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NEURO EMOTIONAL INTELLIGENCE AS A FRAMEWORK FOR UNDERSTANDING LEADERSHIP PERFORMANCE IN STRESSFUL WORKPLACES

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SUMMARY

Organizational leaders increasingly need to be able to remain effective at making decisions, controlling their emotions, and being productive with other people, even in times of increased scrutiny. While emotional intelligence has been studied extensively, there has been very little empirical research on how the integration of neuro-emotional capabilities impacts executive performance in stress-prone work environments. This study develops and empirically evaluates a Neuro Emotional Intelligence framework as an explanation of leadership effectiveness for employees in organisations characterised by high pressure to perform. Survey data from 428 manager/supervisor level employees for the technology, healthcare, manufacturing, and service industries were used in a quantitative research design that employed reliability testing, descriptive statistics, Pearson correlations, and multiple linear regression analyses. The proposed framework examined the effects of emotional self-regulation, social awareness, cognitive empathy, and stress adaptability on leadership effectiveness. The regression model explained 71.8% of the variability in leadership effectiveness ($R^2 = 0.718$, $F = 213.46$, $p < .001$), with emotional self-regulation ($\beta = 0.281$, $p < .001$), stress adaptability ($\beta = 0.307$, $p < .001$), being the three strongest predictors of leadership effectiveness. The effects of social awareness and cognitive empathy on leadership effectiveness were also significantly positively related. Cronbach's alpha values produced by the reliability analysis ranged from 0.831 to 0.893, indicating satisfactory internal consistency of the measures utilized in the study. The research extends the use of neuro-emotional intelligence as a statistically significant, measurable framework to explain leadership effectiveness for people working in stressful organizations and provides practitioners with a framework for developing unique leadership development initiatives that create resilient leaders and managers who positively impact organizations

through increased executive effectiveness.

Key words: *neuro emotional intelligence, leadership performance, stressful workplaces, emotional self-regulation, stress adaptability, organizational leadership, multiple regression analysis.*

INTRODUCTION

Modern organizations function in an environment characterized by uncertainty, increasing demands for performance, constant change in technology, and increasing psychological demands. This places significant pressure on people who work in leadership roles as must be able to make effective decisions, keep an entire team working together, and maintain organizational performance despite continual workplace-related stress. For this reason, the study of the psychological competencies that allow leaders to be successful in stressful situations has become a growing field of interest in management research [1].

The development of emotional intelligence is an important skill when determining how people view, manage, and use their feelings within the workplace. Leaders who have developed emotional abilities are typically better equipped to deal with conflict amongst peers, resolve employee issues, and maintain positive relationships among workers. Research shows that emotionally intelligent leaders lead to empowering staff, providing quality communications, and enhancing overall employee involvement, resulting in improved organizational performance [2].

As demand for managers continues to grow, the interest in the neuropsychological aspects of leading has also increased. Neuro-emotional capabilities such as emotion regulation, adaptive thinking, empathy, and stress handling all affect how leaders process information and respond effectively under difficult conditions. The development of these capabilities into a complete model allows for an explanation of variations in leadership performance other than just traditional manager competencies [3].

One of the most serious challenges to the effective performance of an organization is stress. When there is a lot of occupational stress, it can decrease one's ability to think flexibly and to make sound judgments and can also adversely affect one's ability to interact successfully with other people. Conversely, it has been shown that people with a high level of emotional intelligence have a better ability to cope with stress and remain effective at work during times of high demand [4].

Emotional awareness and mental health of leaders contribute to effective leadership and improve their performance in terms of leadership and decision-making, as evidenced by research conducted on leaders in education and healthcare settings [5]. Being emotionally intelligent enables leaders to support their employees and help prevent emotional exhaustion from work, leading to improved leadership outcomes and higher levels of satisfaction with leadership decisions made by their employees [7]. As a result, emotionally intelligent leaders create a positive work environment that encourages cooperation, increases trust between leaders and employees, and assists in maintaining employee retention [6].

Due to the emotional and cognitive demands associated with the responsibilities of being a leader within an organization, there has been a great deal of research into how leadership can affect the level of job-related stress. Continually balancing employee expectations with organizational goals and dealing with ambiguity and interruptions is an integral part of being a leader [21]. Emotional intelligence serves as a buffer for leaders by allowing them to manage their emotions and continue to perform at their best, even when faced with difficult situations [8].

Recent research has provided more evidence for the significance of emotional capacity in high-stress careers and that emotional intelligence is a moderator between the adverse effects of occupational stress/burnout, while improving resilience and adaptive behaviour [9]. It appears that neuro-emotional abilities may be an important explanation of why there are differing performances in stressful situations among leaders; there are those who remain high performing and those who experience a decline in performance [10].

Although there is a large body of literature on the relationship between emotional intelligence and leadership, few empirical studies have used a quantitative statistical approach to investigate the influence of neuro-emotional intelligence on leadership effectiveness in stressful work environments. Most studies have focused on singular emotional competencies or specific occupational populations, failing to adequately describe the combined impact of neuro-emotional factors on the effectiveness of leaders. This study aims to develop an empirical model using a neuro-emotional intelligence framework to determine the effects of emotional self-regulation, social awareness, cognitive empathy, and stress adaptability as predictors of leadership effectiveness in stressful working environments.

Research Objectives

RO1: Evaluating how much emotion regulation improves leader effectiveness in difficult environments.

RO2: Explore how socially aware leaders can become more effective through social awareness.

RO3: Determine how cognitively empathetic leaders improve their effectiveness when working under extreme stress.

RO4: Assess how much adaptability to stress improves a leader's overall effectiveness.

Research Questions

RQ1: What impact does mastering emotional regulation have on a leader's effectiveness in high-stress settings?

RQ2: What influence does an individual's social awareness have upon how well lead?

RQ3: What influence does an individual's ability to demonstrate cognitive empathy have on their effectiveness as a leader in high-stress times?

RQ4: How does a leader's ability to adapt to various types of stress influence his/her ability to be effective?

Research Hypotheses

H1: Emotional self-regulation will positively impact a leader's performance in high-stress work environments.

H2: A leader's social awareness will positively affect their leadership performance.

H3: Cognitive empathy will positively influence a leader's performance in high-stress workplaces.

H4: Stress adaptation will be positively related to a leader's performance.

Key Contributions

- A newly developed quantitative system is put together to combine emotional self-regulation, social awareness, cognitive empathy, and the ability to handle stress into an explanation for leadership effectiveness in stressful work environments.
- The research shows that the combination of neuro-emotional intelligence traits provides for a greater than 71.8% explanation of variation in overall leadership performance.
- The study shows that the two most important predictors of being able to lead successfully in an organization that has a high-stress environment are stress adaptability and emotional self-regulation.

- An evidence-based multi-linear regression model is developed to assist organizations with assessing the effectiveness of their leaders, developing talent, and making decisions regarding the utilization of their leaders in high-stress work environments.

Section I defines the research problem, objectives, questions, and hypotheses for this study. Section II introduces relevant literature related to emotional intelligence, neuroemotional competence, and leadership performance and describes the current research gaps between these areas of knowledge. Section III outlines the research design, sampling procedures, data collection processes, conceptual framework, and statistical modeling used during the conduct of the research. Section IV reports the empirical findings, hypothesis testing, model assessment, and implications of the statistical analysis for management. Section V summarizes the key findings of the study, the contribution it makes to knowledge, and how the findings can be applied practically and may lead to future research activities.

LITERATURE REVIEW

The growth in the popularity of neuro-emotional competencies in leadership research is due to these competencies' ability to impact managerial effectiveness, quality of decisions, and relationships with others. Leaders with developed emotional competencies are viewed as being most successful in dealing with uncertainty in their organizations, handling workplace conflict, and creating a positive climate within the workplace [11]. The growing complexity of the workplace has prompted to investigate how emotional and cognitive processes can influence effective performance by leaders in their organization.

According to research studies conducted to assess the relationship between emotional intelligence and the effectiveness of leaders, it has been demonstrated that emotional competency is positively related to motivating work teams, maintaining a commitment to the organization, and providing a strong basis for communicating effectively with employees and promoting citizenship behaviour among employees to help improve leadership outcomes in a positive way [12]. This suggests that emotional competencies are important for all leaders working within stressful and ever-changing environments.

The connection between emotional skills and occupational stress has been studied extensively. Research conducted on healthcare and service professionals shows that individuals with high levels of emotional intelligence report lower levels of emotional exhaustion and higher levels of resilience when dealing with stressful situations [13]. These findings suggest that emotional skills may provide leaders with a source of protection against negative workplace conditions so that can continue to perform successfully.

One more key piece of neuro-emotional intelligence is cognitive empathy - how well you can comprehend the feelings of those around you. Studies have shown that leaders with more empathy create better relationships and have better conflict resolution ability than those who have little or no empathy [14]. Leaders who exhibit empathy have more trusting relationships with their staff, which leads to improved team performance. Additionally, social awareness, how well it is perceived and interpreted social cues, has been found to be a significant predictor of leadership success. Studies have demonstrated that leaders who can accurately perceive and interpret social cues are more effective at leading and managing diverse teams and responding to employee issues [15]. An increase in social awareness also results in an increase in communication quality and overall organizational cohesion.

The importance of emotional self-regulation has been highlighted by recent research into organizations because many of the situations that leaders encounter require them to have good emotional self-regulation in order to respond in a reasonable and balanced manner. Data suggest that when leaders can effectively use emotional self-regulation, have better decision-making abilities, more effective problem-solving skills, and are able to lead with greater adaptability [16]. As such, leaders who can control their emotional responses are better able to maintain their performance level during times of stress for the organization. Additionally, stress adaptability is an important part of neuro-emotional intelligence. Studies of resilience in the workplace indicate that adaptive individuals have better ways of managing uncertainty, recovering from failure, and staying productive in difficult or stressful situations [17]. Therefore, stress adaptability is an essential quality for a leader in a highly demanding environment.

Scholarly evidence supports the inclusion of emotional intelligence when developing leaders as part of their development programs. Training on how to develop one's emotional skills has been shown to enhance leadership potential and has also contributed to improving organizational performance through employee engagement [18], which demonstrates that the inclusion of neuro-emotional dimensions in leadership assessment frameworks is practically important. Studies on psychological factors affecting leadership performance have shown that having emotional skillsets positively impacts strategic decision-making and behaviors focused on innovation [19]. Leaders who can regulate their own emotions and can accurately identify the emotions in others have the capability of leading through organizational change and creating a cooperative working environment.

Evidence has recently been found to support the conclusion that emotional intelligence is an important component of business continuity because it enables leaders to manage situations better when occur and provides employees with confidence during unpredictable times [20]. Collectively, these research studies demonstrate that neuro-emotional competencies contain the basis of many differences in quality leadership, which leads to the proposal for a method of quantifying not only how each of these emotional self-regulation, social awareness, cognitive empathy, and stress adaptability contributes to effective leadership in stressful business environments but also how interact with one another using a comprehensive integrated research method.

The studies reviewed have shown a positive influence of emotional intelligence along with its associated emotional self-regulation, social awareness, cognitive empathy, and ability to adapt to stress on leadership effectiveness and organizational outcomes. Current research primarily focuses on these emotional intelligence dimensions separately or by specific job type, providing very limited knowledge of combined emotional intelligence dimensions' influence on leadership performance in stressful work environments. There is also a lack of empirical support for an integrative neuro-emotional intelligence framework with conventional statistical modeling methods. Therefore, the present study fills this gap by creating a quantitative framework that examines the effects of several neuro-emotional dimensions on leadership performance through regression-based analysis.

METHODOLOGY

Research Design

The present study used a quantitative, cross-sectional research method to evaluate how different dimensions of neuro-emotional intelligence influence leadership effectiveness in high-stress environments. Used a quantitative approach because the research aims to determine measurable associations among several psychological and behavioural variables by utilizing statistical modeling techniques. The cross-sectional design allowed data collection from an organization's employees at one point in time and, therefore, was used to assess the predictive capabilities of neuro-emotional intelligence dimensions using regression analysis.

Study Area

This research study was a result of an extensive investigation throughout metropolitan areas of Southeast Asia and the Middle East, specifically Singapore, Malaysia, and the UAE. These regions were chosen due to high levels of demand placed upon employees who work there, their high-performance expectations, and rapidly changing organizational environments. Organisationally, these locations provide the potential for multicentre companies and industries that possess high levels of stress from occupational sources, combined with continual managerial challenge. The research focused on organizations within the information technology, health care, manufacturing, finance, and professional consulting industries as provide opportunities for leaders to balance making critical leadership decisions with ensuring employee welfare and sustaining successful organizational performance simultaneously.

Population and Sampling Frame

Target participants came from a mix of managerial and supervisory roles based within medium-sized organizations. Team leaders, project managers, department supervisors, ops managers, and other middle management positions were included as part of the sampling frame. The human resources departments of each of these organizations provided de-identified employee directories that outlined the participants' job titles, years of employment, and their associated departments. These employee directories were used to generate a Respondent sampling frame.

The total population of individuals eligible to participate is estimated at approximately 1,320 individuals among twenty-two organizations that represent individual organizations in each of the selected geographical regions. Given that the purpose of the study was to assess behavioral and managerial characteristics of participants, individuals in supervisory roles were eligible to participate if had a minimum of two years of experience working in their current position and at least one year as a supervisor.

Sampling Technique and Sample Size Determination

A stratified random sampling method was used to obtain better representation across industries and levels of management. Initially, all respondents were placed into strata based on their industry type and position within their organization. Then, random samples were selected from each stratum based on the size of the stratum.

The size of the sample was determined using Cochran's equation given by equation (1):

$$n_0 = \frac{Z^2 pq}{e^2} \quad (1)$$

where n_0 denotes the minimum sample size, Z represents the standard normal value corresponding to a 95% confidence level and is equal to 1.96, p denotes the estimated proportion of the population possessing the required characteristics and was assumed to be 0.50, $q = 1 - p$, and e represents the acceptable sampling error of 0.05.

A minimum of 385 respondents needed to be surveyed. To allow for incomplete responses and non-response bias, a total of 500 questionnaires were distributed. A total of 442 were returned from the sample, of which 428 were usable (i.e., complete) for statistical analysis, yielding an overall effective response rate of 85.6%.

Data Collection Procedure

A structured questionnaire was used to collect primary data. Electronic and printed survey instruments were used when administering the questionnaire. Before the final collection of questionnaires, pre-tested by having 30 managerial employees complete a pilot version of the questionnaire to establish the clarity of the items, the readability of the items, and to corroborate the construct reliability of the items. Following the pilot testing, changes were made to the instrument based on the information that had been obtained from the pilot testing.

In the end, the final survey was divided into two sections. The first section of the final survey contained demographic data (age, length of employment, position in organization, and type of employer), while the second section recorded the five constructs that make up emotional self-regulation, social awareness, cognitive empathy, ability to adapt under stress, and performance as a leader.

A Five-Point Likert scale, where 1 indicates "Strongly Disagree" and 5 indicates "Strongly Agree," was used to analyse each measurement item with a five-point response range, since a five-point scale allows respondents some degree of flexibility in their answers when providing data for quantitative statistical analysis purposes.

Measurement of Variables

The construct of Neuro Emotional Intelligence was measured by four independent variables: emotional self-regulation, social awareness, cognitive empathy, and adaptability to stress. Emotional self-regulation is defined as a person's ability to manage their own emotions during times of stress. Social awareness is defined as a person's ability to perceive the social dynamics in a particular organization and how other individuals are responding to these dynamics on an interpersonal level. Cognitive empathy is defined as a person's ability to perceive the emotions and viewpoints of other individuals. Adaptability to stress is defined as a person's capability to function well during times of stress while continuing to perform effectively and returning to a state of effectiveness after experiencing stress.

The dependent variable, leadership performance, is defined as the ability of a leader to positively influence their employees, achieve their organization's goals, effectively coordinate their team, and produce quality decision-making while in a stressful situation.

Conceptual Framework

The conceptual framework of this research is presented in figure 1. The framework proposes that neuro emotional intelligence elements (i.e., emotional self-regulation, social awareness, cognitive empathy, and stress adaptability) influence a leader's workplace performance when dealing with stressful situations. Emotional self-regulation is thought to assist leaders in managing their emotions and making fair decisions in challenging situations; social awareness enhances effective engagement and communication with employees; cognitive empathy strengthens the leader's ability to manage their relationships, including conflict resolution; and stress adaptability increases resilience and decision-making ability under periods of uncertainty. Additionally, the proposed model includes demographic factors, such as age, experience, level in the organization, and type of industry, as control variables for measuring differences in the performance of leaders due to individual and organizational characteristics. The model presented in figure 1 assumes that there are positive relationships between each component of neuro emotional intelligence and leader's workplace performance.

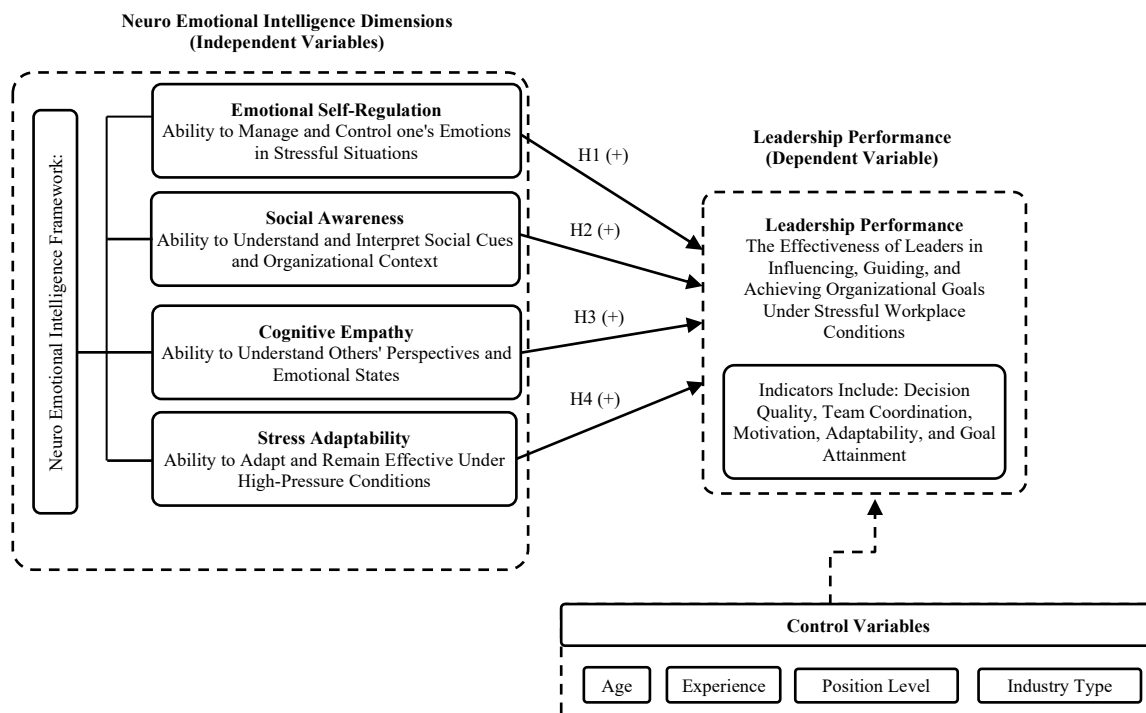


Figure 1. Proposed neuro emotional intelligence framework for predicting leadership performance in stressful workplaces

Reliability and Validity Assessment

Cronbach's alpha was used to determine the reliability of the tool with a cutoff value of 0.70 being used for acceptable levels of satisfactory internal consistency across items being measured.

Equation (2) was used to calculate Cronbach's alpha value:

$$\alpha = \frac{k}{k-1} \left(\frac{\sum_{i=1}^k \sigma_i^2}{\sigma_T^2} \right) \quad (2)$$

Where k denotes the number of measurement items, σ_i^2 represents the variance of each item, and σ_T^2 denotes the total variance of the scale.

Construct validity was examined through inter-item correlations and item-total correlations to ensure that the questionnaire adequately measured the intended constructs.

Statistical Model for Analysis

Statistical analysis techniques used in this research were descriptive statistics, assessments of reliability of instruments, the Pearson Product Moment correlation, and multiple linear regression modeling. Descriptive statistics helped summarize the characteristics of the respondents and distributions of variables used in the study by taking measures of central tendency (means) and measures of variability (standard deviations). Following the examination of descriptive statistics, Pearson Product Moment Correlation coefficients were computed to determine both the strength and the direction of the relationships among both independent and dependent variables.

The primary technique for analysis used in this study was multiple linear regression modeling. The reason for using this technique was that it allowed for the evaluation of multiple predictor variables in terms of their contributions to determining Leadership Performance as this applies to stressful work environments. The regression equation developed in this study is shown in the following equation (3):

$$LP = \beta_0 + \beta_1 ESR + \beta_2 SA + \beta_3 CE + \beta_4 STA + \varepsilon \quad (3)$$

In the above equation, LP is Leadership Performance, ESR is Emotional Self-Regulation, SA is Social Awareness, CE is Cognitive Empathy and STA is Stress Adaptability. The term β_0 is the regression constant (or intercept) for this model and β_1 , β_2 , β_3 , and β_4 are the regression coefficients for each of the predictor variables. The term ε is the random error component that captures the variation in leadership performance that cannot be explained by the other variables.

Accordingly, the estimated value of leadership performance can be represented as equation (4):

$$\widehat{LP} = \hat{\beta}_0 + \hat{\beta}_1 ESR + \hat{\beta}_2 SA + \hat{\beta}_3 CE + \hat{\beta}_4 STA \quad (4)$$

The model's coefficients show how much a leader's performance would change for each one-unit increase in the related independent variable if all other independent variables remain unchanged. The F-statistic was used to determine if the overall model was statistically significant. The t-tests (5% level of significance) were used to determine if each coefficient in the regression model was statistically significant. The variance inflation factor and tolerance statistics were calculated to verify no multicollinearity exists between the independent variables, and thus to validate the effectiveness of the regression model's use for empirical analysis.

Hypothesis Testing Procedure

The F statistic was used to evaluate importance for overall significance of the regression model while the t-tests on regression coefficient were used to evaluate each predictor variable's individual effect. If the probability value was lower than 0.05 then null hypothesis would be rejected. In addition, diagnostics

for multicollinearity were done using variance inflation factors and tolerance values to ascertain that the independent variables did not have excessive intercorrelation among them.

Thus, this methodology provides a comprehensive quantitative framework to investigate the causes of differences in leadership performance at work under stress by determining the degree to which neuro emotional intelligence dimensions help explain the differences in leadership performance at work under stress. It also creates a sound statistical foundation for future empirical analyses of the subject matter to be examined in the following sections of this study.

RESULTS AND DISCUSSION

Sample Details

Out of 500 questionnaires sent out to managers and supervisors from those organizations, a total of 442 responses was received, with 428 of them being completed and suitable for analysis. As a result, the effective response rate is 85.60%.

Table 1. Demographic characteristics and professional profiles of survey respondents

Characteristics	Category	Frequency	Percentage (%)
Gender	Male	241	56.3
	Female	187	43.7
Age	25–34 years	118	27.6
	35–44 years	174	40.7
	45–54 years	98	22.9
	Above 54 years	38	8.8
Experience	2–5 years	97	22.7
	6–10 years	149	34.8
	11–15 years	112	26.2
	Above 15 years	70	16.3
Industry	Information Technology	122	28.5
	Healthcare	85	19.9
	Manufacturing	96	22.4
	Financial Services	69	16.1
	Consulting	56	13.1

According to table 1, most of the individuals whose age groups were 35 to 44 years old made up 40.7% of the entire sample. Most of the individuals in this group are also likely to have between 6 and 10 years of work experience in a professional capacity. Therefore, this indicates that this sample consists mainly of individuals who are experienced managers and are able to provide accurate information to assess leadership performance in a high-stress workplace environment.

Reliability Analysis

Table 2. Reliability assessment of the measurement constructs used in the study

Construct	Number of Items	Cronbach's Alpha
Emotional Self-Regulation	5	0.864
Social Awareness	5	0.831
Cognitive Empathy	5	0.847
Stress Adaptability	5	0.881
Leadership Performance	6	0.893

According to table 2, each of the constructs have Cronbach's alphas greater than 0.70 which meets the recommended threshold for reliability. The range of alpha values was found to be between 0.831 and 0.893 indicating acceptable internal consistency suggesting that the measurement scale is reliable enough to support further statistical analysis.

Descriptive Statistics

According to table 3, respondents indicated believe successful leaders such as evidenced by their average score for leadership being 4.08 which was highest of all four-leadership performance. Also, Stress Adaptive across all independent variables scored the highest (average score) indicating that this skill is a critical managerial competency to be able to perform under difficult conditions.

Table 3. Descriptive statistics of neuro emotional intelligence and leadership variables

Variable	Mean	Standard Deviation
Emotional Self-Regulation	3.96	0.67
Social Awareness	3.88	0.63
Cognitive Empathy	3.91	0.69
Stress Adaptability	4.02	0.65
Leadership Performance	4.08	0.61

Correlation Analysis

Table 4. Pearson correlation analysis among the study variables

Variable	ESR	SA	CE	STA	LP
ESR	1.000	0.511	0.482	0.554	0.721
SA	0.511	1.000	0.535	0.471	0.664
CE	0.482	0.535	1.000	0.496	0.637
STA	0.554	0.471	0.496	1.000	0.748
LP	0.721	0.664	0.637	0.748	1.000

Table 4 shows that each of the dimensions included within neuro emotional intelligence correlated positively with leadership performance. The strongest correlation between leadership performance and a dimension is stress adaptability ($r=0.748$), whereas the second most highly correlated dimension is emotional self-regulation ($r=0.721$). No intercorrelation coefficient exceeded 0.80; therefore, it appears that multicollinearity is not likely to be of concern.

The Pearson correlation coefficient was computed as equation (5):

$$r = \frac{\sum(X_i - \bar{X})(Y_i - \bar{Y})}{\sqrt{\sum(X_i - \bar{X})^2 \sum(Y_i - \bar{Y})^2}} \quad (5)$$

Regression Model Evaluation

Table 5. Summary statistics of the multiple regression prediction model

Statistic	Value
R	0.847
R ²	0.718
Adjusted R ²	0.715
Standard Error	0.326

According to table 5, the model accounts for 71.8% of the variance in leadership performance. The significant coefficient of determination suggests that the emotional intelligence dimensions used in this model as a whole provides a significant amount of explanatory power to predict leader effectiveness.

The coefficient of determination was computed as equation (6):

$$R^2 = 1 - \frac{SS_{Residual}}{SS_{Total}} \quad (6)$$

Table 6. Analysis of variance results for the proposed regression model

Source	Sum of Squares	df	Mean Square	F	p-value
Regression	114.436	4	28.609	213.460	$p < 0.001$
Residual	56.699	423	0.134		
Total	171.135	427			

Table 6 demonstrates that the overall regression model is statistically significant ($F = 213.460$, $p < 0.001$). Therefore, the proposed framework is suitable for explaining leadership performance in stressful workplaces.

The F-statistic was calculated as equation (7):

$$F = \frac{MS_{Regression}}{MS_{Residual}} \quad (7)$$

Hypothesis Testing

Table 7. Regression coefficients and hypothesis testing

Hypothesis	Relationship	β	t-value	p-value	Decision
H1	ESR $\rightarrow$ LP	0.281	6.944	$p < 0.001$	Supported
H2	SA $\rightarrow$ LP	0.174	4.523	$p < 0.001$	Supported
H3	CE $\rightarrow$ LP	0.158	3.967	$p < 0.001$	Supported
H4	STA $\rightarrow$ LP	0.307	7.821	$p < 0.001$	Supported

In addition, table 7 shows that all four hypotheses received support. The strongest predictor of the leadership performance was stress adaptability ($\beta = 0.307$), while emotional self-regulation was the next most predictive variable ($\beta = 0.281$). Therefore, leaders who are able to adapt to stress (stress adaptability) and to effectively regulate emotions achieve higher levels of workplace performance than their counterparts.

The regression coefficients were estimated using the Ordinary Least Squares approach as equation (8):

$$\hat{\beta} = (X'X)^{-1}X'Y \quad (8)$$

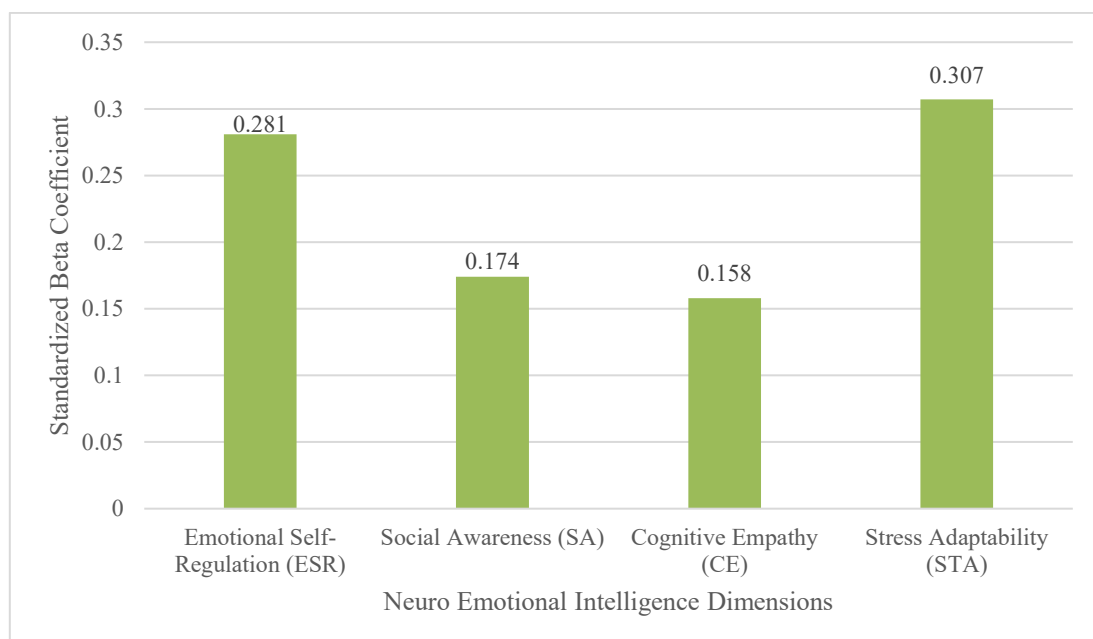


Figure 2. Comparative influence of neuro emotional intelligence dimensions on leadership performance based on standardized regression coefficients

Leadership performance is influenced by each individual element of neuro emotional intelligence; however, there are differences in their relative contributions to that effectiveness as illustrated in figure 2. The element with the highest standardized coefficient is stress adaptability, i.e., the ability to function effectively under stress is the greatest contributing dimension to leadership efficacy. The element with the next highest standardized coefficient is emotional self-regulation. There are also positive and significant contributions from social awareness as well as cognitive empathy related to leadership effectiveness.

Multicollinearity Diagnostics

Table 8. Multicollinearity diagnostics for the independent predictor variables

Variable	Tolerance	VIF
ESR	0.592	1.689
SA	0.641	1.560
CE	0.618	1.618
STA	0.573	1.744

Table 8 indicates that all VIF values are below 5.0 and tolerance values exceed 0.20, confirming the absence of multicollinearity among the independent variables.

Discussion and Managerial Implications

Data suggests that leaders with higher scores in neuro emotional intelligence are successful in leading others in high-stress environments; much better able to manage stress effectively and stay calm under pressure. It appears that neuro emotional intelligence is an accurate predictor of an individual's ability to lead others effectively. As such, it is essential that organizations focus their resources on developing individuals' skills to regulate their own emotions and adapt to stressors as these skills provide the best return on investment for effective leadership development efforts.

The results also show that social awareness and cognitive empathy improve interpersonal relationship, communication and conflict resolution in relationship with one another. Therefore, organizations have the potential to improve their leadership development programs, executive coaching programs, and management assessment systems through the incorporation of neuro-emotional competencies into those programs.

Suggestions

It is recommended that organizations utilize neuro emotional intelligence assessment tools as part of the selection & promotion process when selecting & promoting new leaders. Emotional regulation, developing resiliency, developing emotional-based communication skills should all be incorporated into leadership development training programs; this will allow organizations to periodically assess their leaders' competency levels and identify areas for further development, thereby improving leader performance during stressful times in the workplace. Additionally, it is recommended that organizations develop long-term organizational policies that formalize the use of neuro emotional intelligence as part of an organization's Strategic Alignment to promote long-term sustainable leadership & organizational resilience.

CONCLUSION AND FUTURE WORK

The purpose of this study was to develop and validate an evidence-based Neuro Emotional Intelligence model that can help practitioners understand how neuro emotional intelligence affects leadership performance in the workplace, especially when there is a great deal of stress in the workplace. Data were collected from 428 employees (managerial and supervisory) in various industries as part of this study. In accordance with the guidelines established by the American Psychological Association (APA), multiple linear regression analysis was utilized to test the relationship between emotional self-regulation, social awareness, cognitive empathy and stress adaptability as relate to leadership effectiveness. The

results indicate that the model proposed in this study is an appropriate explanatory tool because it accounts for 71.8% of the variance in leadership performance ($R^2=0.718$). The results of the overall regression model were significant ($F=213.460$, $p<0.001$) which indicates that the dimensions of neuro emotional intelligence give a comprehensive explanation for leadership outcomes in organizations with a high work demand or high level of stress. Of the predictor variables studied, stress adaptability was found to be the most significant predictor of leadership performance ($\beta=0.307$), followed by emotional self-regulation ($\beta=0.281$). Social awareness ($\beta=0.174$) and cognitive empathy ($\beta=0.158$) also have a significant positive effect on leadership effectiveness. Finally, reliability analyses confirmed all of the constructs were internally consistent with Cronbach's alpha coefficients ranging from 0.831 to 0.893.

The results show that a person's capability to self-regulate emotions, deal with stress well, comprehend the social dynamics of their environment, and empathize with others has an important relationship to how well leaders perform when lead in a high-stress work environment. Future research may employ longitudinal data and add other psychological variables, including resilience, cognitive flexibility, and additional constructs that may impact the validity of the proposed model across various cultures and industries.

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