Examining the Relationship between Emotional Intelligence and Work Productivity during COVID-19: Multiple Regression Analysis

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Abstract

The main objective of this study was to examine the relationship between emotional intelligence factors and work productivity during COVID-19. A total of 307 participants were surveyed from five large organizations in the technology industry and higher education institutions over six days. The emotional intelligence factors considered in the study were self-perception, interpersonal skills, and stress management. Data was collected from each employee on the three variables and measured against their work productivity rating, which was provided by their immediate supervisor. The multiple regression analysis was conducted to examine the possible relationships, and it was found that the emotional intelligence factors of self-perception, interpersonal skills, and stress management were significantly related to work productivity during COVID-19. Discussion of the findings followed the result of the study, including its limitations. The model obtained from the multiple regression analysis was consistent with previous research and supports the notion that factors of emotional intelligence are essential to workplace productivity.
even in challenging situations.

**Keywords:** self-perception, interpersonal skills, stress management, work productivity

**Introduction**

Several past and recent studies have demonstrated a relationship between emotional intelligence and work productivity (Hakkak, Nazarpoori, Mousavi & Ghodsi, 2015; Masaldzhiyska, 2019; Padios, 2017). These studies conclude that as emotional intelligence increases, a worker will improve both effectiveness and efficiency within the workplace. The positive relationship remains intact regardless of the industry. However, most studies on emotional intelligence abstractly obtain information (Granirer, 2017), never having the opportunity to test the theory of workplace productivity and emotional intelligence during a crisis such as COVID-19.

Despite the information that COVID-19 could be a global pandemic in early January, and that organizations around the world could be affected, companies were not prepared for the sudden closures that could severely affect their output. By the middle of March, most companies had decided to close their doors. Unfortunately, this closure meant catastrophic losses for many companies and, in some cases, permanent closures. Those that survive face an uphill task to maintain normalcy during abnormal times. For corporations, this normalcy meant finding ways to slow the reduction of productivity.

According to studies conducted on emotional intelligence, it is a better judge of a person’s success than other tests that exist (Yanfeng, Zhuo, & Liqi, 2019). With COVID-19 having the potential to create significant chaos, this would be a perfect time to test the effectiveness of emotional intelligence. The self-perception, stress management, and interpersonal skills of employees would all be tested as they attempt to work closely with each other while being further apart. Employees being forced to work from home created barriers that some had never faced and presented challenges that would require strong emotional intelligence skills to maintain or improve work productivity.
Purpose of the study

The purpose of this study was to examine the relationship between emotional intelligence variables and work productivity during COVID-19. The study is based on data collected through surveys from March 20 to May 05 from employees at five different companies who transitioned to working at home. The data was collected from employees who were working at firms in the technology and higher education industries. Specifically, the current research seeks to answer the following three major questions:

- What role has stress management played in work productivity during COVID-19?
- How strong are interpersonal skills at predicting work productivity during COVID-19?
- Has self-expression been altered during COVID-19, and has it affected work productivity?

Literature Review and Hypothesis Development

Self-Perception and Work Productivity

The correlation between self-perception and work productivity is well documented. Researchers and practitioners have concluded that as self-perception increases, the output of an individual also tends to go in that direction (Hassan & Hatmaker, 2015; Mervis, Lysaker, Fiszdon, Bell, Chue, Pauls, Bisoglio, & Choi, 2016; Quinn, 2017). For instance, a study conducted by Peper, Harvey, I-Mei Lin, and Duvvuri (2014) on work productivity in the workplace, concluded that self-perception is one of the leading causes of employee happiness, which leads to higher productivity. Self-perception is universally considered one of the dimensions of emotional intelligence. When an employee believes his/her work is valued, that employee is more likely to work towards the goal diligently. Research has shown that self-perception in the workforce can be influenced by a person's surroundings and can be changed either positively or negatively with slight alterations. For example, in a study conducted by Randles and Ballantyne (2018), in which surveyed 298 music teachers from the United States and Australia, they discovered that those with better support among peers and advanced music equipment had a higher level of self-perception and was more productive. Self-perception is driven by understanding what attitudes drive certain behaviors in an individual. These attitudes are essential to an individual bringing a positive or negative attitude to the workplace (Quinn, 2017). One aspect of self-perception is believing that
an employee has the skills necessary to accomplish the task. When employees are confident, they can complete the job, which contributes to a high level of self-perception. Sometimes employees are confused about their feelings and simply rely on their behavior. For instance, a recent study by Calero, Barreyro, and Injoque-Ricle (2018), on the impact of self-perception on success, surveyed 137 adolescents and the results showed that 74% provided different answers to similar questions depending on whether the focus was on their feelings or behaviors. When this occurs, employees start to believe things that may not be true, and it becomes their new norm (Timler, McIntyre, Rose, & Hands, 2019). This new norm can affect work productivity and cause them to see the workplace through frames that may not correct (Yanhan Zhu, 2016).

**Hypothesis 1:** Self-perception has a positive influence on work productivity

**Interpersonal skills and Work Productivity**

Interpersonal skills have always been a predictor for work productivity (Zoghbi-Manrique-de-Lara, & Sharifiatashgah, 2020). Communication among employees contributes to the culture of the organization, which can severely affect productivity. For instance, research conducted by Budiawan, Santoso, Astuti, and Saudi (2020), on organizational culture, discovered that interpersonal skills contributed to the overall productivity of each employee. Interpersonal skills assist in the development of strong working relationships (Park & Evans, 2016; Stansbury, & Sonenshein, 2012; Takeuchi, Bolino, & Lin, 2015). When the relationships among employees are healthy, there is a sense of trust and dependency that leads to higher productivity (Livi, Theodorou, Rullo, Cinque, & Alessandri, 2018). The paradigm of workplace individualism has shifted to group and teamwork. This shift has meant that interpersonal skills have become more critical than ever before. For example, research conducted by Sheppard and Charles (2017) on the importance of interpersonal skills on teamwork, surveyed 170 employees from different business sectors and found that those who lacked this skill, struggled to meet team deadlines. The ability of employees to have self-awareness, empathy and relationship-building skills has become important to workplace productivity (Girardi, Falco, Carlo, Benevene, Comar, Tongiorgi, & Bartolucci, 2015). One aspect of interpersonal skills often overlooked is that of nonverbal communication, which can set the tone for interaction among employees (Marono, Clarke, Navarro, & Keatley, 2017). Understanding the norms and beliefs of people from other cultures has been one of the necessities with teamwork. Recent research has shown that companies value
interpersonal skills above most other skills because it shows adaptability, which is necessary to work in teams (Bellou & Gkorezis, 2016; King, Loy, Rohde, & Corley, 2020).

**Hypothesis 2:** Interpersonal Skills has a positive influence on work productivity

**Stress Management and Work Productivity**

According to the National Institute of Safety and Health (NIOSH), job stress is defined as the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources, or needs of the worker." (NIOSH, 1999). Job stress results in psychological strains such as job dissatisfaction, which leads to negative emotions that individual experiences in their jobs (Shukla, Srivastava & Nisar, 2016). As a result, several studies have identified the connection between stress and work productivity. According to studies conducted by various researchers, high levels of stress are often associated with absenteeism, lower job performance (Andela & Truchot, 2017), or reduced quality of work (Andela & Truchot, 2017; Le Blanc, Hox, Schaufeli, Taris, & Peeters, 2007).

As has been shown in past studies, emotional intelligence is essential in minimizing job stress (Farrastama, Asmony & Hermanto, 2019). Emotional intelligence can reduce job stress so that if job stress is low, then the possibility of employees engaging in counterproductive work behavior will be low (Farrastama, Asmony & Hermanto, 2019), reducing the impact on work productivity. The researchers explained that there is a negative relationship between emotional intelligence and job stress. The results of the study support previous research of Abdillah & Rahmat (2017), that stress can affect productivity. They also found that emotional intelligence has a negative influence on job stress, indicating that the higher emotional intelligence a person has, the lower the level of job stress experienced by an employee (Farrastama, Asmony & Hermanto, 2019).

Since job stress is a dynamic condition in which individuals face opportunities, constraints, or demands related to what they want and whose results are perceived as uncertain but necessary (Farrastama, Asmony & Hermanto, 2019). Organizations must pay attention to their employees to avoid job stress (Farrastama, Asmony & Hermanto, 2019). High levels of job stress can threaten a person's ability to deal with the environment, which ultimately disrupts the implementation of an employee's duties. The disruption can trigger an employee to carry out counterproductive work behavior, which can be detrimental to the organizations' ability to achieve its goals and negatively affect work productivity (Farrastama, Asmony & Hermanto, 2019).
**Hypothesis 3:** Stress Management has a positive influence on work productivity

**Methodology**

The population in the study was three-hundred and seven employees, working at six different technology companies and higher educational institutions. As stated by Zumilah (2012), the sample size can vary, and there is no specific rule to determine the right amount. The study also collected data from the direct supervisor of each employee who took part in the research. Before the data collection, written permission from each organization was obtained to collect data from the employees and supervisors. The researchers selected samples through a nonprobability sampling technique. Convenience sampling was used in the study because the participants were available, and it was challenging to get companies to provide the private information needed to complete the study. The sample was made up of 174 females and 126 males, with seventy percent from Technology companies and thirty percent from higher education institutions.

**Measurements**

The dependent variable in the study was work productivity, and it was measured by the evaluation of each employee's supervisor. The supervisor was asked to respond to a survey to ascertain the rate of productivity on a scale of one to five of the employees. The independent variables in the study were variables that are part of evaluating emotional intelligence. The selected variables were chosen because they have shown to have a strong relationship with work productivity in precious studies. The three independent variables were stress management, interpersonal skills, and self-perception.

The quantitative research used a survey to collect data. The survey consisted of 12 questions divided into three sections to measure the stress management, interpersonal skills, and self-perception of each employee. Each part of the survey contained four questions focusing on each independent variable. The survey questions were based on a 25-point Likert type scale, and the score on the four questions in each section was added together for a possible score of 100. The researchers used current relationships with authority figures are the companies and institutions to gain access to the employees. The internet survey was sent to the supervisors who dispersed the
instrument to the employees. Of the 345 employees who received the survey, 307 agreed to be part of the study.

**Results**

The study used multiple regression analyses to test hypotheses one, two, and three. Multiple regression models are commonly used to identify relationships between the dependent variable and the independent variables. The dependent variable, work productivity, was regressed on the three independent variables, which were self-perception, interpersonal skills, and stress management. In addition to running a regression analysis, the model produced was examined for multicollinearity to confirm that the independent variables did not have a significant impact on each other. The key to making good use of the data as a researcher is understanding the variables you are studying. When gaining a deep understanding of the relationships between the variables, we needed to have a familiarity with statistical methods. Also, the model was tested with a holdout sample to check its accuracy and reliability. A sample (50) of the 307 participants was tested against the overall model, and the results showed consistency and accuracy of the model. Table 1 shows the characteristics of the participants in the study and the accompanying descriptive statistics. Table 2 represents the results of the regression analysis.

Collectively, the three predictors of self-perception, interpersonal skills, and stress management account for 55% of the variance in work productivity (R² = .55). The R-square in the model represents a significant proportion and validates previous research that the variables of emotional intelligence are key contributors to work productivity. The finding shows that all three variables had a significant relationship with work productivity, with interpersonal skills having the highest beta value (β = .621, p < .01), followed by stress management (β = .451, p < .01) and self-perception (β = .329, p < .05).

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>N</th>
<th>%</th>
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<tbody>
<tr>
<td><strong>Gender</strong></td>
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<td></td>
</tr>
<tr>
<td>Male</td>
<td>178</td>
<td>58</td>
</tr>
</tbody>
</table>
Female 129 42

Race
White 185 60
Non-white 122 40

Industry of employment
Technology 215 70
Education 92 30

Education attainment
Less than college Graduate 71 23
College Graduate or above 236 77

Table 2. Multiple Regression Results

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>β</th>
<th>Standard Error</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work Productivity – Self Perception</td>
<td>0.329</td>
<td>0.21</td>
<td>0.00</td>
</tr>
<tr>
<td>Work Productivity – Stress Management</td>
<td>0.451</td>
<td>0.39</td>
<td>0.01</td>
</tr>
<tr>
<td>Work Productivity – Interpersonal Skills</td>
<td>0.621</td>
<td>0.50</td>
<td>0.01</td>
</tr>
</tbody>
</table>

Squared Multiple Correlations entrepreneurial success = 0.55

Discussion
The fact that the results are consistent with previous research on the factors associated with emotional intelligence is important both theoretically and practically. Theoretically, the current models used to explain emotional intelligence all include self-perception, interpersonal skills, and stress management. The models indicate that these three variables are a predictor for work productivity. From a practical perspective, the results have shown that even in a crisis such as COVID-19, these variables have merit in determining which employees have a higher chance of being productive. The study results point to a blueprint that can be maintained even in the worst
conditions, and organizations should either hire for these skills or develop them in their employees. Regardless of the type of business, work productivity is a high priority, and this is even more important in a crisis such as COVID-19 with reduced staff and limited resources.

Further analysis of the results showed that self-perception, interpersonal skills, and stress management are predictors of work productivity for both men and women alike. The results showed that both groups need to possess these skills to increase work productivity. Likewise, the educational attainment of the participants made little difference in the outcome. Regardless of the education level, the possession of high self-perception, interpersonal skills stress management is essential to work productivity during a crisis such as COVID-19.

**Hypothesis 1:** Self-perception has a positive influence on work productivity

The purpose of the study was to examine the relationship between emotional intelligence variables and work productivity during COVID-19. A multiple regression analysis was conducted, and several interesting findings were observed from the results. The first finding showed a significant relationship between self-perception and work productivity. Generally, it is expected that work productivity increases when a person's self-perception increases, especially during a crisis (Timler, McIntyre, Rose, & Hands, 2019). The finding is consistent with previous research that suggested when employees have positive attitudes and monitor their behaviors; there are more productive at the job (Hassan & Hatmaker, 2015). According to Calero, Barreyro, and Injoque-Ricle (2018), the behaviors of individuals contributes significantly to their attitudes, and in turn, drive their decision-making process.

**Hypothesis 2:** Interpersonal Skills has a positive influence on work productivity

Since businesses are moving towards groups rather than individual work, the findings related to interpersonal skills and work productivity was expected and supported the hypothesis. According to Budiawan, Santoso, Astuti, and Saudi (2020), interpersonal skills are the link between individual work and group success. The ability to react to each other and customers during COVID-19 was a significant contributor to work productivity. According to the multiple regression model, the results showed that interpersonal skills had the strongest relationship with work productivity. To further test the relationship between the independent variables and work productivity, the researchers individually examined the relationship between each independent
variable and the dependent variable. Of the variables and combinations, interpersonal skills had the highest R-square of (.62), which represents 62% of the variance in work productivity.

**Hypothesis 3:** Stress Management has a positive influence on work productivity

Finally, the results showed a positive and significant relationship between stress management and work productivity. The finding was expected and provided further support for previous studies that came to the same conclusion (Andela & Truchot, 2017; Le Blanc, Hox, Schaufeli, Taris, & Peeters, 2007). Considering the rise in anxiety and stress in the workplace, having stress management is essential to the productivity of employees. Of the variables, stress management had the most variation in the data because, during a crisis such as COVID-19, employees were asked to perform tasks that were outside their comfort zone. Those employees that were able to control the stress and adapt to the changes were the most productive (Farrastama, Asmony & Hermanto, 2019). Furthermore, the dispersion in the data associated with stress management can be explained by the other variables at home while the employee is working, which would not be present if in an office setting.

**Conclusions**

The findings of this study provide supporting evidence for self-perception, interpersonal skills, and stress management as a predictor for work productivity during a crisis such as COVID-19. The model is useful for managers and leaders who wish to hire and keep those employees who can be productive at work even in the most challenging situations. The findings also remind leaders and managers the importance of recruiting employees beyond their technical skill, but rather take a holistic view of a person’s qualities, background, willingness to learn, and determination for success.

From the results of the study, one suggestion is that companies make emotional intelligence a priority and provide adequate training to ensure that employees are well equipped to deal with a crisis such as COVID-19. Since businesses are concern about the bottom line, productivity must be a top priority. To maximize productivity, the study demonstrated that self-perception, interpersonal skills, and stress management are vital factors in achieving this goal. Another suggestion based on the results of the study is the importance of leadership during a crisis such as
COVID-19. Since employees were not prepared for such a sudden change, the level of support and guidance offered by their superiors is crucial to the continuality of normalcy.

Despite the intuitive findings, the researchers caution that the limitations of the study should be considered while interpreting the results. The first limitation is the method of data collection used within the study. Participants were asked to self-report on their levels of self-perception, interpersonal skills, and stress management. Previous research has shown that individuals usually always rank themselves higher than their peers or supervisors would on the same test (Creswell, 2013). Secondly, the participants were only from five organizations that were a part of two industries. Since COVID-19 has required many businesses to close, obtaining data from technology companies and higher education institutions was the most feasible since their employees continue to work from home. The factors of emotional intelligence have shown to be predictors of work productivity in all industries but not tested in conditions. Despite the chosen sectors, the researchers felt that the crisis of COVID-19 would be more important than the companies.

References


