Volume 01, Issue 01, 2025. pp. 59–68
Research Article

Journal of Nepal Commerce Association

Factor Structure and Model Validation of Emotional Intelligence: An Exploratory and Structural Equation Modeling Approach

Soumya V[1], Santhosh Kumar K[2]

[1]Post Graduate Teacher, De Paul Higher Secondary School, Kuravilangad, Kerala, India
[2]Assistant Professor, College of Applied Science (IHRD), Kaduthuruthy, Kerala, India

Abstract

The present study examined the level of emotional intelligence among higher secondary students in the Kottayam district using a descriptive survey research design. An adapted 15-item scale derived from the NHS Leadership Toolkit was administered to a stratified random sample of students from aided and unaided schools. Exploratory Factor Analysis (EFA) confirmed a clear three-factor structure—Self-Awareness, Managing Emotions, and Empathy—with all factor loadings exceeding 0.50. Reliability analysis demonstrated strong internal consistency, with Cronbach's alpha values ranging from 0.818 to 0.854. The Kaiser-Meyer-Olkin value of 0.816 and significant Bartlett's test established sampling adequacy. Structural Equation Modeling (SEM) further validated the measurement model, yielding excellent fit indices (CFI = 0.991, GFI = 0.955, TLI = 0.988, RMSEA = 0.040). Regression weights and standardized estimates indicated significant and meaningful relationships among the constructs. The study concludes that the developed instrument possesses strong psychometric properties and is suitable for assessing emotional intelligence among higher secondary learners, providing insights that can guide educational planning and emotional skill development programs.

Keywords: emotional intelligence, self-awareness, managing emotions, empathy, exploratory factor analysis

Corresponding Author
Santhosh Kumar K

Article History
Received: October 12, 2025
Accepted: December 08, 2025

Email
santhoshembranthiri@gmail.com

Cite
Soumya V., & Santhosh Kumar, K. (2025). Factor structure and model validation of emotional intelligence: An exploratory and structural equation modeling approach. *Journal of Nepal Commerce Association* (*JNCA*), *1*(1), 59–68.

Introduction

Emotional Intelligence (EI) has emerged as a pivotal construct in understanding human behavior, decision-making, and interpersonal effectiveness in both personal and professional contexts. Rooted within the pioneering work of Salovey and Mayer (1990), EI refers to the potential to understand, recognize, modify, and manipulate one's personal emotions in addition to those of others. In an generation of dynamic social and organizational change, the ability to navigate emotions constructively has grow to be an important competency influencing leadership, teamwork, and mental well-being (Goleman, 1998). The multidimensional nature of EI has drawn interest from researchers throughout disciplines, prompting empirical efforts to become aware of its underlying elements and their interrelationships.

Over time, diverse models of Emotional Intelligence have been proposed; with the most broadly recognized being the capacity-based

model (Mayer, Salovey, & Caruso, 2004) and the blended model (Goleman, 2001). those frameworks emphasize distinct but overlapping dimensions which include self-cognizance, self-regulation, motivation, empathy, and social talents. however, notwithstanding vast theoretical discussions, there remains an ongoing need to empirically validate those dimensions in numerous populations and contexts (Petrides & Furnham, 2000). Exploratory factor analysis (EFA) and Structural Equation Modeling (SEM) provide robust statistical strategies to discover latent structures and assess the reliability and validity of size fashions, thereby providing deeper insights into the construct of EI.

The current study targets to perceive and validate the core dimensions of Emotional Intelligence using EFA and SEM. especially, the study seeks to analyse how factors such as self-awareness, managing emotions, and empathy make contributions to the overall construct of Emotional Intelligence. by employing advanced multivariate strategies, this studies endeavors to establish a statistically sound and theoretically steady version that enhances our understanding of EI as a multidimensional construct. The findings are anticipated to make contributions to the refinement of EI theory and to provide a proven framework that can be carried out in instructional, organizational, and developmental settings.

Despite growing recognition of Emotional Intelligence (EI) as a critical determinant of personal effectiveness and social adaptability, significant ambiguity persists regarding its dimensional structure and measurement consistency across contexts (Mayer et al., 2004; Petrides & Furnham, 2000). Existing studies propose diverse models and factor structures, often resulting in conceptual overlap among core components such as self-awareness, emotion management, and empathy. Many EI assessment instruments suffer from inadequate empirical validation and cross-sample reliability, undermining their construct validity (Mishra et al., 2025). Consequently, there exists a pressing need to empirically delineate EI's underlying factors using robust multivariate techniques like Exploratory Factor Analysis (EFA) and Structural Equation Modeling (SEM).

While theoretical models affirm EI's multidimensional nature (Salovey & Mayer, 1990; Goleman, 2001), empirical validation frequently falters due to methodological limitations or contextual variations. Developing a validated model that accurately represents interrelationships among core EI dimensions—self-awareness, emotion management, and empathy—remains essential for theoretical clarity and practical application across educational, organizational, and developmental settings (Mishra et al., 2025). This study addresses this empirical gap by identifying EI's factor structure and validating dimensional interrelationships.

Employing EFA and SEM, this research establishes a validated EI framework emphasizing self-awareness, emotion management, and empathy, enhancing construct validity and measurement reliability (Mayer et al., 2004). It bridges the persistent gap between conceptual models and empirical evidence, strengthening EI's theoretical foundation (Petrides & Furnham, 2000).

The validated model informs targeted interventions, training programs, and assessment tools for EI enhancement, proven to improve leadership effectiveness, interpersonal relationships, and psychological well-being (Goleman, 1998; Salovey & Mayer, 1990). In organizational contexts, validated EI measures support talent optimization and productivity enhancement (Maskey & Mishra, 2018; Mishra et al., 2025).

Research Objectives

- To identify and validate the underlying factor structure of Emotional Intelligence through Exploratory Factor Analysis and Structural Equation Modeling.
- To assess the reliability, validity, and interrelationships among the key

dimensions of Emotional Intelligence—Self-Awareness, Managing Emotions, and Empathy—within the proposed model.

Methodology

The present study adopted a descriptive survey research design to analyze the level of emotional intelligence among higher secondary students within the Kottayam district. This design was considered appropriate as it allows the systematic series of data to explain and interpret current situations and characteristics within a defined population (Kumar, K. S., 2025). The study sought to apprehend students' capacity to understand, control, and make use of feelings successfully inside their academic and social environments. Emotional intelligence turned into measured using an adapted version of the NHS leadership Toolkit for Emotional Intelligence from the "leading across London" framework. From the authentic 50-item questionnaire, 15 items were selectively chosen and categorized into 3 components that represent different levels of emotional competence.

The target population comprised higher secondary students enrolled in both aided and unaided schools across city and rural regions of Kottayam. Considering the whole population length was now not exactly regarded, the sample length become determined using the standard method for sample size estimation, taking into account the desired confidence level, estimated proportion, and margin of errors (Kothari, 2014). A stratified random sampling approach turned into hired to ensure adequate representation across key demographic categories which includes gender, type of institution, and class stage (Plus One and Plus two). Data were accrued through a structured questionnaire administered directly to the respondents. To ensure reliability and validity, Exploratory factor analysis (EFA) was conducted for construct validation, and internal consistency changed into measured the use of Cronbach's alpha. The results validated satisfactory reliability, with Self awareness ($\alpha = 0.854$), managing emotions ($\alpha = 0.853$), and Empathy ($\alpha = 0.818$), yielding an overall reliability coefficient of 0.828. The evaluation and interpretation of the data involved the application of appropriate statistical techniques to identify relationships, trends, and patterns among the variables under study. This comprehensive methodological approach ensured that the findings were both reliable and generalizable, offering meaningful insights into the emotional and psychological dimensions of higher secondary students within the educational context of Kottayam.

Results and Discussion

Exploratory Factor Analysis

Exploratory Factor Analysis (EFA) was used to examine the underlying structure of the scale and to ensure that the selected items accurately represented the intended constructs. The analysis revealed a clear and interpretable factor structure corresponding to the three dimensions (Self Awareness (SA), Managing Emotions(ME) and Empathy(EM) which collectively accounted for a substantial proportion of the total variance. All factor loadings exceeded the acceptable threshold of 0.50, indicating strong correlations between individual items and their respective latent constructs (Hair et al., 2019). The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity confirmed the suitability of the data for factor analysis, validating the internal structure of the instrument. The EFA findings, supported by high Cronbach's alpha coefficients (ranging from 0.818 to 0.854), demonstrated that the developed tool possessed strong psychometric properties, thereby establishing its reliability and construct validity for assessing emotional and psychological competencies among higher secondary students in Kottayam.

Table 1

Result of Reliability Analysis for SA, ME, EM Factors

Factors	No. of Attributes	Cronbach's alpha
Self Awareness(SA)	5	0.854
Managing Emotions(ME)	5	0.853
Empathy(EM)	5	0.818
	Significance	0.828
	No. of Items	15

Table 2 offers insights into the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test. The KMO, which ranges from 0 to 1, serves as an indicator of suitability, with higher values denoting better suitability. Ideally, this value should surpass 0.7. According to Kaiser's classification, a KMO measure falling between 0.9 and 1.0 is considered marvelous, 0.8 to 0.9 is deemed meritorious, 0.7 to 0.8 is categorized as middling, 0.6 to 0.7 is termed mediocre, and 0.5 to 0.6 is regarded as miserable (Fabrigar, Leandre R, 2012). In the context of respondents' perceptions,

Table 2

Kaiser-Meyer-Olkin (KMO) and Bartlett's test- Emotional Intelligence

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.816
Bartlett's test of Sphericity	Approx. Chi-square	2639.179
	Degrees of freedom	78
	Significance	0.000

Table 2 reveals a Kaiser-Meyer-Olkin measure of sampling adequacy (MSA) at 0.816, indicating a commendable level of suitability. Additionally, Bartlett's test of sphericity is statistically significant [Chi-square X^2 (78) = 2639.179 $p<0.024$], confirming the appropriateness of the data for factor analysis.

Table 3 exhibits the rotated factor loadings, reflecting the correlations between variables and factors, with these correlations ranging from -1 to +1. A favorable factor solution entails a specific variable having a substantial loading on one factor while displaying low loadings on all other factors in the rotated factor matrix (Ajai GS, Sanjaya GS, 2006). Analysis of Table 3 reveals that all emotional intelligence indicator items showcase factor loadings exceeding the 0.50 threshold. This suggests that further analysis can be undertaken with confidence, as the indicators display robust associations with their corresponding factors.

Table 3

Rotated Component Matrixa- Emotional Intelligence

Item	Statement	Components		
		1	2	2
EM1	I realise immediately when I lose my temper	0.910		
EM2	I know when I am happy	0.899		
EM4	When I am being 'emotional' I am aware of this	0.883		
EM5	When I feel anxious I usually can account for the reason(s)	0.838		

Item	Statement	Components		
		1	2	2
EM3	I usually recognize when I am stressed	0.741		
EM7	I do not wear my 'heart on my sleeve'		0.942	
EM6	I can 'reframe' bad situations quickly		0.907	
EM9	I rarely 'fly off the handle' at other people		0.887	
EM8	Others can rarely tell what kind of mood I am in		0.823	
EM14	I can tell if a team of people are not getting along with each other			0.921
EM11	I am always able to see things from the other person's viewpoint			0.890
EM12	I am excellent at empathizing with someone else's problem			0.852
EM13	I can tell if someone is not happy with me			0.835

Note. Rotation Method: Varimax with Kaiser Normalization, Rotation converged in 5 iterations.

Structural Equation Modelling (SEM): Model Fit Assessment

To evaluate the appropriateness of the model concerning the collected samples, Structural Equation Modeling (SEM) was employed. The initial analysis focused on assessing the reliability and validity of the survey instrument through a measurement model, as outlined in prior research (Anderson JG, Gerbing DW, 1988). Subsequently, the structural model was scrutinized using AMOS version 21. SEM is a statistical technique utilized to assess the congruence between collected data and a theoretical model (Kaplan, David E, 2009). The evaluation of the model places particular emphasis on various statistical indicators, including the Chi-square to degrees of freedom ratio (χ^2/df), Comparative Fit Index (CFI), Goodness-of-Fit Index (GFI), Adjusted Goodness-of-Fit Index (AGFI), Tucker-Lewis Index (TLI), Incremental Fit Index (IFI), Root Mean Square Error of Approximation (RMSEA), and Parsimony Goodness-of-Fit Index (PGFI)

Based on the results, a Chi-square statistic with a p-value of 0.024 suggests a satisfactory fit for the model. However, Schumaker and Lomax (1996) argue that in samples of 200 or more, the Chi-Square statistics may be influenced to indicate a significant probability level (p=0.00). Additionally, Marsh and Hocevar (1985) propose that if the CMIN/DF exceeds five, the model can still be considered acceptable. Consequently, further scrutiny of the model's goodness-of-fit is warranted.To delve deeper into the assessment of model fit, standard measures such as the Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), Normed Fit Index (NFI), Incremental Fit Index (IFI), and Tucker Lewis Index (TLI) were employed. These goodness-of-fit measures are crucial for a comprehensive evaluation of the measurement model. The calculated values for these model fit indices obtained from AMOS structural modeling are presented in Table 4

Adhering to the criteria outlined by Gerbing and Anderson (1992), an acceptable model is characterized by an RMSEA of 0.08 or less, a CFI of 0.90 or higher, and an NFI of 0.90 or higher. To evaluate the alignment between the data and the proposed measurement model, a chi-square goodness-to-fit (GFI) test was conducted, where a probability equal to or greater than 0.9 signifies a satisfactory fit. In the current study, the GFI yielded a value of 0.955, surpassing the recommended threshold of 0.90. Additionally, other metrics demonstrated favourable results, with AGFI at 0.928, CFI at 0.991, TLI at 0.988, IFI at 0.991, and NFI at 0.971. The chi-square divided by degrees of freedom (χ2/df) was below 5, registering at 1.407, and the RMSEA was 0.040, indicating a commendable absolute fit of the model.

Table 4

Model Fit Indices- Emotional Intelligence

Good Fit	Results	Suggested Values	Model Fit Verification
Chi-square	78.801 (0.24) DF56	>0.05	Good Fit
Chi-square/degree of freedom (x2/d.f.)	1.407	≤ 5.0060	Good Fit
Comparative Fit index (CFI)	0.991	>0.9058	Good Fit
Goodness of Fit Index (GFI)	0.955	>0.9060	Good Fit
Adjusted Goodness of Fit Index (AGFI)	0.928	> 0.9061	Good Fit
Normated Fit Index (NFI)	0.971	≥ 0.9058	Good Fit
Incremental Fit Index (IFI)	0.991	Approaches 1	Good Fit
Tucker Lewis Index (TLI)	0.988	≥ 0.9060	Good Fit
Root mean square error of approximation (RMSEA)	0.040	< 0.0860	Good Fit
Parsimony goodness-of-fit index (PGFI)	0.588	>0.5	Good Fit
Parsimony-Adjusted Measures Index(PNFI)	0.697	>0.5	Good Fit
Parsimony Comparative Fit Index (PCFI)	0.712	>0.5	Good Fit

Hypothesis

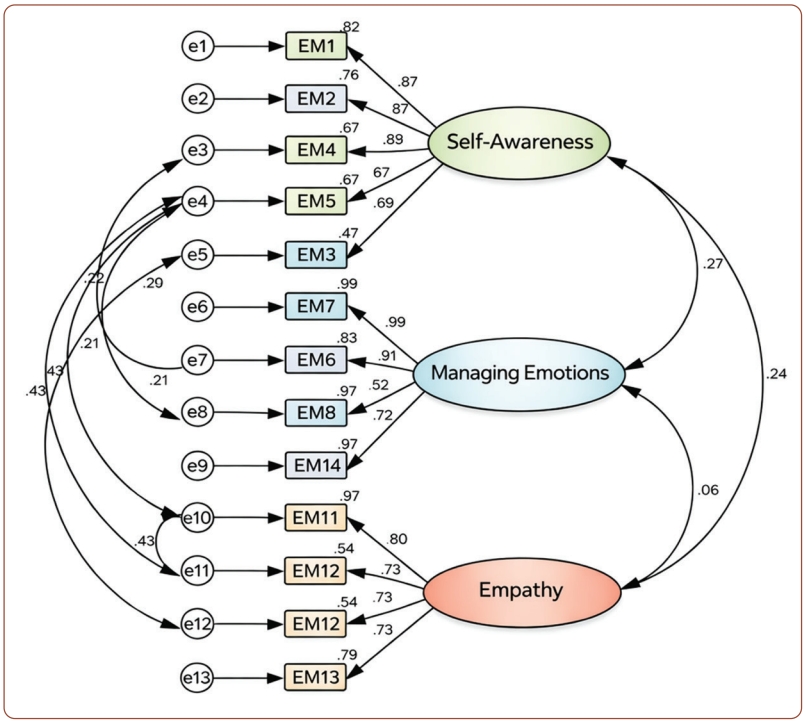
- Null hypothesis (H0): The hypothesized model has a good fit.
- Alternate hypothesis (H1): The hypothesized model does not have a good fit.

According to the information in Table 4, it is evident that the values of all items surpass the recommended threshold of 0.5 as suggested by Hair et al. (2006).

Bollen (1989) asserts that a higher probability associated with the chi-square test indicates a closer fit between the hypothesized model and an ideal fit. In our study, the null hypothesis (H0) proposing a three-factor structure emotional intelligence model (as illustrated in Figure 1) was tested. The chi-square test yielded a value of 78.801 with 56 degrees of freedom and a probability greater than 0.05 ($p > 0.24$). This outcome suggests that the fit of the data to the hypothesized model is entirely satisfactory. As a result, further interpretation of this model is justified, considering goodness-of-fit measures.

Figure 1

Emotional Intelligence Model



Barbara (2009) emphasizes the well-acknowledged challenges associated with the Likelihood Ratio Test's sensitivity to sample size and its dependence on the chi-square distribution, assuming the correctness of the population (i.e., H0 is accurate). Jöreskog and Sörbom (1993) elaborate that the chi-square statistic, denoted as (N-1) F min, tends to be significant when the model is invalid, particularly in scenarios with a large sample size. Responding to the limitations of the chi-square test, researchers, as noted by Barbara (2009), have introduced practical goodness-of-fit indices.Hair et al. (1998) proposed the minimum discrepancy/ degrees of freedom fit statistic (CMIN/DF), also known as chi-square/degrees of freedom, with a recommended threshold of ≤ 5. According to the values presented in Table 4, the chi-square/degrees of freedom value is 1.407, which falls below the widely accepted cut off value of ≤ 5

Table 5

Regression Weights: (Group number 1 - Default Model)

Indicator	Latent Variable	Estimate	S.E.	C.R.	P
EM1	Self Awareness	1			
EM2	Self Awareness	0.957	0.047	20.378	***
EM4	Self Awareness	0.97	0.045	21.738	***
EM5	Self Awareness	0.906	0.045	19.972	***
EM3	Self Awareness	0.734	0.055	13.454	***

Indicator	Latent Variable	Estimate	S.E.	C.R.	P
EM7	Managing Emotions	1			
EM6	Managing Emotions	0.931	0.032	29.316	***
EM9	Managing Emotions	0.844	0.039	21.559	***
EM8	Managing Emotions	0.714	0.046	15.517	***
EM14	Empathy	1			
EM11	Empathy	0.834	0.043	19.36	***
EM12	Empathy	0.755	0.047	15.97	***
EM13	Empathy	0.796	0.045	17.508	***

Table 5 presents unstandardized coefficients along with their corresponding test statistics. The unstandardized regression coefficient signifies the degree of change in the dependent or mediating variable for each one-unit change in the predicting variable. In Table 5, details such as the unstandardized estimate (S.E. or standard error) and the estimate divided by the standard error (C.R. or Critical Ratio) are provided. The P column displays the probability value associated with the null hypothesis, which asserts that the test is zero. This table is crucial for understanding the relationships and significance levels of the variables analyzed in the study.

Level of Significance for Regression Weight

The probability of obtaining a critical ratio as substantial as 29.316 in absolute value is below 0.001. In simpler terms, this suggests that the regression weight for Factor Managing Emotions in predicting EM6 significantly differs from zero at the 0.001 level (two-tailed). Similarly, the likelihood of achieving a critical ratio as high as 21.738 in absolute value is less than 0.001. To phrase it differently, the regression weight for Factor Self Awareness in predicting EM4 is significantly different from zero at the 0.001 level (two-tailed). These statements hold ap

Table 6

Standardized Regression Weights: (Group Number 1 - Default Model)

S/N	Factor	Estimate
EM1	SelfAwareness	0.908
EM2	SelfAwareness	0.869
EM4	SelfAwareness	0.887
EM5	SelfAwareness	0.821
EM3	SelfAwareness	0.686
EM7	ManagingEmotions	0.985
EM6	ManagingEmotions	0.909
EM9	ManagingEmotions	0.832
EM8	ManagingEmotions	0.719
EM14	Empathy	0.986
EM11	Empathy	0.802
EM12	Empathy	0.733
EM13	Empathy	0.794

Table 6 displays the standardized estimates for the fitted model. Standardized estimates allow for the assessment of the relative contributions of each predictor variable to each outcome variable. These estimates offer insights into the strength and direction of the relationships in the model. Additionally, Figure 1 illustrates the structural model of the Emotional Intelligence, providing a visual representation of the relationships among the variables outlined in the study.

Given Nepal's evolving professional landscape, this study provides culturally relevant EI benchmarks for educational institutions and workplaces, supporting sustainable human capital development amid infrastructural and regulatory challenges (Mishra, 2018, 2019; Mishra & Aithal, 2021).

Conclusion

It is evident from the analysis that the overall methodological rigor, supported by EFA, reliability testing, and SEM, confirms that the three-factor emotional intelligence model—Self-Awareness, Managing Emotions, and Empathy—demonstrates strong psychometric validity and an excellent model fit. The reliability coefficients exceeded acceptable standards, all factor loadings were above the 0.50 threshold, and goodness-of-fit indices consistently surpassed recommended benchmarks, indicating that the instrument effectively captured the emotional and psychological competencies of higher secondary students in Kottayam. The SEM results further validated the structural integrity of the model, with significant regression weights and robust standardized estimates highlighting meaningful relationships among the constructs. Overall, the study provides a reliable and generalizable assessment framework, offering valuable insights into students' emotional intelligence and supporting future educational strategies aimed at enhancing emotional competence in academic settings.

References

Ajai, G. S., & Sanjaya, G. S. (2006). *Statistics for management.* Tata McGrawHill.

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended twostep approach. *Psychological Bulletin, 103*(3), 411–423. https://doi.org/10.1037/0033-2909.103.3.411

Barbara, M. B. (2009). *Structural equation modeling with AMOS: Basic concepts, applications, and programming* (2nd ed.). Routledge.

Bollen, K. A. (1989). *Structural equations with latent variables.* Wiley.

Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (2012). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods, 4*(3), 272–299.

Gerbing, D. W., & Anderson, J. C. (1992). Monte Carlo evaluations of goodnessoffit indices for structural equation models. *Sociological Methods & Research, 21*(2), 132–160. https://doi.org/10.1177/0049124192021002002

Goleman, D. (1998). *Working with emotional intelligence.* Bantam Books.

Goleman, D. (2001). Emotional intelligence: Perspectives on a theory of performance. In C. Cherniss & D. Goleman (Eds.), *The emotionally intelligent workplace* (pp. 27–44). JosseyBass.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (1998). *Multivariate data analysis* (5th ed.). PrenticeHall.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8th ed.). Cengage Learning.

Jöreskog, K. G., & Sörbom, D. (1993). *LISREL 8: Structural equation modeling with the SIMPLIS command language.* Scientific Software International.

Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika, 39*(1), 31–36.

Kaplan, D. (2009). *Structural equation modeling: Foundations and extensions* (2nd ed.). SAGE Publications.

Kothari, C. R. (2014). *Research methodology: Methods and techniques* (2nd ed.). New Age International Publishers.

Kumar, K. S. (2025). From daily wages to daily woes: Investigating financial literacy and spending habits of daily wage earners. *Apex Journal of Business and Management, 4*(2), 53–66.

Marsh, H. W., & Hocevar, D. (1985). Application of confirmatory factor analysis to the study of selfconcept: First and higherorder factor models and their invariance across groups. *Psychological Bulletin, 97*(3), 562–582. https://doi.org/10.1037/0033-2909.97.3.562

Maskey, A., & Mishra, A. K. (2018). Labor productivity assessment of armed police force Nepal building construction projects. *International Journal of Current Research, 10*(11), 75315–75324.

Mayer, J. D., Salovey, P., & Caruso, D. R. (2004). Emotional intelligence: Theory, findings, and implications. *Psychological Inquiry, 15*(3), 197–215.

Mishra, A. K. (2018). Sustainability and risk assessment of Salyankot water supply project in postearthquake scenario. *International Journal of Operations Management and Information Technology, 8*(1), 1–30.

Mishra, A. K. (2019). Development of building byelaws in Nepal. *Journal of Advanced Research in Construction and Urban Architecture, 4*(3&4), 17–29. https://doi.org/10.24321/2456.9925.201904

Mishra, A. K., Nirubarani, J., Radha, P., Priyadharshini, R., & Mishra, S. (2025). *Artificial and emotional intelligence for employee optimization across diverse settings.* Intellectuals' Book Palace. https://doi.org/10.5281/zenodo.14810072

Mishra, K., & Aithal, P. S. (2021). Factors and features influencing laptop users of Kathmandu, Nepal. *International Journal of Case Studies in Business, IT and Education* (*IJCSBE*), *5*(1), 132–142. https://doi.org/10.5281/zenodo.5110273

Petrides, K. V., & Furnham, A. (2000). On the dimensional structure of emotional intelligence. *Personality and Individual Differences, 29*(2), 313–320.

Salovey, P., & Mayer, J. D. (1990). Emotional intelligence. *Imagination, Cognition and Personality, 9*(3), 185–211.

Schumacker, R. E., & Lomax, R. G. (1996). *A beginner's guide to structural equation modeling.* Lawrence Erlbaum Associates.