Influences of Leadership Behavior on Employee Engagement within Virtual-working Environment: A Case study of Technology Enterprises in Vietnam

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Abstract: Associate with the development of information technology and the challenge from economic crisis, many employees, who are currently working in technology field, want to choose virtual working jobs as the best alternative to traditional jobs. The purpose of this article aims to find out the way how to improve employee engagement within virtual working environment in technology industry. To conduct the study, researcher based on self-determination theory as the theoretical foundation and used survey instruments from permissions of Leader Behavior Description Questionnaire and Development Dimensions International’s E3® Engagement Instrument. The results of the study point out a strong and positive correlation existed between both consideration and initiating structure leadership behavior and employee engagement among virtual working employees.

1. Introduction
When the world moves to digital economy, technology becomes a key of foundation and development to competitiveness and survival of free market. Vietnam is not the exception; many technology enterprises (TEs) in Vietnam are facing the challenge for management to build strategically flexible organizations in response to high technological pressures and increasingly competitive marketplaces. The development of information and communication technologies has laid the foundation for new organizational forms and structures such as virtual working enterprises, virtual working organizations, virtual working corporations, virtual working workforces, and virtual working management. Such innovative organizational forms are proving to be extremely effective and popular in sustaining the increasingly competitive, technological, and workforce demands of Vietnam.

In addition, the continued advancement of technology and the positive outcomes associated with the virtual working environment could result in more organizations offering virtual working as an option. A lack of research exists regarding leadership behavior in the virtual working environment (Madlock, 2012); therefore, it is important to understand the leadership behavior necessary to improve employee engagement in the virtual working environment.

The purpose of this quantitative correlational study was to determine if a relationship exists between leadership behavior, as perceived by employees, and employee engagement within the virtual working environment. The research method used for this study was the quantitative correlational method. Employee engagement, which can produce greater work effort and increased productivity, can result in greater organizational success; therefore, it was beneficial to identify the leadership behavior that affected employee engagement positively. Virtual working-workforce is forecast to expand vigorously in Vietnam, and not much research existed regarding leadership behavior in the virtual working environment (Madlock, 2012).

The findings of this study resulted in an addition to the body of knowledge by identifying that a correlation exists between task-oriented and relational-oriented leadership behavior and employee engagement within the virtual working environment. The research findings also resulted in beneficial organizational information for hiring and developing effective leaders for their virtual working employees. Additionally, the determination of a correlation between leadership behavior, as perceived by employees, and employee engagement within the virtual working environment could serve as a foundation for future research regarding this relationship within the virtual working environment.

2. Literature Review
2.1. Review of Prior Studies
2.1.1. Leader Behavior
Researchers at the Ohio State University studied leader behavior by focusing on task-oriented and
relational-oriented behavior, as well (Hobson et al., 2010; Sashkin & Sashkin, 2003). These researchers based their study on Stogdill’s assertions that consideration leadership behavior is more important than leadership traits (Bass, 1990). They compiled a list of leadership behaviors from the observed behavior of individuals leading a group. The Leader Behavior Description Questionnaire (LBDQ), which enabled the measurement of initiating structure (task-oriented) and consideration (relational-oriented) behavior, was a result of the research conducted at The Ohio State University (Halpin, 1957).

Yukl (2012) reviewed leadership literature to identify what scholars have learned about effective leader behavior and to develop comprehensive behavior taxonomy. Table 1 contains the hierarchical taxonomy that describes the leader behavior used to influence performance effectively.

<table>
<thead>
<tr>
<th>Task-Oriented</th>
<th>Relational-Oriented</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clarifying</td>
<td>Supporting</td>
</tr>
<tr>
<td>Planning</td>
<td>Developing</td>
</tr>
<tr>
<td>Monitoring Operations</td>
<td>Recognizing</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>Empowering</td>
</tr>
</tbody>
</table>

Table 1. The Hierarchical Taxonomy of Leadership Behaviors

According to Hobson et al. (2010), leader behavior researcher has relied on the two-factor model, using the task-oriented and relational-oriented for identifying effective leaders. Leader behavior could be task-oriented, which serves to clarify the purpose and process of task accomplishment, and relational-oriented, which serves to enhance the quality of employee relations to establish buy-in and loyalty for the purposes of goal attainment (Mujtaba et al., 2010). However, these behaviors are not dependent or tied to one another in any way. Leaders are able to exhibit both task-oriented behavior and relational-oriented behavior at varying degrees (Littrell, 2013). Figure 1 contains the four categories of the combined initiating structure and consideration leader behavior.

According to Hersey (2009), effective leaders must employ either task- or relational- oriented behavior depending on the employees’ maturity, based on their ability and willingness to perform the task. Figure 2 contains the prescribed leader behavior based on employee maturity level. Chamberlin (2013) identified this leadership model as a pull system, in which the leader provides the employee with the exact leader behavior the situation dictates.

<table>
<thead>
<tr>
<th>Employee Maturity Level</th>
<th>Leader Behavior</th>
<th>Prescribed Leader Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unable &amp; Unwilling</td>
<td>High</td>
<td>Telling</td>
</tr>
<tr>
<td>Unable &amp; Willing</td>
<td>High</td>
<td>Selling</td>
</tr>
<tr>
<td>Able &amp; Unwilling</td>
<td>Low</td>
<td>Participating</td>
</tr>
<tr>
<td>Able &amp; Willing</td>
<td>Low</td>
<td>Delegating</td>
</tr>
</tbody>
</table>


Figure 2. The Hersey-Blanchard Situational Leadership

2.1.2. Employee Engagement

Employee engagement refers to being associated physically, cognitively, and emotionally with one’s work and coworkers, revealing one’s identity, thoughts, and feelings with one’s work role (Handa & Gulati, 2014; Kahn, 1990). Simpson (2009) wrote that four elements are required for employee engagement to exist in the work environment: (a) clear expectations and basic resources and equipment, (b) a sense of organizational contribution, (c) a sense of organizational belonging, and (d) a sense that there is opportunity for personal progress and growth.

Engagement theorists have focused consistently on employee performance as it has evolved over time (Handa & Gulati, 2014). Individual experiences and organizational factors influence employee engagement (Chaudhary et al., 2013; Rich et al., 2010). Engaged employees provide greater effort, which results in greater productivity; therefore, increasing employee engagement can result in greater organizational success (Bakker et al., 2008; Dicke et al., 2007; James et al., 2011). Blessing White (2013) stated that aligning employee goals and aspirations with organizational strategies is the best approach for attaining the necessary employee engagement for organization success.

2.1.3. Virtual Working Environment

The introduction of virtual working occurred as a result of the oil crisis in the early 1990s (Pyoria, 2011). Although the initial motive for implementing virtual working was environmental considerations, virtual working has become increasingly popular because it provides organizations with reduced overhead and maintenance costs, increased productivity, and greater access to global markets (Madlock, 2012). The work environment is evolving due to the advancement of technology and the expansion of the global economy, making the virtual working environment a viable option to the
traditional work environment (Madlock, 2012). According to Noonan and Glass (2012), virtual working positively affects productivity, retention, and absenteeism rates. Additionally, reduced stress and absences due to illness, greater workplace control, and increased workplace autonomy are positive outcomes associated with virtual working (Robertson & Vink, 2012). Furthermore, virtual working provides employees with increased flexibility and work-life balance, which results in increased productivity (Bloom, Liang, Roberts, & Ying, 2013).

2.1.4. Technology and Structure Considerations

Employees who are unable to communicate, collaborate, and access the necessary resources for completing their work are less likely to be engaged; therefore, organizations should address the work environment needs. According to Hoon Song et al. (2013), establishing expectations, standards, strong communication channels, and proper leadership influences employee engagement. Poor communication and separation from coworkers are factors that lead to decreased virtual working employees engagement (Sardeshmukh et al., 2012). However, virtual working employees could overcome the communication issues and any isolation issues with technology. Reliable technology, the level of service, and technical support are critical factors for teleworker success. The use of electronic communication technology such as telephone, email, instant messaging, and video conferencing could enrich employee interaction and bridge the communication gap that results from separation (Golden & Raghuram, 2010). As employees become proficient using electronic communication technology, the enhancement of the information exchange occurs with the aid of cues that facilitate the interpretation of events, ideas, and behaviors (Golden & Raghuram, 2010).

2.1.5. Employee Considerations

Wang and Haggerty (2011) noted that the alignment of virtual working employees with necessary technology and organizational structure is necessary for the optimization of their performance. However, establishing and maintaining virtual working technology and structure is only part of the plan for organizational success with regard to the virtual working environment. Disengaged employees could have a poor attitude and a negative influence on the employees that work with and around them, which poses a challenge to their leaders (Hoon Song et al., 2012). Therefore, it is essential to address disengagement, its effect on employees, and engagement improvement strategies within the organization.

Virtual working employees are more likely to be professionals or managers and have a college degree (Noonan & Glass, 2012, p. 40); however, there is no significance with regard to age. There is a difference in the workplace values with regard to age. According to Schullery (2013), younger generations value autonomy and leisure more than they value challenging and interesting work. Employees in a virtual working environment are significantly more motivated for work related reason than for life balance reasons. Women choose to virtual working for achieving greater work outcomes more than men (Shockley & Allen, 2012), and women are more likely to be motivated to virtual working than men (Madsen, 2011). Understanding how employee behavior relates to organizational outcomes within the virtual working environment will facilitate the building of a capable, engaged, and productive virtual working workforce.

2.2. Conceptual Framework

Engaged employees provide greater effort, which can result in greater productivity; therefore, increasing employee engagement could result in greater organizational success (Bakker, Schaufeli, Leiter, & Taris, 2008; Dicke, Holwerda, & Kontakos, 2007; James, McKechnie, & Swanberg, 2011). With this study, the survey of virtual working employees occurred in order to determine if a correlation exists between leadership behavior, as perceived by employees, and employee engagement within the virtual working environment. The virtual working employee was the focus of this study because the virtual working environment is forecast to expand dynamically (Brin, 2013) and yet the limited information was known regarding this work arrangement (Madlock, 2012). For the purposes of this study, the predictor variables were a consideration and initiating structure leadership behavior, and the criterion variable was employee engagement.

The following research questions and their corresponding hypotheses and the conceptual framework guided this study:

- **H1a:** There is a correlation between Consideration Leadership Behavior (as perceived by the employee) and Employee Engagement among virtual working workforces.
- **H1b:** There is a correlation between Initiating Structure Leadership Behavior (as perceived by the employee) and Employee Engagement among virtual working workforces.
3. Research Methodology

3.1. Research Instruments

The employment of the Leader Behavior Description Questionnaire (LBDQ) instrument enabled the measurement of the predictor variables consideration and initiating structure leadership behavior (Halpin, 1957). The employment of the Development Dimensions International’s E3® Engagement Instrument enabled the measurement of the criterion variable employee engagement (Wellins, Berenthal, & Phelps, 2005). Additionally, the employment of a demographic questionnaire enabled the measurement of the control variables job title, age, gender, marital status, the level of education, and length of current employment.

3.1.1. Leader Behavior Description Questionnaire (LBDQ)

Hemphill and Coons of The Ohio State University developed the LBDQ instrument, and Halpin revised the instrument in 1957. The 1957 LBDQ instrument consists of 40 items that facilitate the measurement of the participants’ perception of leadership behavior, each item describing a specific way a leader may behave. The 15 consideration leader behavior items and the 15 initiating structure leader behavior items resulted in responses for scoring the corresponding behavior. Ten unscored items remained in the questionnaire to maintain the standardization of the instrument (Halpin, 1957). Respondents, using a 5-point Likert scale, indicated the frequency they perceive the specific leader behavior, whether it was always, often, occasionally, seldom, or never.

The scoring instructions provided in the Manual for the Leadership Behavior Description Questionnaire enabled the scoring of the respondent data regarding initiating structure and consideration behavior. According to Halpin (1957), the reliability score for Initiating Structure was 0.83, and the reliability score for Consideration was 0.92.

3.1.2. The E3® Engagement Instrument

Developmental Dimensions International, a talent management consultancy, developed the E3® Engagement instrument. The instrument consists of 20 items and facilitates the measurement of the respondents’ perception of personal meaning and support from their colleagues and organization. 17 items enabled the scoring of employee engagement and the last three items provided insight into employee satisfaction and loyalty. Respondents, using a 5-point Likert scale, indicated their degree of agreement with the statements, whether it was strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree.

3.1.3. Demographic Questionnaire

The demographic questionnaire facilitated the measurement of the following control variables such as age, gender, level of education, and length of employment.

3.2. Data Collection Procedure

In agreement with the data collection procedures, only virtual working employees who were currently working full-time from their home received an invitation to complete the survey. The distribution of research surveys occurred over a period of one week with 2,210 virtual working employees having received the survey and 311 (N = 311) having completed the survey. The collection of the required data occurred using an anonymous self-administered internet-based survey administered through the Google Drive survey tool.

3.3. Data Analysis Procedure

The self-administered internet-based survey distributed by Google Drive yielded the required data for testing the research hypotheses. The export of the collected data to a statistics program enabled analysis. The participant responses received numerical values to facilitate statistical analysis. The descriptive statistics used to analyze the respondent demographic information included frequency counts and percentages. The descriptive statistics used to analyze the research variables included means, standard deviation, minimum, and maximum. The inferential statistics used to analyze the variables included the Multiple Regression Analysis, enabling the examination of the criterion variable from the combination of predictor variables and control variables, and the Pearson Correlation Coefficient, enabling the examination of whether a correlation exists between the variables. The inferential statistic used to analyze the variables included the Multiple Regression Analysis, enabling the examination of whether a correlation exists between the variables. The inferential statistic used to analyze the consideration, initiating structure, and employee engagement scales for internal reliability was Cronbach’s Alpha. The results (α = .81, α = .83, α = .85) indicated that the consideration, initiating structure, and employee engagement scales were internally reliable, respectively. The inferential statistic used to analyze these scales for construct validity was Pearson Correlation Coefficient. The results indicated that 14 consideration items, 15
initiating structure items, and 17 employee engagement items had a significant correlation to the 0.01 level, meaning the scales all had construct validity.

4. Analysis and Findings Discussion

4.1. Reliability and Validity Analysis

The Cronbach’s Alpha statistic facilitated the determination that each scale had internal reliability. The results (α = .81, α = .83) indicated that the consideration and initiating structure scales were internally reliable, respectively. Whereas, the result (α = .85) indicated that the LBDQ instrument was internally reliable. Additionally, The result (α = .88) indicated that the employee engagement scale was internally reliable (see table 2).

Table 2. Reliability of Leader Behavior Description Questionnaire and E3® Engagement Instruments

<table>
<thead>
<tr>
<th>Scale</th>
<th>Cronbach’s Alpha</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consideration</td>
<td>.81</td>
<td>15</td>
</tr>
<tr>
<td>Initiating Structure</td>
<td>.83</td>
<td>15</td>
</tr>
<tr>
<td>LBDQ (Con/InSt combined)</td>
<td>.85</td>
<td>30</td>
</tr>
<tr>
<td>Employee Engagement</td>
<td>.88</td>
<td>17</td>
</tr>
</tbody>
</table>

4.2. The Relationship among Consideration Leadership Behavior, Initiating Structure Leadership Behavior, and Employee Engagement

The predictor variables for this study were Consideration Leadership Behavior and Initiating Structure Leadership Behavior, and the criterion variable was Employee Engagement. The Multiple Regression Analysis enabled the determination of whether the control variables accounted for any variation in the relationship between leader behavior and employee engagement. Table 3 contains the regression analysis of the combined control variables as they relate to employee engagement. The p-Value indicated that length of employment was statistically significant. Age, gender, and level of education were not statistically significant.

Table 3. Control Variable Regression Analysis by Employee Engagement

<table>
<thead>
<tr>
<th>Variables</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t Statistic</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consideration</td>
<td>.811</td>
<td>.061</td>
<td>.413</td>
<td>6.113</td>
</tr>
<tr>
<td>Initiating Structure</td>
<td>.413</td>
<td>.031</td>
<td>.513</td>
<td>2.135</td>
</tr>
</tbody>
</table>

Table 4. Predictor Variable Regression Analysis by Employee Engagement

Additionally, Table 4 contains the regression analysis of the combined predictor variables as they relate to employee engagement. The p-Value indicated that both consideration and initiating structure were statistically significant.

Table 5 contains the model summary by employee engagement. The R-Square statistic for the control and the predictor variables combined was .701, indicating that the model accounted for approximately 70.1% of the variation in employee engagement. The R-Square statistic for the predictor variables was .691 or 69.1%, so the six control variables only accounted for an additional 3% improvement, with the length of employment accounting for 1.8% of that improvement.

Table 5. A Model Summary by Employee Engagement

<table>
<thead>
<tr>
<th>Variables</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consideration, Initiating Structure, Job Title, Marital Status, Age, Gender, Education, Length of Employment</td>
<td>.701</td>
<td>.625</td>
<td>6.824</td>
</tr>
<tr>
<td>Consideration, Initiating Structure</td>
<td>.691</td>
<td>.625</td>
<td>6.942</td>
</tr>
</tbody>
</table>

4.3. Analysis of the Relationship between Consideration Leadership Behavior and Employee Engagement

According to the analysis results, the Multiple Regression Analysis facilitated the determination that the predictor variables had a significant relationship with the criterion variable. The regression model accounted for 69% of the total variations of employee engagement. To conduct the analysis, the first hypothesis was tested.

With respect to the relationship between consideration and employee engagement, the Multiple Regression Analysis results in Table 6
indicated that the consideration leadership behavior had a statistically significant effect on employee engagement, with a p-Value of .000. The Beta for this relationship was .803. The positive Beta meant that for each one-unit increase in consideration behavior the expected value of employee engagement would increase by a standard deviation of .803.

<table>
<thead>
<tr>
<th>Variable</th>
<th>R Square</th>
<th>Unstandardized Coefficient</th>
<th>Standardized Coefficient</th>
<th>Beta</th>
<th>t-Statistic</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consideration</td>
<td>.621</td>
<td>.922</td>
<td>.072</td>
<td>.803</td>
<td>11.1</td>
<td>.000*</td>
</tr>
<tr>
<td>(Constant)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>14.435</td>
<td>3.131</td>
<td>4.12</td>
<td>1</td>
<td>1</td>
<td>.000*</td>
</tr>
</tbody>
</table>

* Statistical significance at the .05 level (p < .05)

Table 6. Relationship of perceived Consideration Leadership Behavior to Employee Engagement

Table 7 contains the Pearson Correlation Coefficient results for consideration leadership behavior and employee engagement. The results (r = .701) indicated a strong, positive correlation between perceived consideration behavior and employee engagement. Additionally, with the statistical significance at the .05 level, the results (p = .000) indicated that the correlation was significant at the 0.01 level. Therefore, H1a was accepted.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Consideration</th>
<th>Employee Engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consideration</td>
<td>Pearson Correlation</td>
<td>.701**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>311</td>
</tr>
<tr>
<td>Employee Engagement</td>
<td>Pearson Correlation</td>
<td>.701**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>311</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed).

Table 7. Correlation between Consideration Leadership Behavior and Employee Engagement

4.4. Analysis of the Relationship between Initiating Structure Leadership Behavior and Employee Engagement

To conduct the analysis, the second hypothesis was tested. With respect to the relationship between initiating structure and employee engagement, the Multiple Regression Analysis results in table 8 indicated that the initiating structure leadership behavior had a statistically significant effect on employee engagement, with a p-Value of .000. The Beta for this relationship was .708. The positive Beta meant that for each one-unit increase in initiating structure behavior the expected value of employee engagement would increase by a standard deviation of .708.

<table>
<thead>
<tr>
<th>Variable</th>
<th>R Square</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t-Statistic</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiating</td>
<td>.511</td>
<td>.783</td>
<td>.091</td>
<td>.708</td>
<td>9.113</td>
</tr>
<tr>
<td>Structure</td>
<td>(Constant)</td>
<td>21.133</td>
<td>4.243</td>
<td>6.131</td>
<td>.000*</td>
</tr>
</tbody>
</table>

* Statistical significance at the .05 level (p < .05)

Table 8. Relationship of perceived Initiating Structure Leadership Behavior to Employee Engagement

Table 9 contains the Pearson Correlation Coefficient results for initiating structure leadership behavior and employee engagement. The results (r = .708) indicated a strong, positive correlation between perceived initiating structure behavior and employee engagement. Additionally, with the statistical significance at the .05 level, the results (p-Value = .000) indicated that the correlation was significant at the 0.01 level. Therefore, H2b was accepted.

<table>
<thead>
<tr>
<th>Initiating Structure</th>
<th>Pearson Correlation</th>
<th>Sig. (2-tailed)</th>
<th>N</th>
<th>.708**</th>
<th>311</th>
<th>311</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee Engagement</td>
<td>Pearson Correlation</td>
<td>Sig. (2-tailed)</td>
<td>N</td>
<td>.000</td>
<td>311</td>
<td>311</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed).

Table 9. Correlation between Initiating Structure Leadership Behavior and Employee Engagement

5. Summary, Conclusion, and Recommendations for Future Research

5.1. Summary of Findings

With respect to the first research question and corresponding hypothesis, the researcher tested to determine whether a correlation exists between consideration leader behavior, as perceived by virtual working employees, and their engagement. The results of the Pearson Correlation Coefficient indicated that the data were consistent with the hypothesis by determining a correlation existed between the variables. Specifically, the results indicated a strong, positive relationship (r = .803; p = .000) between consideration behavior and employee engagement at a significance level of 0.01. Cohen’s
(1988) guidelines served as the basis for the examination of the strength of all correlational relationships in this study.

With respect to the second research question and corresponding hypothesis, the researcher tested to determine whether a correlation existed between initiating structure leader behavior, as perceived by virtual working employees, and their engagement. The results of the Pearson Correlation Coefficient indicated that the data were consistent with the hypothesis by determining a correlation existed between the variables. Specifically, the results indicated a strong, positive relationship ($r = .708; p = 0.000$) between initiating structure behavior and employee engagement at a significance level of 0.01.

## 5.2. Conclusion

Consideration leader behavior emphasizes two-way communication and encouragement for the purpose of commitment to work, performance enhancement, and increased quality of employee relations (Yukl, 2012). Sardeshmukh et al. (2012) determined that clear communication between leaders and their virtual working employees is critical for the transfer of information. However, the remote proximity of the virtual working employee could hamper effective two-way communication. Additionally, Brunelle (2013) determined that a negative correlation existed between physical distance and relational quality between supervisors and virtual working employees. With the knowledge that a positive correlation exists between consideration leader behavior and employee engagement, leaders of virtual working employees should incorporate consideration behavior when supervising employees and compensate for the physical distance of virtual working workforces when attempting to improve employee engagement. With the knowledge that a positive correlation exists between consideration leader behavior and employee engagement, leaders of virtual working employees should incorporate initiating structure behavior when supervising employees to ensure awareness regarding performance standards and expectations when attempting to improve employee engagement among virtual working workforces.

## 5.3. Recommendations for Future Research

The determination that a strong, positive correlation existed between both consideration and initiating structure leader behavior and employee engagement serves as a foundation for experimental research; therefore, future research could occur to determine whether leader behavior is a cause of employee engagement among virtual working workforces. Leader behavior other than consideration and initiating structure could affect employee engagement in the virtual working environment; therefore, the examination of other leader behaviors when determining the existence of a relationship between leader behavior and employee engagement among virtual working workforces could be beneficial.

The regression analysis of the control variable revealed that length of employment was statistically significant, making it possible that the employee’s length of employment affects their employee engagement in the virtual working environment. The recommendation for future research includes a longitudinal study to determine if the length of employment positively affects employee engagement among virtual working workforces. With the expected expansion of virtual working, the results of this research may be beneficial for making virtual working-staffing decisions. The employee’s work industry may affect employee engagement in the virtual working environment; therefore, future research efforts could consider the employee’s work industry when determining the effectiveness of leader behavior for improving employee engagement among virtual working workforces.

## 6. Acknowledgements

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## 7. References


