Dimensional Impact of Emotional Intelligence on Creativity and Innovation in Malaysia's Multigenerational Workforce

Veronica Anak Anyot¹, Noraini Ahmad¹, Jugindar Singh Kartar Singh¹, Najiya Alhajri²

¹ School of Business Asia Pacific University of Technology & Innovation, Kuala Lumpur, Malaysia,
² Business Studies Department, University Technology of Applied Science, Muscat, Oman

Abstract

Employers must cultivate a conducive environment for employee innovation and productivity. This study focused on the impact of emotional intelligence (EI) on creativity and innovation among multi-generational employees in Kuala Lumpur’s financial sector. 132 employees participated, with results analyzed using SPSS and SmartPls version 4. Findings reveal that only the Use of Emotions (UOE) dimension significantly boosts creativity, while age moderates the link between creativity and innovation. This study offers insights valuable for recruitment, training, and organizational management. It contributes fresh perspectives to existing knowledge, marking the first of its kind in this context.

Keywords: Use of Emotions; Self Emotional Appraisal; Regulation of Emotion; Emotional Intelligence

1.0 Introduction

A report from the World Health Organization (2024) reported that life expectancy worldwide rose from 66.8 years in 2000 to 73.4 years in 2020. According to the Department of Statistics Malaysia, (2020) (DOSM), live births declined by 2.8 % in 2019. As a result of the higher life expectancy, the workforce landscape is shifting to a multigenerational workforce and business organizations need to change their existing policies and beliefs to cater for the performance and talents of the multigenerational workforce. Employees from different generations have different working beliefs, attitudes, and working styles (National Human Resource Centre, 2024). A report in the Harvard Business Review (2014), stated that workplace productivity depending on whether the workplace is productive or challenging and stressful depends on employers. Each generation in the workforce has its own set of traits, attitudes, and characteristics. This can lead to conflict in the workplace that can affect productivity. Therefore, employers need to create an environment to improve the creativity and innovativeness of the workforce and sustains performance.

In Malaysia’s current workforce, the multigenerational workforce presents a unique setting. Despite the growing importance of EI in influencing employees’ creativity and innovation, there is still a gap in the dimensional impact of EI within Malaysia’s multigenerational workforce. Existing research is focused on the interconnections between EI, creativity, and innovation (Wang et al., 2013; Bani-Melmel et al., 2018). There needs to be more research on the examination of the impact of the dimensions of EI on the creativity and innovation of the Malaysian multigenerational workforce. This study covers the gap by examining the dimensional impact of EI creativity and
innovation on the multigenerational workforce in Malaysia. The moderating role of age between creativity and innovation will be examined. To make this study more unique, the four dimensions are self-emotional appraisal (SEA), regulation of emotions (ROE), use of emotions (UOE), and others’ emotions appraisal (OEA). The results of this study can provide an understanding that can inform organizational practices to improve the multigenerational workforce’s creativity and innovation. This will lead to the improvement of organizational effectiveness and competitiveness in today’s environment. The findings are beneficial for organizations and human resource managers in shaping their recruitment and training policies and procedures.

2.0 Literature Review

1.1 Relationship between self-emotional appraisal and employee creativity.
Past studies have shown that self-emotional appraisal (SEA) is positively associated with employee creativity (Ding et al., 2022; Tsai and Lee, 2014). Employees with higher levels of SEA normally show higher levels of creativity (Wang et al., 2021). As explained by Wong and Law (2002), the ‘self-emotional appraisal’ sub-dimension refers to employees understanding their emotions and exhibiting the emotions naturally. The question to this understanding by Wong and Law (2002) is, ‘I always know clearly about the reasons for some of my specific feelings. The results of a study by Tsai and Lee (2014) revealed that employees who demonstrate high self-emotional appraisal and understanding of their emotions display higher levels of creativity. The following hypothesis was developed:

H1: Self-emotional appraisal is significantly related to employee creativity of multigeneration employees.

1.2 Relationship between regulation of emotions and employee creativity.
Past studies have shown that regulation of emotions (ROE) is positively associated with employee creativity (Toscano et al., 2023). In the study by Toscano et al., (2023), emotional regulation, or the ability to effectively manage one’s emotions was positively related to the employees’ creative style and innovative behavior. Sandro et al. (2023) study proved that employees with a higher ability to manage emotions are likely to have a creative style and demonstrate innovative behaviors. One of the sub-components of the regulation of emotions is optimism. Employees with higher levels of self-regulation ability are optimistic and upbeat, even under intense pressure. Mishra et al. (2016) study showed that optimism was significantly related to positive employee outcomes. The following hypothesis was developed:

H2: Regulations of emotions are significantly related to employee creativity of multigeneration employees.

1.3 Relationship between others’ emotional appraisal and employee creativity.
Past studies have shown that other emotional appraisal (OEA) is positively associated with employee creativity (Serrat and Serrat, 2017; Tsai and Lee, 2014). The ‘appraisal of others’ emotions’ sub-dimension refers to employees’ ability to recognize other employees’ emotions and empathize with them. To better understand other emotional appraisals is ‘I can always infer my friends’ emotions from their words and behavior.’ As highlighted by Serrat and Serrat, (2023), employees with higher levels of social awareness will willingly help, provide positive criticism, and make excellent mentors. Therefore, those who are socially conscious are said to be characteristically able to recognize the needs and expectations of others (Maheshwaran et al., 2018). The results of a study by Tsai and Lee (2014) specifically revealed that employees with higher levels of others’ emotional appraisal ability also show higher levels of creativity. The following hypothesis was developed for further testing:

H3: Others’ emotional appraisal is significantly related to employee creativity of multigeneration employees.

1.4 Relationship between use of emotions and employee creativity.
Past studies have shown that the use of emotions (UOE) is positively associated with employee creativity (Park et al., 2015). The results of a study by Tsai and Lee (2014) revealed that employees who demonstrate high use of emotions or relationship management display higher levels of creativity. Park et al. (2015) study revealed that regulation of emotion increases employees’ positive affect emotion facilitation ability or use enables employees to use their positive effect to improve their creativity. As explained by Wong and Law (2002), the ‘use of emotion’ sub-dimension refers to an employee’s use of his or her emotions to guide performance and vitality. The following hypothesis was developed:

H4: The use of emotions is significantly related to employee creativity of multigeneration employees.

1.5 Relationship Between Employee’s Creativity and Innovativeness.
Studies have revealed the inter-relationship between creativity and innovative behavior (Toscano, et al., 2023). The study by Ghosh (2020) revealed that a higher level of employee creativity led to the development of higher workplace innovative orientation. Toscano et al. (2023) study further suggested that employees with higher levels of creativity may be able to develop and exhibit innovative behaviors due to their ability to understand work-related situations and events positively. A lower level of employee creativity was related to lower

142
workplace innovation orientation. Cocco and Quttainah (2015) explained that the development of creativity and the related climate will result in higher levels of innovation. Substantiating the above findings is the fifth hypothesis:

H5: There is a significant relationship between creativity and innovativeness of multigeneration employees.

1.6 Age as a Moderator between Creativity and Innovativeness

There are several studies where age was a moderator between two constructs related to this study. In a study by Woods et al. (2018), tenure moderated the effect of openness with idea generation with highly open employees generating more ideas if they were no longer tenured. Ng and Feldman (2015) successfully tested the moderating effects of age in the relationships of job autonomy to work outcomes. Results of another study by Zacher and Griffin (2015) showed that older workers’ age, moderated the relationship between career adaptability and job satisfaction. It is believed that age will moderate the relationship between creativity and innovation. The sixth hypothesis was:

H6: Age moderates the relationship between creativity and innovativeness of multigeneration employees.

Following Figure 1 shows the research framework for the study. The model incorporates independent variables—SEA, ROE, OEA and UOE, a moderator which is age factor and a dependent variable, namely customer satisfaction among Malaysia’s multigenerational workforce.

![Research Framework](image)

**Fig. 1 Research Framework**

3.0 Research Methodology

This quantitative research explored the relationships illustrated in Fig 1 by employing a research method that focuses on the interactions between independent and dependent variables. The target respondents are multigenerational employees in Kuala Lumpur's financial sector. A survey method is then chosen based on Kin, Liang and Shgam (2022) method used for measuring SEA, ROE, OEA and UOE, with self-administered questionnaires distributed using a Likert scale. EI dimensions questions were adapted from the WLEIS scale developed by Wong and Law (2002). This scale encompasses four dimensions of EI. Creativity questions were adapted from the study by Lussier et al. (2017). Innovativeness questions were adapted from Hurt et al. (1977) and Pallister & Foxall, (1998). Kline (2016) recommended that for analyzing structural equation models, a sample of 100 is considered minor, and a sample of 100 to 200 is medium. Based on the recommendations of scholars, the target sample size for this study was between 100 and 200 respondents. For this study, convenience sampling was used and there were 132 respondents. The data is analyzed using the SPSS and SmartPls. The validity, reliability, multicollinearity, correlation coefficient moderation testing of the questionnaire were rigorously tested following standard of research methodology (Hair, et. al, 2021).

4.0 Findings

4.1 Demographics

For the age group, the highest number of respondents were from the age group of 41 – 50 years of age with a frequency of 53 (40.1%). Next were coming from the age group of 31 – 40 years of age with a frequency of 49 (37.1%) Another 23 respondents were from the
age group of less than 30 years of age with a frequency of (17.4%). The remaining were between 51 – 60 years of age with a frequency of 7 (5.4%). For gender, 88 respondents (66.7%) were females, and 44 respondents (33.3%) were male.

4.2 Internal Consistency Reliability

Table 1 demonstrates the Internal Consistency Reliability test results. The acceptable value for acceptable for Internal Consistency Reliability test must be higher than 0.7 (Garson, 2016; The results in Table 1 show that Cronbach’s alpha, Composite reliability (rho_a), and Composite reliability (rho_c) of all the variables are above the cut-off value of 0.7 and therefore reliability of data is established.

<table>
<thead>
<tr>
<th>Creative</th>
<th>Innovative</th>
<th>OEA</th>
<th>ROE</th>
<th>SEA</th>
<th>UOE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cronbach's alpha</td>
<td>0.942</td>
<td>0.928</td>
<td>0.840</td>
<td>0.922</td>
<td>0.879</td>
</tr>
<tr>
<td>Composite reliability (rho_a)</td>
<td>0.942</td>
<td>0.935</td>
<td>0.870</td>
<td>0.987</td>
<td>0.918</td>
</tr>
<tr>
<td>Composite reliability (rho_c)</td>
<td>0.958</td>
<td>0.938</td>
<td>0.891</td>
<td>0.942</td>
<td>0.917</td>
</tr>
</tbody>
</table>

4.3 Convergent Validity

The statistical requirement for an ideal threshold of average variance extracted (AVE) should be more than 0.50, which simply means, the latent construct explains no less than 50 percent of variances of the observed indicators (Hair et al., 2021). Table 2 shows the convergent validity results for all the variables. is above the threshold value of 0.5.

<table>
<thead>
<tr>
<th>Creative</th>
<th>Innovative</th>
<th>OEA</th>
<th>ROE</th>
<th>SEA</th>
<th>UOE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average variance extracted (AVE)</td>
<td>0.851</td>
<td>0.582</td>
<td>0.673</td>
<td>0.802</td>
<td>0.734</td>
</tr>
</tbody>
</table>

4.4 Discriminant Validity

This was to ensure that the construct was empirically distinct from the other constructs in the study. (Hair et al., 2021). The discriminant validity test can tested based on Heterotrait-monotrait ratio (HTMT). The HTMT is an improved criterion for establishing discriminant validity (Henseler et al., 2015). The acceptable value for HTMT results should be at a threshold of 0.9 or below. As shown in Table 3, all the values are below 0.9..

<table>
<thead>
<tr>
<th>Creative</th>
<th>Innovative</th>
<th>OEA</th>
<th>ROE</th>
<th>SEA</th>
<th>UOE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heterotrait-Monotrait Ratio (HTMT) Matrix</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creative</td>
<td>0.870</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovative</td>
<td>0.502</td>
<td>0.433</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OEA</td>
<td>0.505</td>
<td>0.604</td>
<td>0.446</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROE</td>
<td>0.615</td>
<td>0.605</td>
<td>0.617</td>
<td>0.852</td>
<td></td>
</tr>
<tr>
<td>SEA</td>
<td>0.777</td>
<td>0.754</td>
<td>0.463</td>
<td>0.572</td>
<td>0.747</td>
</tr>
</tbody>
</table>

4.5 Multicollinearity

Multicollinearity was used to diagnose the presence of high intercorrelation between two or more independent (Garson, 2016). A variance inflation factor (VIF) value is used to represent the result in the multicollinearity validity test. The inner model should be less than 3.3 (Table 4).

<table>
<thead>
<tr>
<th>Indicator/Relationship</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age -&gt; Innovative</td>
<td>1.060</td>
</tr>
</tbody>
</table>
4.6 Predictive Relevant (R-Square)

A predictive relevant R-square test was used to explain the variability observed in the target variable that is explained by the regression model (Garson, 2016). The r-square value in Table 5 is considered moderate for the Creative variable and high for the Innovativeness variable.

<table>
<thead>
<tr>
<th>Table 5: R-square</th>
<th>R-Square</th>
<th>Adjusted R-Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creativity</td>
<td>0.564</td>
<td>0.546</td>
</tr>
<tr>
<td>Innovative</td>
<td>0.732</td>
<td>0.724</td>
</tr>
</tbody>
</table>

4.7 Correlation Coefficient

Bootstrapping was done using 5000 sub-samples to test the significance of the path coefficients. In cases where the coefficient is a positive number, the variables are directly related. Statistically, T-values should be more than 1.960, and P-value results should be less than 0.05, to fulfill the intended significant relationship (Hair et al., 2021).

<table>
<thead>
<tr>
<th>Table 6: Path coefficients</th>
<th>Original (O)</th>
<th>Sample (M)</th>
<th>Standard deviation (STDEV)</th>
<th>T statistics (O/STDEV)</th>
<th>P values</th>
<th>Hypothesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creativity -&gt; Innovativeness</td>
<td>0.814</td>
<td>0.832</td>
<td>0.054</td>
<td>15.157</td>
<td>0.000</td>
<td>Supported</td>
</tr>
<tr>
<td>OEA -&gt; Creativity</td>
<td>0.155</td>
<td>0.160</td>
<td>0.103</td>
<td>1.508</td>
<td>0.132</td>
<td>Not supported</td>
</tr>
<tr>
<td>ROE -&gt; Creativity</td>
<td>0.120</td>
<td>0.139</td>
<td>0.099</td>
<td>1.214</td>
<td>0.225</td>
<td>Not supported</td>
</tr>
<tr>
<td>SEA -&gt; Creativity</td>
<td>0.033</td>
<td>0.003</td>
<td>0.162</td>
<td>0.203</td>
<td>0.839</td>
<td>Not supported</td>
</tr>
<tr>
<td>UOE -&gt; Creativity</td>
<td>0.570</td>
<td>0.578</td>
<td>0.140</td>
<td>4.076</td>
<td>0.000</td>
<td>Supported</td>
</tr>
<tr>
<td>Age x Creativity -&gt; Innovative</td>
<td>0.167</td>
<td>0.167</td>
<td>0.051</td>
<td>3.257</td>
<td>0.001</td>
<td>Supported</td>
</tr>
</tbody>
</table>

In table 6 of the path coefficients test results revealed that creativity and innovativeness have a positive and significant relationship (P-value is < 0.05). The variable Use of emotion (UOE) also had a positive and significant impact on creativity (P-value < 0.05).
remaining independent constructs did not significantly impact the dependent value, creativity. It was also revealed that age moderated the relationship between creativity and innovativeness.

4.8 Moderation test

Figure 2 shows diagram after bootstrapping. The moderator that is age showed a positive and significant relationship. This means the moderator changes the strength or even the direction of a relationship between creativity and innovation in this model. The moderator analysis results representation can be seen from the simple slope plots as shown in Figure 3. The plot in Figure 3 shows a simple slope plot for the relationship from creativity to innovation which is moderated by age in the corporate reputation model example (Hair et al., 2022).

5.0 Discussion

The first hypothesis was to find out whether there was a significant impact of self-emotional appraisal (SEA) on employee creativity. This hypothesis was not supported. The results deviated from past studies that have shown that SEA is positively associated with employee creativity (Ding et al., 2022). This means that employees with higher levels of SEA do not necessarily show higher levels of creativity.

The second hypothesis aims to explore the significant impact of the regulation of emotion on employee creativity (ROE). This hypothesis was not supported. The results deviated from past studies that have shown ROE is positively associated with employee creativity (Toscano et al., 2023). This means that regulating emotions does not necessarily influence employees to increase their creativity. The deviation may be due to other factors present in the environment. A person may not have control over the surrounding environment. Studies have suggested that anger can fuel creativity as it could enhance a cognitive appraisal through the arousal of emotion of the participants (Cheng et al., 2021).

The third hypothesis aimed to explore whether others' emotions affect creativity (OEA). This hypothesis was not supported. The results deviated from past studies that have shown that OEA is positively associated with employee creativity (Serrat and Serrat, 2017; Tsai and Lee, 2014). This means that employees' ability to recognize other employees' emotions and empathize with them does not significantly impact creativity.

The fourth hypothesis was to find out whether there was a significant impact of the use of emotions (UOE) on employee creativity. The results showed that this hypothesis was significantly supported. The results are in line with results from past studies that have shown that the UOE is positively associated with employee creativity (Tsai and Lee, 2014). Emotionally intelligent employees with a higher ability to use emotions can enhance their ability to solve problems, make decisions, and be more creative (Salovey and Mayer, 1990).

The fifth hypothesis was to find out whether there was a significant impact of employee creativity on innovativeness. The results showed that this hypothesis was significantly supported. The results are in line with results from past studies that have shown that employee creativity is associated with employee innovativeness (Gosh, 2015). This study also revealed that creativity had a very strong impact on employee innovativeness. This means that higher levels of employee creativity can lead to the improvement of workplace innovative orientation. As explained by Cocco, and Quttainah (2015), the improvement of employee creativity and the related climate
will result in higher levels of innovation among employees. This will further lead to performance and sustainment of competitive advantage.

The last hypothesis was to examine the moderating role of age between creativity and innovation. The results showed that age is a significant and positive moderator of the relationship between creativity and innovation. This means that age affects the strength and direction of the relationship between creativity and innovation of employees in the financial sector in Malaysia. The study by Woods et al., (2018) also revealed that tenure which is related to age moderated the effect of openness with idea generation with highly open employees generating more ideas if they were no longer tenured.

6.0 Conclusion & Recommendation
Findings indicate that SEA, ROE, and OEA did not significantly influence employee creativity. Only the UOE dimension positively affected creativity. Additionally, creativity significantly enhanced employee innovativeness. From the theoretical perspective, these were the new insights. Age as a moderator was also a new insight. These findings underscore the complexity of EI's role in creativity and innovation, providing valuable insights for organizational management and future research endeavors. Organizations should focus on the UOE dimension and note that creativity is a powerful contributor to innovation. However, limitation dimensional impact of EI such as social and spiritual intelligence were not examined in this study. For future studies should examine the dimensions of other models of EI. In addition, mediators such as employee engagement can be included. Lastly, future studies should also look into the incorporating of continuous variables as mediators.

Acknowledgements
The authors would like to thank to an anonymous referee for valuable comments and suggestions.

Paper Contribution to Related Field of Study
The findings from this study imply crucial recommendations that can be addressed by the organizations to enhance their recruitment, selection, and development of employees on creativity and EI.

References


Cocco, J., & Quttainah, M. A. (2015). Creativity versus innovativeness: Exploring the differences between the two constructs may lead to greater innovation in large firms. International Journal of Business and Management, 10(11), 93.


147


Sandro, P. (2023). Book Chapter, The Cambridge Handbook of Creativity and Emotions. 205-220. doi: 10.1017/9781009031240.014


