bill reading	4	1.2	1.2
	Total	329	99.7	100.0
Missing		1	.3	
Total		330	100.0	

90.3% of the respondents were using the service for billing transactions. 4.6%) were using AAWSA's website to access information and the rest were using the service for GPS bill reading. From Table 3 it can be concluded that even though AAWSA is providing different services, billing is the one which has been more importantly practiced followed by website information provision.

The Analysis of Data on the Service Quality Dimensions and Customer Satisfaction

A descriptive statistics is employed to analyze the service quality dimensions and their relation to customer satisfaction using mean and standard deviations. Mean score was calculated to show the average responses to each question that was included under each dimension. In this study the mean score between 4.51 to 5.00 is taken as excellent or very good, 3.51-4.50 considered good, 2.51-3.50 considered average or moderate, 1.51-2.50 fair and 1.00-1.50 is poor based on common sense.

A. Tangibility

Table 4: *Tangibility Dimensions*

Measurement Item	Mean	Std. Deviation
Does the system support any handy electronic equipment?	3.2766	1.03863
Is the service provided by electronics convenient for use?	2.9574	1.01724
Is the service including for every one's choice to serve at anywhere?	2.9392	0.92852
Grand Mean	3.05	

Tangibility refers to physical facilities, equipment, and appearance of personnel also known as physical evidence. As shown from Table 4, the highest mean for this dimension comes from the first item, handy electronic equipment; with the mean score of 3.27, indicating the tangibility of E-service of AAWSA is good. The second highest mean comes from the second item; with the mean value of 2.95 indicating customers' satisfaction with is moderate. In general, the grand mean score for the tangibility dimension is 3.05.

B. Reliability

Table 5: Reliability Dimensions

Measurement Item	Mean	Std. Deviation
Is the system error free while using?	2.8997	1.28984
Is the system reliable to use?	3.1277	1.21052
	2.9392	0.92852
Grand Mean	3.0137	

Reliability refers the ability to perform the promised service dependably and accurately. In this case, the highest mean is scored from the second item i.e., whether the system is reliable to use or not with the mean score of 3.12, followed by the first item which is whether the system error free while using or not with a mean score of 2.89. In general, the grand mean score for the service reliability dimension is 3.01. Therefore, the researcher concludes that, in terms of reliability the level of satisfaction is moderate.

C. Responsiveness

Table 6: Responsiveness Dimensions

Measurement Item	Mean	Std. Deviation
Employees are ready to support the customers when facing a problem while using the service alone?	2.6535	1.12956
Does the organization ready to solve a problem while facing the customers?	2.9027	1.09166
Grand Mean	2.7781	

The grand mean of responsiveness dimension is 2.77 showing that customers' satisfaction of is not as much.

D. Assurance

Table 7: Assurance Dimension

Measurement Item	Mean	Std. Deviation
Have no doubt when using the service alone in AAWSA?	2.9210	1.23706
I have no worry about system error ?	3.1246	1.16594
Grand Mean	3.0228	

Assurance dimension refers to the knowledge and courtesy of employees and their ability to inspire trust and confidence including competence, credibility and security. The highest mean score is 3.12 regarding whether the system is error free or not.

The grand mean for assurance is 3.02 indicating that the quality of the service being provided by the organization is in moderate stage.

E. Empathy

Table 8: Empathy

Measurement Item	Mean	Std. Deviation
Employees announced to their customers when any change happens on the system	2.9635	1.26583
Employees effectively manage the complaints and problems of customers	2.7386	0.87220
Grand Mean	2.85	

The highest mean for this dimension comes from the first item followed by the second item which is the effectiveness of employees on managing customers complaints and problems with the mean score of 2.73. The grand mean is also 2.85 which lies within an average or moderate range.

Customers Satisfaction with Particular Reference to e-governance

In this section customer satisfaction is understood as the extent to which the needs of citizens are met using electronic means. In other words, customer satisfaction implies that citizens are able to access services using electronic means in a timely, cost-effective, and efficient manner compared with manual processes.

Table 9: Customers Satisfaction Needs

Measurement Item	Mean	Std. Deviation
I prefer to use electronic services rather than manual or paper-based services	2.9574	1.24132
I am satisfied with electronic services of the organization	2.6869	1.14065
Grand Mean	2.82215	

As shown in Table 9, the highest mean comes from the customers' preference to use electronic services rather than paper-based services with a mean score of 2.95. This is followed by the general satisfaction of customers with the electronic services with a mean score of 2.68. As a conclusion, the grand mean score is 2.82 showing that the overall satisfaction is moderate.

Slow response from employees when encountering problems is blamed for poor performance in many instances. Moreover, lack of awareness from both sides (customers and the employees alike) to utilize electronic services is at lower stage. Some groups of customers are illiterate in the use of electronic services that require internet literacy. On the other hand, even for those who use the e-service, a weak internet infrastructure and swift connection is a hurdle.

Moreover, the electronic service platforms are supplied by the Commercial Bank and Ethio-telecom enterprises. AAWSA uses its website only to release information about its missions and services.

Conclusion

The main objective of this study is to examine the effects of E-governance on customer's satisfaction in Addis Ababa Water and Sewerage Authority (AAWSA) by employing SERVPERF model with tangibility, reliability, responsiveness, assurance and empathy as service quality dimensions.

E-governance quality is measured by the realization of the potential advantages of the platform for the benefit of citizens in their interaction with government. E-governance service quality is therefore the degree to which an e-government enables citizens, businesses or agencies to achieve their governmental transactions.

The findings of this study indicate that the level of customer satisfaction with the service of Addis Ababa Water Supply and Sewerage authority is moderate in most service quality metrics used in the study.

Slow response from employees when customers encounter problems are blamed for poor performance in many instances. On the other hand, weak internet infrastructure and poor connection is a hurdle.

Moreover, awareness from both sides (customers and the employees alike) to utilize electronic services is at lower stage. Some groups of customers are illiterate in the use of electronic services that require internet literacy

Only a few thousand customers are using on-line billing among tens of thousands of AWSSA's customers in the branch. Many of them still prefer manual bill payment. Having the education and desire to access information is critical to e-government efficacy. Presumably, the higher the level of human development, the more likely citizens will be inclined to accept and use e-government services.

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How Leadership Needs to Change After Covid-19?

By *Mostafa Sayyadi*

This article raises a vital question as to how executives can unleash the power of knowledge and transformational leadership in organizations. We asked our executive colleagues and scholars what the post-pandemic world would look like. This is what they predict: Better-managed desk space, real-estate evaluation, right sizing, a talent age gap as many seasoned executives retire, and restructured workweeks. Based on our interviews, we posit that transformational leadership has a direct impact on an organization's internal resources and may promote a knowledge management process. In particular, transformational leaders strongly manifest themselves as change agents who have a significant impact on the culture, structure, and strategy of a firm. This article suggests that managers should develop a supportive workplace to promote knowledge management processes coupled with transformational leadership. We found that culture, structure, and strategy constitute the foundation of a supportive workplace for both remote and in-organization stationed workers. If an organization's culture, structure, and strategy are not completely in favor of supporting knowledge management processes, then organizations may not effectively implement knowledge management projects and the promoting of knowledge management will be ineffective. Accordingly, this article suggests that transformational leaders that support knowledge management efforts depend on a supportive culture, a flatter structure, and iterative strategic formulation in organizations.

Keywords: Post-Pandemic world, Transformational leadership, Knowledge management, Corporate culture, Corporate structure, and Corporate strategy

Introduction

Transformational leadership, as noted in previous studies, primarily by Jung et al. (2003), Lee and Choi (2003), and Fugate et

al.(2009), suggest that transformational leadership directly influences knowledge management. However, there is a gap in the literature when examining the implications of transformational leadership for knowledge management through the better management of structure, culture, and strategic initiatives. The question remains: How can transformational leaders effectively manage knowledge in organizations? This article aims to establish the relationships among culture, structure, strategy, knowledge management, and transformational leadership. In an attempt to answer the question, it is hoped that we can prepare executives for the post-pandemic world.

Executives possessing the skills of transformational leadership engage in the facilitation of building and sustaining relationships with subordinates (Marturano & Gosling, 2008; Patiar & Mia, 2009). Knowledge management has been also defined as a set of processes aimed at creating value through generating and applying intellectual capital (Marr et al., 2003). A systematic approach toward transformational leadership as a significant indicator of improving knowledge management processes can provide practical guidelines for management executives (Fugate et al., 2009; Jung et al., 2003; Lee & Choi, 2003; Politis, 2001; Politis, 2002; Sosik, 1997). In addition, developing a new and dynamic conception of transformational leadership within the knowledge management paradigm can propel leaders into the post-pandemic world in which they now engage.

When executives take a resource-based view and a knowledge-based view of the organization, they begin to draw upon various organizational factors mediating the relationship between knowledge management and transformational leadership. The resource-based and knowledge-based view of the firm underpin the various organizational factors that link transformational leadership, knowledge management, and organizational fac-

tors together to better perform in a post-pandemic world. This new normal, which is coined today, places transformational leaders in a position to reshape culture, structure, and strategic initiatives, and one way to do this is by aiming at propelling the processes of knowledge management. How do we manage knowledge when everyone is remotely engaged? This question resides in not only the C-Suite but through corporate America and world in which global business endures. This article attempts to advance the post-pandemic approach of transformational leadership and knowledge management.

Methodology

Finding the right formula for the post-pandemic is on the minds of the C-Suite, middle management, down to the front line workers. After interviewing executives, we found five pillars of success that is undeniably important to consider. They are transformational leadership, knowledge management, culture, structure, and strategy. These five key words cannot make or break an organization but we have found that incorporating each of them together can begin to move an organization to COVID-19 recovery.

The literature review is extensive in this area and various search filters, such as scholarly peer-reviewed articles and a selected timeframe of Ph.D. dissertations from 1990 to 2019, were applied a databases (i.e. ScienceDirect, ProQuest, and the Academy of Management website). This initial search resulted in 247 relevant samples. In the second step, we read the titles, abstracts, and introductions of these samples and compared them against the inclusion criteria (i.e. research question, suitable data, key variables, and validated measures). If the titles, the abstracts and the introductions recommended that the work could successfully meet our inclusion criteria, we read the full-text version for identifying criteria. In the next step, we identified our final samples (i.e. 54 articles, 8 books, 2 book chapters, and 6 PhD dissertations). By analyzing these articles, books, book chapters, and Ph.D. dissertations, we found relevant data sufficient to provide arguments on the mediating effects of organizational resources (i.e. culture, structure and strategy) as they relate to transformational leadership and knowledge management. By calling on our executive colleagues across industries in North America and

reviewing the literature, we found kernels that can direct counter-intelligence to enhance the COVID-19 recovery planning.

Literature Review

Conner (1991) highlights the fundamental underpinnings of the resource-based view by which the critical role of organization's internal resource is considered to achieve a higher degree of competitive advantage. Barney (2002, p.155) describes these internal resources as "all assets, capabilities, competencies, organizational processes, and firm attributes" which improve firm competitiveness when controlled effectively. These internal resources should be rare and difficult to imitate in order to create sustainable competitive advantage (Bakar & Ahmad, 2010; Barney, 1991; Cardinal et al., 2001; Clulow et al., 2007; Darcy et al., 2014). However, in the post-pandemic environment, modern and innovative approaches will help an organization survive while those organizations struggling with inertia will forfeit the recovery effort to some extent. Only high performing organizations will survive.

Accordingly, the resource-based view elucidates two capabilities of causal ambiguity and social complexity aiming at decreasing the risk of organizational capabilities being imitated by competitors. While causal ambiguity has been defined as multiple interpretations (Powell et al., 2006; Reus, 2004), Reus (2004, p.27) refers to social complexity as "the extent to which resources are embedded in multiple organizational members and the relationships among them." The post-pandemic formula for survival is human resources as talent will be fleeting and newcomers will be flooding the resume surge.

Secondly, the knowledge-based view emerges and highlights that the firm's capabilities to utilize and create knowledge are most crucial for sustainable competitive advantage (Zheng et al., 2010). The new knowledge created from pandemic concurrent remote work has eluded that functionality is existential to performance. In fact, a firm's capabilities allow it to leverage knowledge in a more efficient manner using technological platforms that once existed as a past time as opposed to a necessary medium for success.

Executives and colleagues agree that by enhancing these two paradigms of causal ambiguity and social complexity, the knowledge-based view focuses on embedding knowledge in organizational members, and accordingly, uncovers tacit knowledge embedded within employees as a more important source of competitive advantage than explicit knowledge (Darroch, 2005; Reus, 2004; Wu & Chen, 2014). Sitting behind a computer has now become the norm and technology has enhanced the platform of survival. Thus, while causal ambiguity and social complexity are all features that are relevant to organizational culture, organizational structure, and organizational strategy must embrace all available resources to survive the pandemic. Therefore, these three organizational factors affecting competitive advantage through enabling knowledge within companies present themselves as internal resources, working remotely, that can be controlled by organizations effectively. However, we have found that both effectiveness and efficiency are tantamount and organizations cannot survive the post-pandemic without both being operative concurrently.

Early research indicates that patterns exist and change efforts must constantly be tweaked in real time as organizations plow through the pandemic to recovery. For example, Schein (1984, p.37) defines organizational culture as a “pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems.” The new and modern technology has to be embraced in both onboarding and for seasoned executives for survival to be imminent. We have found that technology is not easily adaptable for some but with the chance for survival in a concurrent pandemic world, we found that only the people that became familiar with technology survive. Behavior has become an elusive target as many people are not sitting by the computer all day and yet the perception is that human resources are available 24-hours a day, seven days a week. Corporate culture has shifted from face-time to real-time. In 1996, O’Reilly and Chatman (p.160) defined organizational culture as a “system of shared values defining what is important, and norms, defining appropriate attitudes and behaviors, that guide members’ attitudes and behaviors.” One can only suggest that based on these above conclusions that

organizational culture is highly reflected in shared assumptions, symbols, beliefs, values, and norms, which specifies how employees perceive problems and appropriately react to them. In a post pandemic world, problems are dealt with in a remote setting leaving a time-lapse for both evaluation and application. Culture has to adapt accordingly, for example, Balogun and Jenkins (2003) demonstrate that there is a considerable alignment between the knowledge-based view of the firm and organizational culture and this will improve communication among remote workers if used adequately. More specifically, remote worker knowledge acquired through learning from others, subsequently posit that organizational culture is equal to tacit knowledge and the strategic factor of competitive advantage. Thus, giving people platform space and presentation time is an effective use of time and resources because organizational culture when used as an internal resource can positively influence competitive advantage through developing shared assumptions and values, which manifest as tacit knowledge embedded in remote workers.

Scholars have found that organizational structure refers to the bureaucratic division of labor accompanied by control and coordination between different tasks, in order to develop communications within organizations (Scott, 2003). This brings to light the knowledge-based view, for example, Grant (1996) states that knowledge is merely created by people and argues that knowledge application and integration are the most important roles of firms. During the pandemic, knowledge is shared via Zoom, WebEx, and internal communication systems. With some limitations, knowledge is vibrant and in some cases real-time. The limitations are security and hackers coupled with individually sponsored internet connections. Those organizations that managed to capitalize on technology survived and continue to thrive today. Thus, the capability of companies to integrate the employee’s specialized knowledge into products and services can largely generate competitive advantage for them. This competitive advantage has prospered for some and has eliminated some of the players from the marketplace. Some organizations thrived based on a thin, highly diversified and decentralized structure. Eisenhardt and Santos (2006, p. 10) refer to a company’s structure as an “efficient mechanism for coordinating a complex system comprising multiple specialized units,” and highlight that organizational capabilities should be “structured hierarchically

according to the scope of knowledge that they integrate.” Scholars have coined this as electronic leadership (Provitera, 2020). A term with less credence before the pandemic that has now reached fruition. Hence, survivors found that the organizational structure that reflects an internal resource that is used to integrate intellectual capital and creates competitive advantage would thrive in the post-pandemic world.

The post-pandemic recovery requires a strategic initiative that is developed to monitor and sustain competitive advantage concurrently. Decades ago, Hofer and Schendel (1978, p. 25) found that strategy is a “fundamental pattern of present and planned resource deployments and environmental interactions that indicates how the organization will achieve its objectives.” During the pandemic, executives are striving to meet the customer needs while maintaining employee satisfaction levels and stockholder equity. Objectives are key to success if they counteract the demise of supplier support and vendor relationships as the world manages the pandemic. Andrew (1971) describes strategy as a pattern of decisions and plans that are directed at interacting with the corporate environment and efficiently allocating capabilities to achieve organizational objectives. Thus, the primary function of strategy is to develop goals and plans to restructure unclear and vague situations into a set of organizationally resolvable problems. The pandemic evolves around the most hypercompetitive pressure from both internal and external sources as a result, organizational strategies are formed to efficiently deploy the capabilities and interact with environments (Rumelt, 1979).

To best describe the actions necessary to handle the tumultuous post-pandemic, we emphasize the importance of the knowledge-based view. Our reasoning is that more so today than pre-pandemic times, organizations exist as social communities designed to enhance competitive advantage by utilizing and creating new ideas and knowledge. Similarly, Grant (1996) focuses on knowledge application, and explains the need for firms to apply knowledge in order to enhance competitive advantage. Accordingly, knowledge creation and application manifest themselves as constructs of the knowledge-based view (Zheng et al., 2010). From the earlier discussions it is evident that organizational strategy is a sum of objectives, plans and procedures designed to efficiently upgrade capabilities and interact with the environment,

which can assist both paradigms of knowledge utilization and creation as constructs of knowledge based view. In particular, strategy defines a pattern to deploy organizational capabilities and interact with the external environment. Strategy actually determines how companies should utilize and manage their knowledge assets to create new ideas and knowledge in achieving organizational objectives (Sveiby, 2001). As a consequence, organizational strategy is an internal resource affecting knowledge as the most strategic factor for competitive advantage. The next section will focus on the significant role of transformational leadership in leading changes to better manage organizational knowledge. Organizations such as but not limited to Zoom, WebEx, and Microsoft Teams led the way for the remote worker.

The key for this section of the article is to advance the current literature on transformational leadership by offering novel insights into how executives can have a direct impact on organization’s internal resources now as they prepare for the post-pandemic. Particularly, we feel that during the pandemic, executives have to enable culture, create new structures, and create innovative strategic initiatives. Without a grasp on these three tenets, executives are bound to fail in the post-pandemic.

Discussion

In the post-pandemic, organizational culture is projected to include three dimensions of collaboration, trust, and learning (Lee & Choi, 2003). Collaboration is highly facilitated by diminishing isolation and providing opportunities for further dialogue (Darling, 1990). Transformational leadership enhances interactions and dialogue by aligning the follower’s individual interests with collective interests (Bass & Steidlmeier, 1999). In this way, leaders, now and during the post-pandemic, can positively enhance collaboration through idealized influence that develops relationships with subordinates. Podsakoff et al. (1990) state that transformational leadership engenders trust by showing concern for both the organization’s needs and the follower’s interests at the same time. This is particularly important as remote workers learn how to swim while sea legs are still growing. Thus, transformational leaders show concern through individualized consideration by focusing on identifying follower’s individ-

ual needs within organizations (Bass & Steidlmeier, 1999). These leaders instill trust in subordinates to enhance commitment and support towards achieving their vision. This is a moving target as people manage household interests with the workflow daily commitment. More importantly, as the pandemic unfolds, transformational leaders provide the freedom for followers to investigate new ideas and knowledge (Dix, 2013). With new and reborn technology, it is apparent that transformational leadership can be applied to develop learning climates. Thus, leading to the fourth tenet of transformational leadership. Propelling a learning culture through intellectual stimulation that facilitates knowledge sharing and new idea generation. This reality has many specific prongs such as managing working systems while discarding others and finding the right technology that works for industry effectiveness and efficiency. Trusting a system that is both secure with modern technology will help executives lead now and in the future.

Executives that employ the transformational leadership style can build the necessary trust to thrive. For example, an empirical study by Podsakoff et al. (1990) posed a research question: How does transformational leadership impact the cultural aspect of trust? Podsakoff et al. (1990) found a way to improve followers' trust in organizations a few decades ago yet still applies today. Data from this study supports the fact that there is continuous support for the positive impacts of transformational leadership on the cultural aspect of building, maintaining, and sustaining trusting relationships.

During our pandemic, collaboration is a critical factor to develop the range of knowledge access (Grant & Baden-Fuller, 1995; Grant, 1997; Grant & Baden-Fuller, 2004). Various scholars, such as Sveiby and Simons (2002), highlight the vital importance of collaboration in supporting knowledge management processes. In fact, this cultural aspect enhances a shared understanding of the problems among employees, which is a necessary precursor to create new ideas and knowledge (Choi, 2002; Fahey & Prusak, 1998; Leonard 1995; Leonard & Sensiper 1998.). These scholars set the precedent for what we experience on a day-to-day basis in our remote work environment.

When asking executives how transformational leadership works best for them. The undeniable reason, they expressed, is being an enable of

extenuating trust-based relationships. They argued that this was the only way to help followers build relationships and share tacit knowledge. Until recently, Lines et al. (2005) work that agrees that a leader's ability to create knowledge and develop a more innovative climate is a product of building the follower's trust in their leader's decisions has a more prominent application. This is not a novel issue and has surfaced as a scholarly idea for decades. It simply has more application today as we survive the pandemic and prepare for the post-pandemic. For example, several authors, such as Nahapiet and Ghoshal (1998), Goh (2002), Rowley (2002) and Wagner (2003), also support that high trust environments could positively impact the tendencies of human assets to share their knowledge with others.

Undoubtedly, the knowledge-based view, embedding knowledge in organizational members is an important paradigm to support knowledge as the most strategic asset of organizations now and in the future (Darroch, 2005; Wu & Chen, 2014).

After our discussion with executives, we posit that sharing best practices and experiences (i.e. learning, technology, and presentation equipment) could play a crucial role in embedding organizational knowledge in members and supporting this strategic asset of a company for the post COVID-19 recovery. One kernel that came out of our discussions are based on the newly surfaced but ever reaching concept of resilience. Resilience is added to the discipline of operational risk management as firms realize risk is uncertain and needs to be carefully reviewed and managed. Thus, during the pandemic, learning has been also highlighted as a precursor for knowledge creation, and as Choi (2002, p. 52) stated, "The amount of time spent learning is positively related with the amount of knowledge." Our research indicated that time is of the essence and technology superseded our expectations leaving the human element as a vital resource in the remote working world. Similarly, decades earlier, Huber (1991) and Garvin (1993) posited that firms emphasizing the cultural aspect of learning are stronger in creating new knowledge, and transferring knowledge within the organization. Executives have proclaimed this fact as they transmit information simultaneously as they disseminate customer, shareholder, and employee information. We asked executives how they felt about collaboration today and the result was of resounding importance. Meetings have to

be quick, exact, and important, or they are unnecessary. Time on the computer has to be weighed with communication and face-to-face responsiveness. For example, the empirical study by Sveiby and Simons (2002) explored the relationship between the cultural aspect of collaboration and knowledge management. An online questionnaire was developed and distributed to employees, inviting them to participate in the survey. The sampling design for this research was probability sampling which resulted in 8277 responses. The findings revealed that collaboration could positively contribute to knowledge management in organizations. This study was the focal point of our discussion and it reiterates the importance of both technological and human resources working in tandem.

We asked executives so what? And they responded with the fact that transformational leadership has been regarded as an appropriate leadership theory for providing a better environment for subordinates to explore new ideas and create more knowledge. Which, is in line with the work of Dix, in 2013. The executives that emphasized the different aspects of transformational leadership and how they apply to the pandemic supported this.

We now demonstrate our findings. Intellectual stimulation aspect of transformational leadership concentrates on developing knowledge sharing and inspiring followers to generate new solutions and a better environment (Birasnav, 2014; Nemanich & Keller, 2007). In order to support the intellectual stimulation aspect, transformational leaders develop decentralized structures with the aim of improving knowledge sharing and creating a more innovative climate. How this decentralized structure exists in a cloud format was truly interesting. For instance, hierarchy, while still maintained and respected, gave way to a more general response system by subordinates. Followers felt as if they gained wings, learned to fly, and became much more gregarious during meetings. This argument can be justified by accounting for the crucial role of decentralized structures in facilitating the exchange of ideas and the implementation of more innovative solutions based on stipulating the power of decision-making in and around the organization (Mahmoudsalehi & Moradkhannejad, 2012; Serrat, 2017; Zheng et al., 2010). Decentralized structures preceded the pandemic but we found it became a norm and we do not see it changing in the post-pandemic. Moreover, transformational leaders inspire and transform aggregate human

capital into social capital in order to implement the required changes in the status and create a better situation. We found ourselves barely surviving and at first meetings in remote settings were vibrant and vocal. However, as the pandemic settled in, meetings became more status quo and only needed when necessary. Thus, the more highly formalized structures that remained more bureaucratic, and, in fact, was noted by executives themselves as being somewhat negatively, contributes to the effectiveness of transformational leadership in changing existing situations and in creating a better environment (Jung et al., 2008). Did they? We cannot say that the environment is better based on our inquiry but we can say that it is working and is sustainable. Thus, as we appear to remain in remote settings, as Tafvelin (2013) once found, transformational leaders achieve a higher degree of effectiveness in decentralized structures. This was confirmed in our conversations with executives in the pandemic world we live in.

Thus, the post-pandemic decentralized structures may improve interactions, create more knowledge, and facilitate knowledge management processes in organizations as once posited by scholars (Bennett & Grbriel 1999; Choi, 2002; Claver-Cortes et al., 2007; Gold et al., 2001; Hellstrom et al., 2000).

One of our main concerns was how executives delegate during the pandemic. Knowing that delegation of decision-making power could create a climate that in turn develops inter-departmental communication within organizations (Cardinal, 2001; Damanpour, 1991; Sivadas & Dwyer, 2000; Woodman et al., 1993), we found just the opposite. Executives turned over responsibility to their subordinates and watched them not only survive, but also thrive. Executives mentioned that decentralization encourages organizational communications, and consequently develops a climate of openness for employees to exchange their new ideas. In the remote setting, this was done via email communication, instant messenger, and text. Pre-meeting and post meeting communication was enhanced with this technology. Thereafter, once the information and clarification is disseminated, then the employees can implement ideas through the delegated authority of decision-making to their departments to the lowest levels possible and still keep successful execution. Executives agreed that pushing decision making down to a through is vital for post-pandemic recovery.

We found that executives agreed with the notion emphasized by Choi (2002) and Zheng et al. (2010), who pressed the point of structural aspects on various knowledge management processes such as knowledge acquiring, creating, sharing, and utilizing are prominent today as we navigate through a challenging working environment.

In 2004, scholars found that organizational strategy is theorized to encompass four dimensions, including analysis, defensiveness, futurity, and pro-activeness (Bergeron et al., 2004). In applying Bergeron et al. (2004) approach to strategy (using the four aspects), analysis strategy aims to create knowledge and find the best solution by evaluating various options. Correspondingly, this strategy stimulates organizations to apply information systems in their decision-making processes in order to investigate various alternatives and options (Cohen & Sproull 1996; Talke 2007; Zheng et al., 2010). Based on the above tenets, executives agreed that transformational leaders apply analysis strategy to meet the goals of intellectual stimulation, which seeks to provide new and innovative solutions for organizational problems. The point was emphasized with the newly structured use of resilience and the focal point moving tandem with operational risk management. Financial risk management illuminated but the operational risk superseded as organizations struggled for survival. Focusing on the post-pandemic, these leaders realize the need to develop a futurity strategy to develop a more comprehensive vision for future and incorporate upcoming trends in the business environment (Akman & Yilmaz, 2008). We found that mission and vision statements were altered for con-current pandemic concerns. An operative and breathing movement that first surfaced as safety measures for all were implemented. Current literature provides evidence that there is a positive relationship between transformational leadership and both strategic aspects of analysis and futurity. Moreover, transformational leadership also supports the development of relationships and interactions to provide valuable resources for the organization as a whole (Braga, 2002). Based on this, a transformational leader applies a defensive strategy to implement the required modifications in order to efficiently use organizational resources, decrease costs and control the resources. Furthermore, a pro-activeness strategy takes a proactive approach to search for better positions in the business environment (Venkatraman, 1989). These four tenets of strategic initiatives were predomi-

nant today.

Thus, we posit that transformational leadership is an appropriate leadership theory for inspiring followers to find better opportunities and solutions. Therefore, transformational leaders positively contribute to a pro-activeness strategy by employing inspirational motivation, setting high expectations and providing a suitable situation for followers to identify new opportunities.

One can now justify that the social media network has expanded to include remote workers. These workers may not realize it but they are now showcased online. Either they adapt and open up to be more vocal in meetings or they find themselves reclusive. Some employees have left industries due to the pandemic and executives are mindful of this. At the same time, they are cognizant of retaining talent from afar as they navigate through the pandemic to the post-pandemic. A few decades ago, Kogut and Zander (1993, p.625) defined organizations as “social communities that specialize in the creation and internal transfer of knowledge.” Well organizations now have a new stigma. They are virtual for the time being.

Thus, executives are stuck in a vacuum and they are using what scholars call “Analysis Strategy.” The C-Suite regards strategy as an ongoing process, iterative, and with no end in sight as they search for problems and their root causes, and directly or indirectly, generate better alternatives to solve them (Venkatraman, 1989). Scholars have influenced the C-Suite in several ways. For instance, Cohen and Sproull (1996) and Talke (2007), agree that analysis strategy is highly related to a firm’s capacity to generate new ideas and knowledge. Zheng (2005, p. 41) highlights the crucial role of this strategic aspect in acquiring knowledge. She also posits that knowledge acquisition “requires going deeper to the roots of problems, and that a higher degree of analysis could contribute to knowledge management.” With knowledge management being more important as the virtual mindset has a vast approach with both depth and breadth, the analysis strategy could play a critical role in accumulating organizational knowledge, including both processes of knowledge creation and acquisition using new technology. Executives noted, they never taped or recorded a session before but now it is a moot point to capture the meeting minutes and provide venue for those that could not make the meeting.

Remaining ever so proactive, executives using a pro-activeness strategy refers to finding new opportunities and proactively responding to current challenges in external environments. At first, this was somewhat easy because workers thought they would lose their jobs due to the pandemic. Over time, employees felt comfortable with technology and realized that they still have a career that is just going to be a little different now and in the future. Executives today agreed that hosting, capturing and securing knowledge actually emerges in interactions (Polanyi, 1966). Thus, executives all agreed that a pro-active strategy could provide a higher degree of knowledge through developing interactions with external environments (Venkatraman, 1989). With the pandemic in its highest stage of completion, executives realize that effective implementation of knowledge management projects requires a continuous investigation from external business environments. Hence, pro-activeness strategy is critical to improve the performance of knowledge management projects in organizations. To demonstrate the importance of knowledge utilization as another construct of the knowledge-based view, Grant (1996) concentrates

on knowledge utilization, and posits that companies are entities that apply knowledge to create competitive advantage. It is believed that a defensiveness approach enhances efficiency through cutting costs, which in turn enhances the process of knowledge reuse in organizations (Al Ammary & Fung, 2008; Wee & Chua, 2013). Executives mentioned that they worked together with Human Resources to save as many jobs as they can in such a turbulent environment and that one of the parameters that helped was that many people selected early retirement leaving a gap in attrition levels. In the post-pandemic, executives agreed that a futurity strategy could also promote the knowledge utilization process by providing a series of clear guidelines for companies to track future trends in the business environment, and accordingly conduct “what-if” analysis and allocate organizational resources. We searched for more recent research in this area and we found the empirical study by Zheng et al. (2010) which confirms these theoretical relationships within organizations. These theoretical linkages and relevant empirical studies are presented in Table 1.

Table 1: *Theoretical Linkages and Relevant Empirical Studies*

Findings	Sources
Transformational leadership is positively associated with organizational culture.	Podsakoff et al. (1990)
Organizational culture is positively associated with knowledge management.	Sveiby & Simons (2002)
Transformational leadership is negatively associated with organizational structure.	Tafvelin (2013)
Organizational structure is negatively associated with knowledge management.	Choi (2002); Zheng, Yang & McLean (2010)
Transformational leadership is positively associated with organizational strategy.	Our finding based on qualitative data
Organizational strategy is positively associated with knowledge management.	Zheng, Yang & McLean (2010)

These theoretical linkages can be illustrated in **Figure 1**.

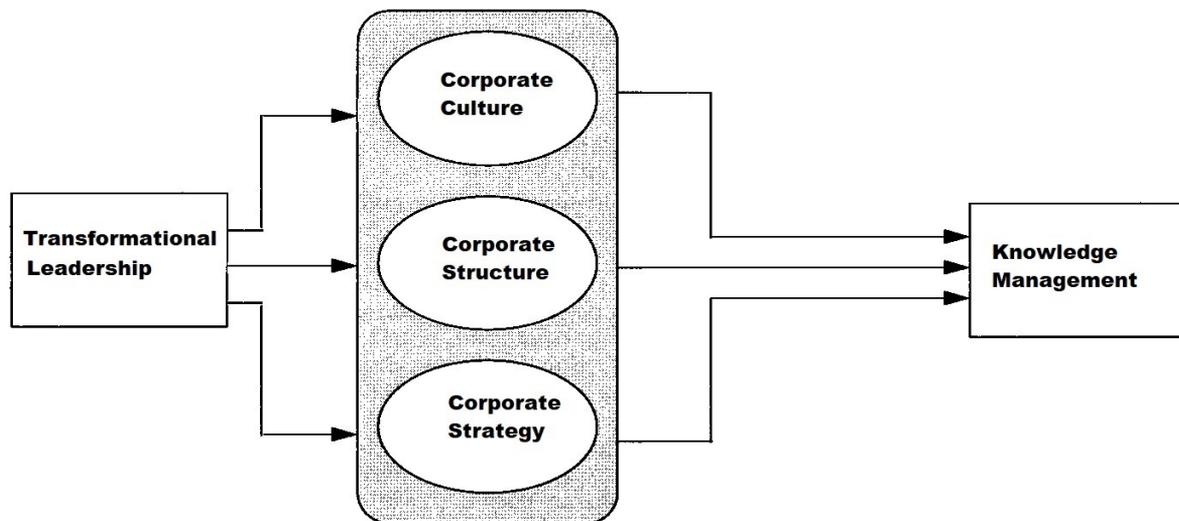


Figure 1: Propositional Relationship between Transformational Leadership, Organization's Internal Resources coupled with Knowledge Management

Conclusions

This article offers several management implications for practice. We found that executives are coming together to incorporate resilience into the operational risk management areas of the business. This effort, not fully securing the financial future but helping them sustain the impact of the pandemic and survive. In this article, we theorized, based on qualitative data gathered by executives coupled a review of prior research, that transformational leadership cultivates an effective culture, structure, and strategy, which enables knowledge management processes within organizations. We highlight the vital importance of the transformational form of leadership employed by organizational leaders in affecting knowledge management. In addition, this article reveals that transformational leadership has significant effects on an

organization's internal resources. Most executives interviewed agreed with our assumptions found in the literature that cultivating an effective culture, structure, and strategy requires the development of transformational leadership within organizations not only during the pandemic but also as they prepare for the post-pandemic. This article highlights the vital importance of transformational leadership to stimulate a culture of learning, collaboration and trust, flattened organizational structures, and improves strategies within organizations as executive address the need for a post-pandemic strategic initiative.

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