

## Virtual Leadership as a New Influential Concept

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**Abstract:** Virtual leadership is examined as a new efficient area of leadership by developing and testing four different hypotheses. The hypotheses were tested through various statistical tests including linear regression, T-test, and a single factor Analysis of Variance (ANOVA). This study's methodology is based on a questionnaire sent out to 93 respondents in various organizations in the United Arab Emirates (UAE). The study revealed that males and females perceive virtual leadership challenges in the same manner. Stress levels vary significantly between people with different levels of experience. According to this study, there is also no cultural diversity among the members of the local and global teams. The results indicate that coaching and mentoring are effective in building trust among team members.

**Keywords:** Virtual leadership, UAE, Virtual teams, E-Leadership, Digital leadership, Covid-19.

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### 1. Introduction

Virtual businesses emerged as a result of many factors, such as the development of communication technologies and the outbreak of pandemics. The spread of the Covid-19 pandemic has created new definition for leaders in both large and small companies and corporations because of the new health restrictions that have compelled people to work online to limit the propagation of the virus. Due to the outbreak of the Coronavirus pandemic 2019 (Covid-19), the working environment in most companies and organizations exclusively adopts virtual leadership (Thambusamy & Bekiroğulları, 2020).

Also, there is an interrelation between working online and the economic factor. By resorting to doing business online, companies can reduce the cost of managing their business with the result that they can be competitive in terms of their products or services. Virtual leadership can be defined in many ways. In this type of leadership, territorial or institutional scattered members who are far away from each other, but they

are connected with computer technology and work together to accomplish clearly specific objectives and goals (Bell & Kozlowski, 2002).

The mode of contact between representatives of virtual teams determines the degree of virtuality, it can be low or high. The degree of virtuality is regarded poor if participants share knowledge in real-time. There is a correlation between the pause or pause in knowledge transmission and the degree of virtuality. If there is a pause or a pause in knowledge transmission, the virtuality would be higher (Mehtab et al., 2018)

Virtual leadership doesn't mean to provide the team involved with plans and guidance, but also it means to follow up and monitor their performance according to the desired goals. Furthermore, virtual leadership can shape the team's outcomes and promote their effective performance by using multiple mediators such as encouraging virtual collaboration sharing different models, and the build-up of trustful relationships with all team members (Liao, 2017). During crisis situation, such as Covid-19, virtual leadership should emphasize on enhancing the team performance by having positive accountability, understanding the employee's needs during this stressful time, prioritizing the need, and reacting swiftly to any urgent circumstances. Leaders should change their conventional ways of managing teamwork to adapt to challenging situations by putting the team member's needs on priority and having the foresight that helps them in dissecting misinformation the objectivity of the organization. This can increase the employee's loyalty and commitment toward the benefit of the organization (Dirani et al., 2020).

Some of the major challenges facing virtual leadership are the requirement of employees to work from home which is associated with mental stress and social isolation that can affect their productivity and career progression. Leaders of the virtual work must ensure the well-being of their team members and satisfy their needs to maintain the required balance between their personal life and assigned organizational duties. This strategy of understanding the employees' mental and physical needs can improve the performance of teamwork and increase their commitment to complete the work in a proper way (Ashford et al., 2018, Petriglieri et al., 2019).

The emergence of COVID-19 pandemic forces many companies' leaders to adopt the concept of virtual workplace with all anticipated challenges associated with the virtual working environment. The reliance on technology is expanded quickly worldwide and requires establishing new plans to accommodate this revolutionized shift in the mode of working.

In the current study, we aim to assess the outcomes of applying the concept of virtual leadership in different sectors in UAE and collecting data regarding the influence of gender, age, work experience, work environment, stress level, and other work-related factors on the success and the applicability of virtual leadership. This study may help in understanding the challenges surrounding the use of virtual leadership in the UAE which may be employed in designing future studies that can find suitable solutions to improve the applicability of virtual leadership in various organizations.

## 2. Methodology

This study aims to examine the domain of virtual leadership as a new influential concept, and to investigate the most challenging problems that occur in virtual leadership. A questionnaire survey was conducted to examine the most affecting challenges that cause a lack of effectiveness in leading a virtual team. Different hypotheses were developed and tested through various statistical tests, including t-test, the ANOVA, and regression. Also, the results of this research were compared with previous literature. 93 Participants are involved in this questionnaire from different institutions across the UAE. The age of participants was between 18 and above 46. The first part of the questionnaire was about collecting data about the participants such as gender, age, and the job title. The second part includes questions about the participants' experience regarding leading a virtual team, how many projects the participants manage, and finally whether the project is local or global. The third part was mainly about the rating scale that investigates the possible challenges of leading a virtual team like communication, cultural diversity, lack of trust, lack of engagement, and more possible challenges.

## 3. Findings and Discussions

### 3.1 First Hypothesis

The first hypothesis in this research states that:

$H_0$ : There is no significant difference between males and females regarding their perceptions of virtual leadership challenges.

$H_1$ : There is a significant difference between males and females regarding their perceptions of virtual leadership challenges.

The first hypothesis is based on three identified challenges for virtual leadership, including cultural diversity, lack of collaboration among employees, and evaluation of the level of stress among team members. In this hypothesis, it is investigated whether there is a remarkable difference in terms of gender pertaining to their considerations of these three challenges for virtual leadership. The first alternative hypothesis assumes a vital difference; however, the null hypothesis assumes that there is no difference between males and females regarding their consideration of these challenges for virtual leadership. For testing this hypothesis, one-factor ANOVA has been used because this test is utilized to evaluate the main difference between two or more groups. The results are listed in table 1.

*Table 1: Males and females perception analysis using ANOVA*

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>		
Females	18	63	3.5	0.74		
	18	65	3.6	0.96		
	18	68	3.8	0.42		
Males	75	248	3.3	1.03		
	75	257	3.4	1.20		
	75	264	3.5	1.31		
<hr/>						
<i>Source of Variation</i>	<i>SS</i>	<i>Df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit.</i>
Between Groups	4.373763	5	0.874753	0.80433	0.547376	2.247075
Within Groups	296.9022	273	1.087554			
Total	301.276	278				

*Source:* Author's findings

The results reflect neither visible nor clear difference in males and females average values. Similarly, the insignificance of this difference is also highlighted through table 1. F-value is smaller than F-critical value; thus, the null hypothesis cannot be rejected. Therefore, it can be concluded that there is no significant difference between males and females regarding their perceptions of virtual leadership challenges. In other words, all the three challenges, which are mentioned above, are common in the males and females perceptions regarding the virtual leadership.

These findings are not consistent with previous studies. For instance, there are notable differences in perceptions of virtual leadership between males and females, according to Studhmacher et al., 2007. However, this study has not found any significant difference. It might be due to the small size of the sample which is important regarding the importance of the study.

### 3.2 The Second Hypothesis

The second hypothesis in this work states that:

$H_0$ : There is no significant mean difference between the stress levels of people with different experience levels.

$H_2$ : There is a significant mean difference between the stress levels of people with different experience levels.

The second hypothesis is tested through ANOVA one factor because it is used for comparing the mean values of more than two groups. Table 2 shows the summary of the mean and variance values which show the clear difference in the average values as the minimum mean value is 2.962 for more than 7 years range; however, 3.957 is the maximum average value for less than 1 year of range.

*Table 2: Males and females perception analysis using ANOVA*

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>		
Less than a year	23	91	3.957	0.498		
1 to 3 years	15	60	4	0.571		
3 to 5 years	10	36	3.6	1.6		
5 to 7 years	19	68	3.579	1.146		
More than 7 years	26	77	2.962	1.398		
<i>Source of Variation</i>	<i>SS</i>	<i>Df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit.</i>
Between Groups	15.84606	4	3.961515	3.919221	0.005637	2.475277
Within Groups	88.94964	88	1.010791			
Total	104.7957	92				

*Source:* Author's findings

Table 2 shows that F-value is higher than the F-critical value; thus, it proves that there is a significant difference between the stress levels of people with different experience levels. Thus, the second hypothesis is proved.

These results are consistent with previous findings. For instance, Hassell et al., (2011) studied different experience levels across males and females and their relationship with stress levels and problems occurring in the workplace. They collected data from 87 police officers and concluded that the stress level differs across males and females. Also, it was found that the stress level changes with the changing experience level. However, Miller et al., (1989) have noted that employees bear stress up to a certain level and after that level, they often face serious situations, especially at the initial stage of working experience. With the passage of time, stress level management increases.

### 3.3 The Third Hypothesis

The third hypothesis in this work states that:

$H_0$ : There is no significant difference between the assumption of local and global locations identifying cultural diversity as a challenge.

H<sub>3</sub>: There is a significant difference between the assumption of local and global locations identifying cultural diversity as a challenge.

In order to test the third hypothesis, the t-test is used because we are comparing two groups' mean values. Benhamou & Peltier, (2007) mentioned that cultural diversity is measured on the basis of three considerations, including variety, balance, and disparity as it is proposed by. Amongst these dimensions, variety can be defined in the sense of a number of categories of quantity or quality. While on the other hand, balance is termed in the sense of the pattern of distribution of quantity across relevant categories. And disparity can be referred to the nature of categorization in addition to evaluating the differences among all categories. As these dimensions increase, cultural diversity increases as well for instance, increasing the variety of categories to assess culture increases cultural diversity. Similarly, in the case of balance and disparity – as these dimensions increase, lead to increase cultural diversity. In this research paper, the assumption of local and global responses regarding cultural diversity as a challenge has been analyzed. Table 3 reveals that the t-value is smaller than the t-critical; therefore, the null hypothesis cannot be rejected. Thus, it is concluded that there is no significant difference in local and global respondents' assumption pertaining to cultural diversity as a challenge. Therefore, the third alternative hypothesis is rejected.

***Table 3:t-Test: Two-Sample Assuming Equal Variances***

	<i>Cultural Diversity (Global)</i>	<i>Cultural Diversity (Local)</i>
Mean	3.567	3.238
Variance	1.082	0.894
Observations	30	63
Pooled Variance	0.954	
Hypothesized Mean Difference	0	
df	91	
t Stat	1.517	
P(T<=t) one-tail	0.066	
t Critical one-tail	1.662	
P(T<=t) two-tail	0.133	
t Critical two-tail	1.986	

*Source:* Author's findings

However, these results are not in harmony with previous literature. For instance, Davidoff et al., (2008) have compared the cultural values at remote areas of Namibia with global cultural perspective. They found a significant difference with respect to cultural norms and behavioral patterns between local and global areas – as local areas are more oriented towards their cultural values compared to global areas. They differentiated the assumptions of local areas from global ones, and they conclude that global areas consider cultural diversity more challenging. Similarly, Chau et al., (2002) have highlighted an important difference between the assumption of online consumers regarding cultural diversity as a challenge. Cultural differences

appeared with respect to their preferences of purchasing behaviors and their communication diversity. As it is mentioned above, due to the sample small size, significance can be negatively affected. Therefore, current study has different findings as compared to previous studies.

### 3.4 The Fourth Hypothesis

The fourth hypothesis in this paper states that:

$H_0$ : The efficacy of coaching and mentoring to manage team members has no momentous impact on the efficiency of building trust among team members as an effective tool for virtual leadership.

$H_4$ : The efficacy of Coaching and mentoring to manage team members has a momentous impact on the efficiency of building trust among team members as an effective tool for virtual leadership. Finally, the fourth hypothesis is tested through the linear regression equation because in this hypothesis the impact of independent variable on dependent variable is evaluated. In table 4, R-square value shows that 41.81% variance in effectiveness of building trust among team members for virtual leadership explained by the efficacy of coaching and mentoring to manage team members.

*Table 4: Model fitness analysis*

<i>Regression Statistics</i>					
Multiple R		0.647			
R Square		0.418			
Adjusted R Square		0.412			
Standard Error		0.889			
Observations		93			
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	51.71696252	51.71696	65.38087384	2.54298E-12
Residual	91	71.98196221	0.791011		
Total	92	123.6989247			

*Source:* Author's findings

Table 4 displays the significance of the model fitness and the significance of the variance is explained as F-value which is greater than F-critical. According to table 5, the efficacy of coaching and mentoring to manage team members has a 67.75% positive impact on the effectiveness of building trust among team members. This relationship is illustrated with  $p < 0.05$  or 95% confidence interval. It means that increasing coaching and mentoring increases the trust among team members.

This relationship has proved the fourth hypothesis. Gratton & Erickson, (2007) have proposed eight different ways to build collaborative teams. Amongst these ways, they proposed that effectiveness of coaching and mentoring help leadership to enhance the efficacy of trust among team members.

Similarly, Wotruba, (2016) found a significant relationship amid importance, effectiveness of coaching and mentoring, and the effectiveness of trust among team members. The author also noted that leadership prefers to build a collaborative team with a high level of trust in order to smoothly run operations and increase productivity level. Gill, (2008) found that job training and coaching help building a strong relationship between employees and managers, especially when the relationship is based on trust. Both parties play their important role to fulfill their duties; thus, a strong relationship of trust appears. Apart from this, Behery & Al-Nasser, (2016) have found that coaching and leadership styles have direct association between increasing commitment and trust level of employees.

***Table 5: The impact on the effectiveness of building trust among team members analysis***

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	1.300725329	0.320774529	4.054952	0.000105636	0.663546134	1.937904524
Coaching and mentoring	0.677514793	0.083790238	8.085844	2.54298E-12	0.511075779	0.843953807

Dependent Variable: Building Trust Among Team Members.

*Source:* Author's findings

#### **4. Conclusion**

This research has tested four different hypotheses regarding virtual leadership through t-test, single-factor ANOVA, and linear regression as statistical tools. The results show that there is no significant difference amid males and females regarding their assumptions of three different challenges for virtual leadership. Besides, the results show that there is a significant difference between the stress levels of people with different experience levels. Also, this study has reported that there is no cultural diversity amid local and global team members. However, the results show that the efficacy of coaching and mentoring have significant positive influence on the effectiveness of building trust among team members for virtual leadership.

As a conclusion, virtual leaders need to have the essential skills that suit the virtual training supervising, and monitoring the team performance and they should not apply the traditional leadership concept while using the virtual mode of leadership. Besides, the coordination difficulties related to virtual work contexts must be handled in professional way considering the employees needs and the diversity of the work environment as priority factors.

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