Journal of International DBA Studies (JIDS)
Vol. 1 No. 001 (2025) https://eaj.ebujournals.lu/index.php/JIDS/index

Impact of Mentor's Adaptive Leadership Style on Mentees' Overall Performance in Indian Academia Operating in a Hybrid Mode: An ADKAR Model Perspective with Artificial Intelligence Integration

by
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Abstract

Recent accomplishments in the field of artificial intelligence might reform the efforts of academia and instigate significant dilemmas in the arena of mentorship and leadership. In this research, an attempt is made to fill the gap between AI, the ADKAR model and the hybrid education frameworks which can be studied and analyzed to evaluate the impact of mentees in Indian academia. The study focuses on the leading management institutions in Kolkata undergoing such strategic change and examines the adaptive leadership style of mentors augmented with AI tools and their influencing positive organizational transformation and academic outputs. The study makes use of mixed methods, where quantitative data is collected through surveys with 214 MBA students and research scholars and qualitative insights drawn from seven semi-structured interviews from the mentees. This study explores multiple regression, structural equation modelling, identify important independent variables and check their impact on the dependent variable. Thematic analysis on the other hand describes mentees' experiences. The results indicate the importance of Adaptive leadership competencies (empathy, emotional intelligence, motivation and personal resilience) in mentorship behaviors and ADKAR components. The research underscores AI's potential for optimizing mentorship programs, fostering mentees' adaptability and epistemic agency, and augmenting their academic success through hybrid operational modalities. Given the changing backdrop of Indian academia for educational leaders, the study drives home the point that improving both leadership development and new means of education may be the best way forward.

Keywords: adaptable leadership, mentor-mentee, AI, hybrid education, ADKAR Model, performance

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Introduction

The dynamic field of mentorship is increasingly being challenged, one on which growth has been built. There is a compelling need to compliment the traditional model of teaching with the use of digital technologies in various academic institutions across the globe, with a hybrid operational model, and the value of effective mentorship provided by the leadership model cannot be undervalued. This is not to say that mentorship does not include guidance, but in that sense, mentorship has undergone transformation from a role of guidance to one of adaptability in today's changing academic environment. This study intends to show how the mentoring adaptive leader has grown and whether the mentor's adaptive leadership can be made competent enough to make mentees resilient and self-driven in the midst of uncertainty. ADKAR model (Awareness, Desire, Knowledge, Ability and Reinforcement) has proven to be the perfect lens in helping mentees to adopt change in hybrid academia. Yet, how do these elements influence the performance of an experiment? The adaptive mentorship that the students receive provides them the experience to be adaptive, collaborative, and critical thinkers, and everything that it will take for them to be successful in life.

Using the second layer, AI Integration transforms the idea of mentorship, offering insight in a very personalized way, real time feedback, and better manpower relationships into a more effective engagement in a platform between the run-of-the mill and technology-focused learning. Briefly, these ideas will be expounded in order to set the scene for further analysis. Mentorship is an avenue of getting adaptive leadership because mentors should guide the mentees through frequently fluctuating and unknown academic environments. The mentors for such hybrid training in the Indian academia, which is a mix of the online and offline modes, should be flexible, resilient and problem solvers.

The ADKAR Model fits well into the management of change in the hybrid academic situation. In particular, it gives a systematic perspective on how mentors can assist mentees in behavioral and cognitive adaptations to pursue success in the virtual as well as physical learning environments. Mentees performance is due to an ability of the Mentor to enhance adaptability and emotional intelligence as well as skill development. First, this work examines the effects of mentorship on mentees particularly on their engagement, critical thinking and professional growth through the ADKAR model and adaptive leadership. The study intends to check the result of integrating AI with Mentoring's revolutionary role in the field of mentoring through personalization of the learning experience, utilization of data to provide feedback, and enabling the mentorship relationship in the hybrid academia. It may enable mentoring to be made effective real-time, in the form of adaptive learning paths and predictive analytics, effective and responsive to each mentee. A study of top tier business schools in Kolkata (India) that are reputed for having academic rigour and are as of now being converted into a state of internationalization is being done in this study. Both online and digital tools would pertain to this. Eventually, the aim is to make the unique academic experience stimulating to embrace advanced technology. This change in the paradigm focuses on mentoring the mentors who have to take charge and change their leadership styles in their communication with mentees to attain academic success.

This study explores the relationships between mentorship, adaptive leadership and organizational transformation with the paradigm of hybrid education by means of the ADKAR model of change management and the tools of AI. The implementation of AI helps with awareness of fixed time, sharing of knowledge, as well as reinforcement — factors that contribute to fighting against difficulties in hybrid education. In this Study, the researcher tries to decode the impact of these adaptive tactics on the performance of mentees which can serve as a guide to educational foundation and innovation.

Moreover, this investigation explores beyond the four walls of the classroom by examining programs such as exchange and creative curricular program for developing global consciousness, empathy and experiential learning. This study also takes on more general challenges and opportunities for academia as it moves toward the digital age by studying mentorship practices. Now a question may arise, why Hybrid Mode of Academia is taken into consideration? To address this, it can be said that in the Indian academia, particularly in management education, the hybrid model of learning (both online and offline) has become a popular trend for it allows higher flexibility and accessibility. The *key features are:* altering learning experiences by combining teaching activities in a classroom and added online modules that boost the interaction and provide self-paced learning; AI driven analytics, virtual simulations form a major part curriculum and students are also taught via case based learning; industry-academia collaboration, online guest lectures, corporate mentorships, and live projects help the participants to bridge the gap between theory and the real word; and International faculty engagements and online certification. The platform is global hence faculty from across the globe can engage with their learners and learners everywhere should also be able to obtain certifications irrespective of their geography.

Through a comprehensive mixed methods approach, this study conducted in the leading management institutions located in Kolkata, makes a novel contribution of describing how adaptable mentoring strategies can be designed to improve mentees' performance in the work environment and implicates new dimensions of the interplay between transformational leadership and organization transformation that are relevant to educational leadership theory and practice. It may offer a roadmap with the prescribed model to the academic institutions of India of how it can achieve excellence in the hybrid operational frameworks.

Literature Review

Mentorship in Academic Settings

Mentorship in academic context has recently been a matter of much research. Several aspects of mentor-mentee relationships and how these relationships impact individuals' growth in education and professional sector have been explored by scholars. Within this specific context, contemporary literary works are combined in supporting the understanding of the value of mentorship. In Liao, Y., Wayne, S. J., and Rousseau D. M. (2021), corporate mentoring relationships have been comprehensively examined with regard to how individual, dyadic, and environmental factors affect the effectiveness and consequences of mentoring relationships. By studying the interactions among the

multiple levels of analysis, the study offers unique insights as to the intricacies of the mentorship transaction and its repercussions on organizational performance. In their presentation, Allen, T. D., Eby, L. T. and Lentz, E. (2020) provide a thorough and extensive review of mentoring from various stakeholders' perspectives, including theory, empirical evidence and practice. The fields covered by the handbook are wide and varied including mentorship in academia, diversity and inclusion in mentoring relationships and technology in facilitating mentoring interactions. It has access to the expertise of luminaries in the field. Kram, K.E. (2019) analyzes the idea of strategic partnerships within the professional realm by emphasizing the value of forming a diversified group of mentors, sponsors and peers to assist in the advancement of career and personal growth. The book is a product of a diligent research and real-life illustrations, and provides ample practical strategies for building and utilizing strategic connections to gain professional success. These studies add a useful insight into the 21st century's notion of mentoring and provide practical steps to achieving strategic relationships.

Adaptive Leadership in Education

Adaptive leadership has, unquestionably, become the fundamental framework to understand the problems that educational institutions face in the 21st century and the strategic way to deal with these problems. Currently, adaptive leadership is believed to be the most effective approach for dealing with uncertainty, encouraging innovation and organizational responsiveness to improve resilience in educational contexts. R. A. Heifetz, A. Grashow and M. Linsky (2021) offer insights into adaptive leadership which must be practical and valuable. The tools it provides are comprehensive, and the set of tools that the leader navigating complex adaptive issues needs to know. It presents real life examples and case studies from different sectors (for example education) to offer practical ways to promote adaptive capability, and facilitate on behalf of organizational change. In M. Fullan (2020), the author analyzes the infrastructure of educational transformation in 21st century including the importance of adaptive leadership in tackling the dynamic issues that educational institutions encounter. Fullan emphasizes that adaptive leadership holds a crucial role in sustaining educational reform and increasing student achievements through case studies and examples drawn from a number of countries. These are resources that will assist educational leaders in their efforts to find ways of performing their jobs for the twenty-first century—including tools, methods, theoretical frameworks, and, importantly, case studies of strategies that effective leaders are using at the onset of an enthrallingly complex new century.

Mentors' Adaptive Leadership

Leadership in academia is instrumental in assisting mentees to navigate through an uncertain educational landscape palleted with varying educational mores. According to Heifetz's (1994) Adaptive Leadership Theory, effective leaders do not offer answer to a problem, instead they enable followers to address it. According to Northouse (2019), adaptive leaders are emotionally intelligent, problem solving agile, and also able to generate self -sufficiency in their mentees. Growth oriented mentoring, which stresses on adaptability, is necessary for the mentees to be resilient and innovative (Dweck, 2006). Adaptive mentorship, as an opportunity to develop one's professional

preparedness as well as to facilitate engagement, knowledge transfer, in the era of hybrid learning, where virtual and physical interactions, define the educational experience, is a useful practice (Bass & Riggio, 2006; Yukl, 2013). Using this integration to describe how adaptive leadership offers personalized and personalized adaptive solutions that meet mentee needs.

Hybrid Modes of Education in Indian Academia

Hybrid mode has become indispensable in Indian academia mostly during and after the Covid 19 pandemic. The research done by Bali. M. (2020) inspects the face of developing methodologies in the area of education and learning, concentrating on the kind called digital as well as hybrid kind, and observes the negative effects for the examinations of its human rights pertaining to the continuing research study on how such examinations can be done. Using case studies and examples from Indian higher education, the book analyzes innovative teaching methods, evaluation tactics and methods to include students into hybrid learning environments. In their study, Sinha, A. and Kumar, S. (2021) dealt with a comprehensive examination of hybrid learning pattern in higher education especially from an India-centred perspective. The implementation of hybrid learning models is considered by the authors to be complicated and offers many opportunities to overcome the difficulties with the integration of technology, creative approaches to teaching, and students' involvement. Effective tactics and exemplary methods for improving student involvement in hybrid learning setting are provided by Sharma, R., and Sharma, R. (2019). As Indian academics, the authors provide the practical suggestions for educators and educational institutions in order to make learning effective for students in the hybrid environment. These are wonderful tools for information to the educational stakeholders in India struggling with the hybrid education complexity. Their insights come out of academic research, but are presented with practical recommendations.

Application of the ADKAR Model Perspective

In the researches on the educational institutions, Smith, J., and Johnson, M., (2021) have given practical ideas on how to set-up hybrid learning models, through the ADKAR model. The authors supply an elaborate roadmap on how to manage change in the educational leaders. They show case studies and examples of creating awareness and desire for change as well as reinforcing new behaviors and practices to illustrate each phase of the process. Pandey, S., and Tiwari, R. (2022) in their paper entitled 'The Importance of ADKAR model of change management in Higher education: a case of transitioning to Hybrid learning delivery' highlights the importance of ADKAR model in change management that has been identified in the context of the transition of Hybrid learning delivery in Higher education (HE). It discusses the potential of ADKAR model in helping educational institutions overcome change barriers including resistance to new technologies among the employees, faculty training requirement and strategies for involving students. Another study is also that conducted by Lopez, M., and Rivera, A. (2020) that considers how the ADKAR model can be used in an educational setting. In the article, the authors attempt to find out how the ADKAR model has been used in raising awareness, desire and competency of faculty and staff by interviewing educational

leaders and stakeholders. This, in turn, facilitates the effective implementation of hybrid learning initiatives. These resources are necessary for educational leaders who want to lead the change and to ensure that resilience of their organization in changing conditions of education ranging from practical guidelines to empirical studies.

Mentorship With Artificial Intelligence Integration

Artificial Intelligence in education has a great role and it is also now vigorously changing the dynamics of mentorship. According to Luckin (2017), AI mentorigination aids in creating individualized learning experiences by employing adaptive learning platform, automated feedback and leading analytic. According to Siemens (2019), by introducing the AI based education tools, mentors will not be distracted by repetitive tasks — administration or tracking of the progress – and will be free to focus on the higher order cognitive development task. According to Daniel's (2021) research, AI appropriate mentoring systems facilitate the emanation of self-regulated emotions which make it possible for the mentees to have a prerequisite control of their educational affairs. Moreover, AI contributes to improvement of collaboration in the hybrid settings: it optimizes the collaboration between partners in the mentoring process across the digital platforms, as the research of Zawacki Ruter et al. (2019) found. These studies examine how AI is utilized in the integration process by providing AI as act of mentorship in order to determine how it affects mentee performance, mentor effectiveness, and overall academic outcomes in Indian management institutions.

Mentees' Overall Performance

There is more to the mentee's performance in academia than just academic grades; the mentee grows in cognitions, emotions and behavior. Tinto (2012) asserts that engagement, motivation and institutional support lead to successful students and according to Astin's (1999) Input-Environment-Output Model, mentorship is the key factor in determining engagement, motivation and other institutional attributes. Studies in hybrid learning by Garrison & Vaughan (2008) have shown the blended models of mentoring that complement virtual and in person mentorship have positive effects on mentee's self-efficacy as well as knowledge retention and problem solving skills. According to Brown (2021), structured mentoring, used alongside ADKAR change management principles as well as augmented learning via AI enhances mentee professional readiness and flexibility.

Research Gap

Despite the extensive research that has been conducted on mentorship, adaptive leadership, and change management among Indian academia, there exists a striking absence of understanding regarding the impact of using AI tools along with the ADKAR model and mentees' academic performance in hybrid education. Although individual studies explored these elements in isolation, no work has comprehensively examined their joint effect. By investigating the relationship between adaptive leadership styles of mentors, AI tools, and the ADKAR framework as introduced and how these elements cooperate to enhance mentee outcomes in hybrid learning environments, this study

presents new perspectives for optimizing mentorship and promoting successful academic outcomes.

Problem Statement

As the reputed management institutions of Kolkata navigate the shift to hybrid modes of operation, mentees have to adopt new technologies while managing to keep up the grades. Although mentorship is integral to assisting mentees in navigating this process of transformation, little is known about the impact of mentors' adaptive leadership paired with the ADKAR model and AI tools on mentees' performance in hybrid learning contexts.

Objectives

This study seeks to**:**

- Identify the most significant factors of the Mentor's adaptive leadership style affecting mentees' overall performance and to investigate their influence level on the same in the selected management institutes operating in hybrid mode;
- Point out the most substantial factors of the ADKAR model of change management affecting mentees' overall performance and to investigate their influence level on the same in the business schools functioning in a hybrid manner;
- Find out most significant AI-based solutions provided by the mentors influencing mentees' performance;
- Check whether there is any significant difference in mentees' overall performance scores between different demographic groups (age group, gender, and educational status) in the Indian Management Institution undergoing organizational change; and
- Establish a prescribed model for the mentor's adaptive leadership style to enhance Mentees' overall performance in the Indian Management School undergoing organizational change.

Hypotheses

Set 1:

H_{01}: None of the factors of the Mentors' adaptive leadership style positively impact mentees' overall performance in this Indian academic institution undergoing organizational change.

H_{A1}: The factors of the Mentors' adaptive leadership style positively impact mentees' overall performance in this Indian academic institution undergoing organizational change.

Set 2:

H_{02}: None of the factors of the ADKAR model of change has a positive impact on mentees' overall performance in this Indian academic institution undergoing organizational change.

H_{A2}: The factors of the ADKAR change model positively impact mentees' overall performance in this Indian academic institution undergoing organizational change.

Set 3:

H_{03}: None of the AI tools positively impact mentees' overall performance in this Indian academic institution undergoing organizational change.

H_{A4}: The AI tools positively impact mentees' overall performance in this Indian academic institution undergoing organizational change

Set 4:

H_{04}: There is no significant difference in mentees' overall performance scores between different demographic groups (age group, gender, educational status, income group, i.e., family income) in this Indian academic institution undergoing organizational change.

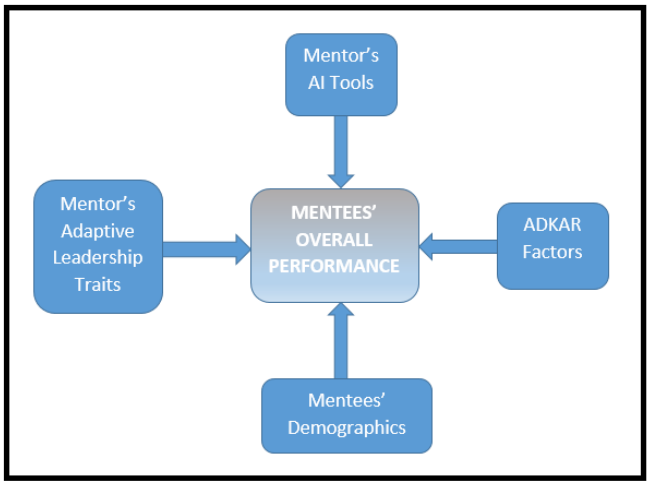
H_{A4}: There is a significant difference in mentees' overall performance scores between different demographic groups (age group, gender, educational status, income group, i.e., family income) in this Indian academic institution undergoing organizational change.

Research Design and Methodology

Research Framework

Figure 1

Conceptual Model



Source: Author

This study proposes a mixed-method approach to examine the elements that affect mentees' performance in Indian academia, which is operating in a hybrid mode. It focuses on the mentor's adaptive leadership style and the ADKAR model with AI integration.

Quantitative Phase

- Survey Design: A systematic questionnaire is framed to gather quantitative data on the mentor's leadership style and the ADKAR model components as well as AI tools affecting mentees' overall performance.

- Participant Selection: Mentors and mentees from different academic programs of the institutes are chosen applying stratified sampling to take part in the survey.
- Data Collection: The survey is conducted both in physical and virtual mode to the 214 participants (regular MBA students, Executive MBA students, and research scholars) guaranteeing the anonymity and confidentiality of their responses.
- Data Analysis: Quantitative data from the survey is analyzed using statistical methods like principle component analysis, multiple regression analysis, structural equation modelling, Anova to determine the key variables of the mentor's leadership style and the ADKAR model as well as AI tools that impact the overall performance of mentees.
- A weighted averaging approach calculates the *overall performance of mentees*, which means different performance parameters have different weightage when it comes to the overall development of mentees, thus little impact will be negative on the early stage of the mentee. In this study, academic and research excellence carries a weight of 50%, as that covers their theoretical and practical knowledge, while leadership and managerial skills carry 30%, as they play an important role in developing future managers. Analytical skills to understand and evaluate, which is necessary for real-world application, carry 20%. All of these parameters are scored individually against certain criteria, and the overall performance score is simply calculated by multiplying the score in each area by its weight. Through this, it gives a rounded, non-biased evaluation as a whole and allows mentors/ institutions to best place you along with other mentees against their desired goal lines, which can be specific to the role you might be applying for, or academically.

Explanation and Justification for Selected Techniques

Principal Component Analysis (PCA)

The data dimension can be reduced using PCA while still preserving the maximum variance. Identification of key factors (components) which highly influence the variance of mentees' emotional intelligence (EI) as well as mentor's adaptive leadership. It is then a question of variance maximization, so it does not assume latent constructs like factor analysis. Furthermore it is then ideally suited for an exploratory approach.

Kaiser-Meyer-Olkin (KMO) Test: Ensures sampling adequacy for factor analysis by measuring the proportion of variance shared among variables. A high KMO (>0.6) confirms that the dataset is suitable for dimension reduction techniques like PCA.

Multiple Regression Analysis (MRA)

The MRA was used to determine the relationship between independent variables (adaptative leadership, EI and ADKAR factors), on one hand, and the dependent variable (mentees' academic performance) on the other. It helps in measuring the prediction strength of each independent variable. Unlike simple regression, MRA allows multiple predictors to be used to further understand how different predictors, as a group, influence performance.

Structural Equation Modeling (SEM)

SEM permits testing of the complex relations among multiple variables, such as mediators and moderators, to understand them in depth. Most particularly, it can be applied to the validation of theoretical models when used in the social sciences. Multiple regression is less robust, because it allows testing of multiple relationships simultaneously and measurement error is accounted for in SEM. It is better applying both multiple regression and SEM for authentic results. *Fit Measures in SEM (e.g., CFI, RMSEA, SRMR, TLI):* Fit indices ensure the proposed model aligns well with empirical data, confirming that relationships between variables are statistically valid. CFI (>0.90) and RMSEA (<0.08) provide holistic model validation, ensuring structural robustness in complex models.

Analysis of Variance (ANOVA)

ANOVA tests whether there are significant differences between groups (for instance, differences in performance among institutions or styles of leadership). It allows for detecting group differences that are meaningful. One difference between ANOVA and t-tests is that it allows comparison of multiple groups at once, without increasing Type I error rates.

In selecting these techniques, it is ensured that robust and data driven insights on the impacts of adaptive leadership, EI and AI integration to mentees' academic performance using the techniques are achieved while addressing both exploratory and confirmatory research needs.

Qualitative Phase

- Semi-Structured Interviews: In-depth semi-structured interviews are carried out with a selected group of mentees to explore their experiences and thoughts on the mentor's leadership style and the ADKAR model with AI integration.
- Sampling: Purposeful sampling is employed to select participants who can offer varied and insightful viewpoints on the research issue. 7 mentees are selected.
- Data Collection: Interviews are recorded and transcribed to ensure proper recording of participants' responses.
- Data Analysis: Qualitative data from the interviews are evaluated using word cloud and thematic analysis to discover important themes connected to the mentor's adaptive leadership style and the ADKAR model with AI integration influencing mentees' overall performance.

Explanation and Justification for Selected Techniques

Word Cloud Analysis

A word cloud analysis is a form of visual text analysis that generates a word cloud with the most frequently used words in qualitative data such as open ended survey responses or respondents' feedback; thereby using visuals to create effortlessly noticeable themes and pattern in their responses. The use of Word clouds is significantly

different from traditional content analysis, since they allow instant insights into frequently occurring words, which are most valuable when the dataset contains large textual datasets and the manual coding is not required. They do not provide contextual meanings though and hence often used along with thematic analysis.

Thematic Analysis

Thematic analysis is positioning oneself to identify, analyze and report on patterns (themes) in qualitative data that can provide understanding of narrative responses, interview transcripts and open ended survey questions about mentorship, adaptive leadership and emotional intelligence. Thematic analysis is more flexible and the researcher can use existing theoretical frameworks such as the ADKAR model and yet search for emerging themes unlike grounded theory that focuses on theory development. Additionally, it is flexible, as compared to the rigid coding structure of content analysis and thus, is more appropriate for exploratory studies. Since these techniques aim at extracting qualitative insights from mentees' experiences, these are the techniques that were chosen in order to capture mentees' insights about emotional intelligence, adaptive leadership, and academic performance, alongside quantitative findings.

Data Analysis

Table 1

Demographic Details of the Respondents

Demographics	Distribution (n = 214)	Percentage (%)
Age Group		
18-27	98	45.79%
28-37	54	25.23%
38-47	45	21.03%
48-57	11	5.14%
58 and above	6	2.80%
Gender		
Male	103	48.13%
Female	111	51.87%
Other	0	0.00%
Educational Status		
Regular MBA Students	97	45.33%
Executive MBA Students	84	39.25%
Research Scholars	33	15.42%

Note. Sample stratification made by the author

The study participants exhibit a varied demographic distribution, encompassing different age groups, genders, and educational positions. The majority of participants in the study are between the ages of 18 and 27, making up roughly 45.79% of the overall sample. The next largest age group is between 28 and 37, which accounts for around

25.23%. The sample consists of individuals between the ages of 38 and 47, who make up 21.03% of the sample, and individuals between the ages of 48 and 57, who make up 5.14% of the sample. Additionally, individuals aged 58 and above account for around 2.80% of the sample. The study encompasses a near parity of male and female participants, with males accounting for 48.13% and females for 51.87% of the whole sample. Significantly, there are no participants who identify their gender as 'Other'. The majority of participants in the study own an MBA degree, accounting for roughly 45.33% of the sample. Following this, around 39.25% of participants hold an executive MBA. In addition, research scholars constitute around 15.42% of the entire sample.

Reliability Analysis (Appendix 1)

The output indicates the results of the reliability analysis, specifically Cronbach's alpha, which is a measure of internal consistency reliability. The items in the scale demonstrate exceptionally high internal consistency, as indicated by the very high values of Cronbach's alpha (0.978). Cronbach's alpha coefficient is a measure of how consistently items in a scale or test measure a single construct or concept. It ranges from 0 to 1, where higher values indicate greater internal consistency.

Factor Analysis

The KMO value of .764, measures assesses the adequacy of the sample size for conducting factor analysis. It compares the magnitudes of the observed correlation coefficients to the magnitudes of the partial correlation coefficients. A value of .764 is considered 'middling to good,' indicating that the sample size is fairly adequate for factor analysis. Bartlett's Test of Sphericity tests the null hypothesis that the correlation matrix is an identity matrix, which would indicate that all variables are orthogonal (i.e., uncorrelated) and factor analysis is inappropriate. Both the KMO measure and Bartlett's Test of Sphericity suggest that both support the feasibility of proceeding with factor analysis.

Each row in the table represents a component, which are the underlying constructs that explain the patterns of correlations among the observed variables (in this case, aspects of the mentor's adaptive leadership style). The factors extracted are –
Empathy (.886 loading): This factor is strongly defined by the mentor's empathetic behavior toward mentees. It is the most significant factor, explaining a large part of the variance in the data, suggesting that attention to empathy is a critical component of adaptive leadership in this context.

Table 2

Factor Analysis on Mentors' Adaptive Leadership Style

ADAPTIVE LEADERSHIP TRAITS	ROTATED COMPONENT	TOTAL VARIANCE EXPLAINED
Empathy	.886	73.870
Empowerment	.777	
Clear Vision	.833	
Emotional Intelligence	.873	
Constant Motivation	.768	
Clear Guidance	.684	
Organisational Justice	.135	
Future Needs	.318	
Collective Understanding	.243	
Accountability	.145	
Transparency	.231	
Organised Mentoring	.145	
Focusing Attention	-.062	

Note. SPSS Output for PCA on Mentors' Adaptive Leadership Style

Empowerment (.777 loading): This factor includes skills in empowering mentees. It is a significant trait but the exact percentage of variance it explains is not provided but it is likely substantial given the high factor loading.

Clear Vision (.833 loading): The ability of the mentor to provide a clear vision and direction. High loading here indicates that this is a strongly defining factor for adaptive leadership.

Emotional Intelligence (.873 loading): This represents the mentors' ability to apply their and mentees' emotions intelligently, which is crucial in a hybrid learning environment. This has a high loading, signifying its strong impact.

Constant Motivation (.768 loading): The mentor's role in motivating the mentees consistently is another significant factor, indicated by a fairly high loading.

Clear Guidance (.684 loading): Involves the mentor's ability to provide direct and actionable guidance, slightly less impactful but still a notable factor.

Organisational Justice (.135 loading), Future Needs (.318 loading), Collective Understanding (.243 loading), Accountability (.145 loading), Transparency (.231 loading), Organised Mentoring (.145 loading), Focusing Attention (-.062 loading) suggest that these factors are less central to the definition of adaptive leadership style in this

particular analysis or dataset. They do not strongly define any of the major components derived from the factor analysis and might be considered supplementary or less critical in the context of this specific study. The total variance explained is 73.870. The study highlights that individualized attention, change management, vision clarity, adaptability, and motivation are central to effective adaptive leadership in mentor-mentee relationships within a hybrid academic setting. Lower loadings on factors like innovative culture and accountability suggest that these might not be as crucial in the context of this study or might be overshadowed by the more dominant aspects of adaptive leadership style captured in other factors.

Table 3

Factor Analysis on the ADKAR Model

ADKAR COMPONENTS	ROTATED COMPONENT	TOTAL VARIANCE
Awareness	.722	67.615
Desire	.204	
Knowledge	.656	
Ability	.302	
Reinforcement	.612	

Note. SPSS Output for PCA on ADKAR Model

The KMO value of .743, measures assesses the adequacy of the sample size for conducting factor analysis. It compares the magnitudes of the observed correlation coefficients to the magnitudes of the partial correlation coefficients. A value of .743 is considered 'middling to good,' indicating that the sample size is fairly adequate for factor analysis. Bartlett's Test of Sphericity tests the null hypothesis that the correlation matrix is an identity matrix, which would indicate that all variables are orthogonal (i.e., uncorrelated) and factor analysis is inappropriate. Both the KMO measure and Bartlett's Test of Sphericity suggest that both support the feasibility of proceeding with factor analysis.

Rotated Component Matrix

It shows that the factors Awareness has a loading of 0.722, Desire has a loading of 0.204, Knowledge has a loading of 0.656, Ability has a loading of 0.302, and Reinforcement has a loading of 0.612.

Total Variance Explained

This represents the percentage of the total variance in the observed variables that is accounted for by the factors. Here the variance explained is 67.62%. This suggests that the factors associated are, explaining a significant portion of the total variance in the dataset. The factor loadings indicate which components are most strongly represented by each of the ADKAR model elements. The strong loadings for Awareness, Knowledge,

and Reinforcement suggest that these are key elements in explaining the behavior or outcomes modelled by the ADKAR framework in this analysis. Overall, the factor analysis seems to highlight the importance of Awareness, Knowledge, and Reinforcement in the ADKAR model as they exhibit stronger associations with the underlying factors. Desire and Ability, particularly Desire, might require further investigation to understand their roles or connections within the framework, given their lower loadings in this analysis.

Next, the significant factors identified by factor analyses are considered as independent variables in multiple regression analysis to check their impact on the Mentee's Overall Performance, the dependent variable.

The influence of the AI tools mentors show their use to enhance the overall performance of the mentees. Preliminary 6 AI tools viz. ChatGPT, Grammarly, Canvas LMS with AI plugins, Kahoot! with AI, MentorcliQ, and Otter.ai are taken into consideration to check their influence level.

Multiple Regression Analysis on AI Tools Usage by Mentors

$$Y = \beta_0 + 0.302X_1 + 0.204X_2 + 0.175X_3 + 0.311X_4 + 0.264X_5 + 0.188X_6 + \epsilon$$

Where:

- Y: Mentees' Overall Performance (Dependent Variable)
- β_0: Intercept (constant term)
- X_1: Canvas LMS with AI Plugins (Coefficient = 0.302)
- X_2: Kahoot! with AI (Coefficient = 0.204)
- X_3: MentorcliQ (Coefficient = 0.175)
- X_4: ChatGPT (Coefficient = 0.311)
- X_5: Grammarly (Coefficient = 0.264)
- X_6: Otter.ai (Coefficient = 0.188)
- ϵ: Error term

Now, let's check the significance level of the aforementioned AI Tools.

Table 4

Multiple Regression Analysis on Mentor's AI Tools Usage Influencing Mentees' Overall Performance

AI TOOLS	UNSTANDARDIZED B COEFFICIENTS	SIGNIFICANCE
Canvas LMS with AI plugins	.302	.021
Kahoot! with AI	.204	.003
MentorcliQ	.175	.004
ChatGPT	.311	.098
Grammarly	.264	.063
Otter.ai	.188	.076

Note. SPSS output

Explanation for Insignificance of ChatGPT, Grammerly and Otter.ai (p = 0.098, 0.063 and 0.076):

Statistical Interpretation According to the p-value: A value above 0.05 suggests that the relationship between the variables and the dependent factor (mentee performance) is not statistically significant, i.e., the observed effect may be attributed to chance. Possible reasons for insignificance may be contextual variability, measurement sensitivity and/ or moderating factors.

Hence, the regression equation is reframed as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3$$

Where:

- Y: Mentees' overall performance (dependent variable)
- X_1: Use of Canvas LMS with AI plugins
- X_2: Use of Kahoot! with AI
- X_3: Use of MentorcliQ
- β_0: Intercept (constant term, not provided in the table)
- $\beta_1, \beta_2, \beta_3$: Unstandardized B coefficients (provided in the table)

Substituting the coefficients from the table:

$$Y = \beta_0 + 0.302 X_1 + 0.204 X_2 + 0.175 X_3$$

After this stage, all influencing factors (mentor's adaptive leadership traits and ADKAR variables) revealed from factor analyses are considered independent variables to run a multiple regression all together to check their impact level on Mentees' overall performance.

Multiple Regression Analysis on Mentor's Adaptive Leadership Traits and ADKAR Components

Table 5

Multiple Regression Analysis on Mentor's Leadership ability and ADKAR model influencing Mentees' Overall Performance

ADAPTIVE LEADERSHIP TRAITS AND THE ADKAR COMPONENTS	UNSTANDARDIZED B COEFFICIENTS	SIGNIFICANCE
Awareness	.245	.012
Empathy	.172	.008
Knowledge	.285	.024
Empowerment	.084	.075
Reinforcement	.264	.031
Clear Vision	.143	.063
Emotional Intelligence	.372	.042
Constant Motivation	.216	.010
Clear Guidance	.325	.000

Note. SPSS output

Explanation for Insignificance of Empowerment and Clear Vision (p = 0.078 and 0.063): Statistical Interpretation According to the p-value: A value above 0.05 suggests that the relationship between the variables and the dependent factor (mentee performance) is not statistically significant, i.e., the observed effect may be attributed to chance. Possible reasons for insignificance may be contextual variability, measurement sensitivity and/ or moderating factors.

Hence multiple regression analyses show that of all the predictor variables included in the analysis-

- **Awareness**: The coefficient is 0.245, and the significance level is 0.012, indicating that Awareness has a statistically significant positive effect on Mentee's Overall Performance at the 0.05 significance level.
- **Empathy**: With a coefficient of 0.172 and a significance level of 0.008, Empathy also has a statistically significant positive effect on Mentee's Overall Performance.
- **Knowledge**: Knowledge has a coefficient of 0.285 and a significance level of 0.024, indicating a statistically significant positive relationship with Mentee's Overall Performance

- **Empowerment:** Although the coefficient is 0.084, the significance level is 0.075, which is greater than 0.05. This suggests that Empowerment may not have a statistically significant effect on Mentee's Overall Performance at the 0.05 significance level.
- **Reinforcement**: With a coefficient of 0.264 and a significance level of 0.031, Reinforcement has a statistically significant positive effect on Mentee's Overall Performance
- **Clear Vision**: The coefficient is 0.143, and the significance level is 0.063, which is greater than 0.05. This suggests that Clear Vision may not have a statistically significant effect on Mentee's Overall Performance at the 0.05 significance level.
- **Emotional Intelligence:** Emotional Intelligence has a coefficient of 0.372 and a significance level of 0.042, indicating a statistically significant positive relationship with Mentee's Overall Performance.
- **Constant Motivation**: With a coefficient of 0.216 and a significance level of 0.010, Constant Motivation has a statistically significant positive effect on Mentee's Overall Performance.
- **Clear Guidance**: Clear Guidance has the highest coefficient of 0.325 and a significance level of 0.000, indicating a highly statistically significant positive relationship with Mentee's Overall Performance.
- **ChatGPT :** Although the coefficient is 0.311, quite influencing, but the significance level of this AI tool is 0.098, that is greater than 0.05. This suggests that the use of ChatGPT by mentors may not have a statistically significant effect on Mentee's Overall Performance at the 0.05 significance level.
- **Canvas LMS with AI plugins:** With a coefficient of 0.302 and a significance level of 0.021, this AI tool has a statistically significant positive effect on Mentee's Overall Performance
- **Grammarly:** Moderately high coefficient 0.264, and the significance level is 0.063, that is greater than 0.05. This suggests that Grammarly may not have a statistically significant effect on Mentee's Overall Performance at the 0.05 significance level.
- **Kahoot! with AI:** This AI tool has a coefficient of 0.204 and a significance level of 0.003, indicating a statistically significant positive relationship with Mentee's Overall Performance.
- **MentorcliQ:** With a coefficient of 0.175 and a significance level of 0.004, this AI tool has a statistically significant positive effect on Mentee's Overall Performance.
- **Otter.ai:** This AI tool has the highest coefficient of 0.188 and a significance level of 0.076, that is greater than 0.05. This suggests that Otter.ai may not have a statistically positive relationship with Mentee's Overall Performance.

Overall, Awareness, Empathy, Knowledge, Reinforcement, Emotional Intelligence, Constant Motivation, and Clear Guidance are found to have statistically significant positive effects on Mentee's overall performance, while Empowerment and Clear Vision do not have statistically significant effects at the chosen significance level. Subsequently, Canvas LMS with AI plugins, *Kahoot! with AI*, and *MentorcliQ* have substantial positive impact on mentees' overall performance, whereas, surprisingly,

most famous ChatGPT, regularly used Grammarly and Otter.ai are not statistically significant to influence mentees' overall performance,

ANOVA

In this level, Analysis of Variance is used to check the third objective i.e. whether there's a significant difference in mentee's overall performance score between different demographic groups (age group, gender, Educational Status, Income group i.e., Family income) in this Indian academic institution undergoing organizational change.

Table 6

ANOVA on Demographic Variables

Demographics	Anova(F Stat)	Sig	Observation
Age Group	6.337	.035	There is impact
Gender	1.321	.013	There is impact
Educational Status	-	-	No impact

Note. SPSS output

This table appears to show the results of one-way ANOVAs (Analysis of Variance) conducted on mentees' overall performance, considering the factors of 3 demographics such as age, gender and Educational Status. Only for age and gender the researcher finds significance. In Here, two one-way ANOVAs (Analysis of Variance) are performed in relation to mentees' overall performance, considering the factors of age and gender. In other cases, the p-value (Sig.) is greater than the conventional significance level and the researcher fail to reject the null hypothesis. Therefore, based on Levene's test results, there is insufficient evidence to conclude that the variability of Mentees' overall performance differs significantly across the four groups or conditions. In other words, the assumption of homogeneity of variances is met, suggesting that the performance variability among mentees is similar across the different groups or conditions being compared.

ANOVA (F Statistic): The F statistic measures the ratio of variance between groups to variance within groups. *Age Group (6.337):* represents the F statistic for the factor of age. It indicates the extent to which performance varies between different age groups. A smaller F value suggests less variability in performance between age groups. Typically, if the p-value is less than the chosen significance level (commonly 0.05), the differences between age groups are considered statistically significant. The post hoc analysis displays that the comparison between the age group "38-47" and "58 and above" has a significant mean difference of -1.1644 with a p-value of 0.020. This suggests that there is a significant difference in "the mentee's overall performance score between individuals aged 38-47 and those aged 58 and above. On the other hand, the comparison between the age groups "38-47" and "48-57" does not have a significant mean difference (p-value = 0.254), suggesting that there is no significant difference in "mentee's overall performance score" scores between individuals aged 38-47 and those aged 48-57.

Overall, this analysis helps identify which specific age groups have significantly different " mentee's overall performance " scores, providing valuable insights into how age may influence the perception of the respondents.

Gender (1.321): This value represents the F statistic for the factor of gender. It indicates the extent to which performance varies between different genders. A larger F value suggests greater variability in performance between genders. The p-value associated with gender is 0.001, which is less than 0.05. This indicates that the differences in overall performance between genders are statistically significant at the conventional significance level. No post hoc analysis is conducted here but by looking at the graph, it is obvious that female mentees' performance is much better than that of the male.

Hypotheses Testing:

Set 1: From the multiple regression analysis**,** factors like *Empathy, Emotional Intelligence, Constant Motivation,* and *Clear Guidance* are significant (p-values of these IVs are less than .05). Hence, the null hypothesis is rejected and the alternative hypothesis is accepted i.e., 'The factors of the Mentors' adaptive leadership style have a significant impact on mentees' overall performance in this Indian academic institution undergoing organizational change.

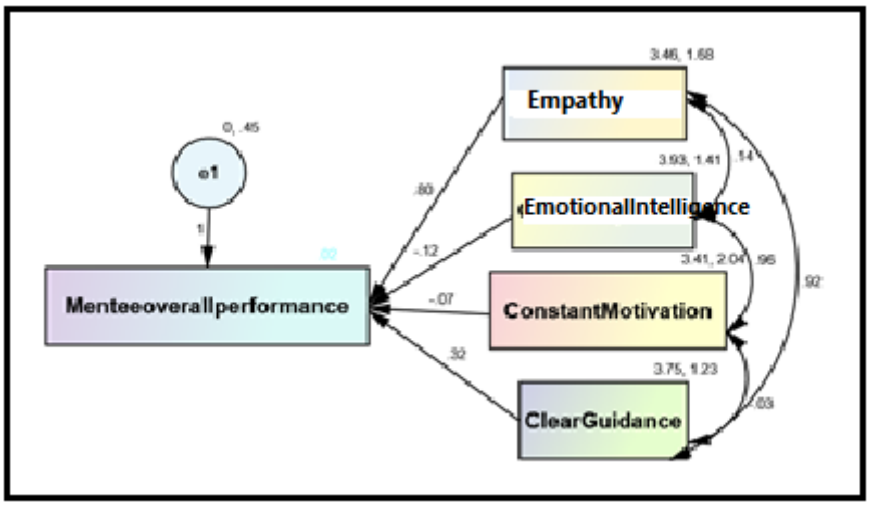
Set 2: From the multiple regression analysis**,** factors like *Awareness, Knowledge,* and *Reinforcement are* significant (p-values of these IVs are less than .05). Hence, the null hypothesis is rejected and the alternative hypothesis is accepted. i.e., 'The factors of the ADKAR model of change have a significant impact on mentees' overall performance in this Indian academic institution undergoing organizational change'.

Set 3: From the multiple regression analysis**,** AI tools viz., *Canvas LMS with AI plugin, Kahoot! with AI and MentorcliQ (*With p-value less than 0.05) have statistically significant positive effect on Mentee's Overall Performance. Hence, the null hypothesis is rejected and the alternative hypothesis is accepted. i.e., 'The AI tools positively impact mentees' overall performance in this Indian academic institution undergoing organizational change'.

Set 4: From the ANOVA, factors like Age Group and *Gender,* are significant (p-values are less than .05). Hence, the null hypothesis is rejected and the alternative hypothesis is accepted i.e., 'There is a significant difference in mentee's overall performance score between different demographic groups in this Indian academic institution undergoing organizational change'.

Figure 2

Structural Equation Modeling on Mentor's Adaptive Leadership Style



Note. Source: Amos output of SEM on Mentor's Adaptive Leadership Style

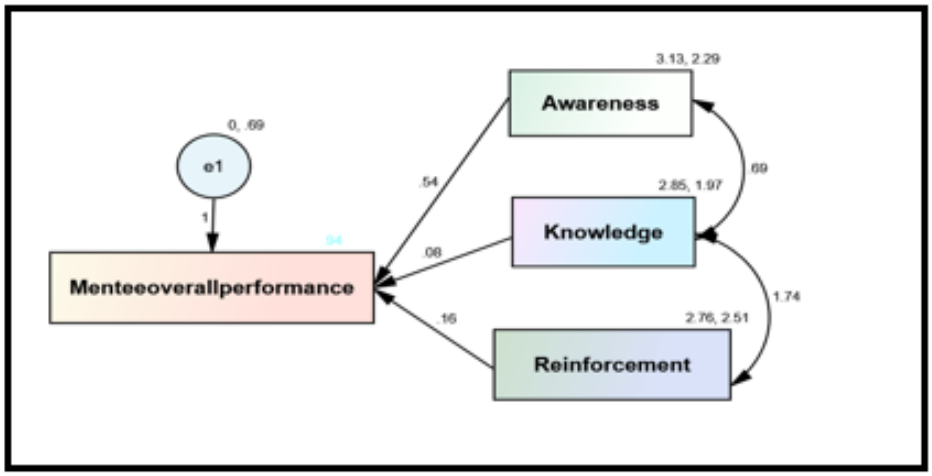
Chi-square = 6.658, Degrees of freedom = 2, Probability level = .063
CMIN/DF-82. 829, CFI-.968, NFI- .972, RMSEA-.04
Chi-square (χ^2): It is a measure of the discrepancy between the observed and expected covariance matrices. In this case, the chi-square value is 6.658 with 2 degrees of freedom. A lower chi-square value indicates a good fit between the model and the data. The probability level associated with the chi-square test indicates the likelihood of obtaining a chi-square value as extreme as the one observed, given that the model is correct. In this case, the probability level is 0.063, which is greater than the conventional significance level of 0.05. This suggests that the model does not significantly deviate from the observed data at the 0.05 level of significance.

Minimum Discrepancy Function divided by Degrees of Freedom (CMIN/DF): It is an index of the goodness of fit that adjusts for sample size. A value close to 1 indicates a good fit. In this case, the CMIN/DF ratio is 12.829, which is relatively low, suggesting a poorer fit. Comparative Fit Index (CFI): It measures the relative improvement in fit of the hypothesized model compared to a baseline model of independence. A value close to 1 indicates a good fit. Here, the CFI is 0.968, indicating a reasonably good fit. Normed Fit Index (NFI): Similar to CFI, it assesses the relative fit of the model compared to a baseline model. Values close to 1 indicate a good fit. In this case, the NFI is 0.972, suggesting a good fit. Root Mean Square Error of Approximation (RMSEA): It provides an index of how well the model fits the covariance matrix, considering the model's complexity and the degrees of freedom. Values less than 0.05 indicate a close fit, while values up to 0.08 represent a reasonable fit. Here, the RMSEA is 0.07, indicating a reasonable fit.

Overall, while the chi-square test suggests some discrepancy between the model and the data, the other fit indices (CFI, NFI, RMSEA) indicate a reasonably good fit of the model to the observed data.

Figure 3

Structural Equation Modeling on ADKAR Model



Note. Source: Amos output of SEM on ADKAR Model

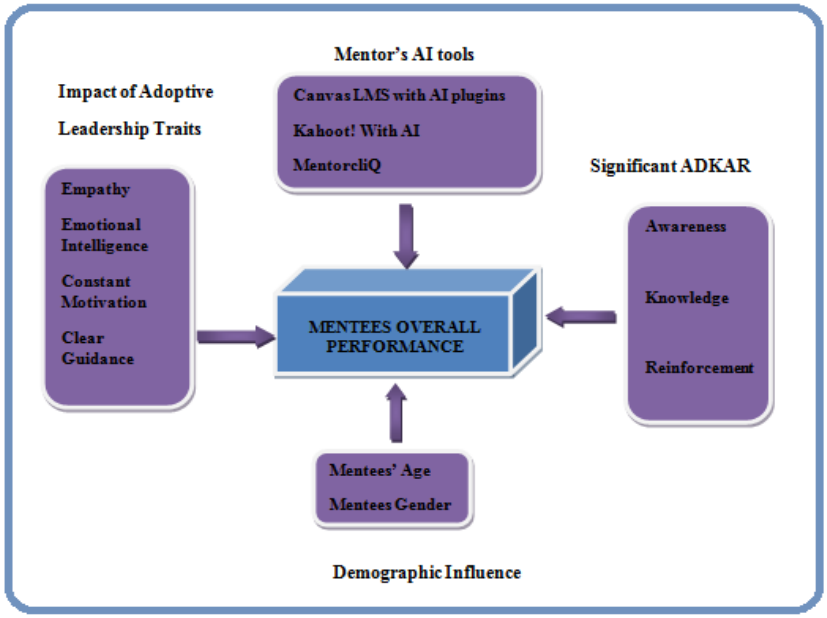
Chi-square = 9.267, Degrees of freedom = 5, Probability level = .081
CMIN/DF-78. 832, CFI-.976, NFI- .987, RMSEA-.05
Chi-square (χ^2): It is a measure of the discrepancy between the observed and expected covariance matrices. In this case, the chi-square value is 9.2678 with 5 degrees of freedom. A lower chi-square value indicates a good fit between the model and the data. The probability level associated with the chi-square test indicates the likelihood of obtaining a chi-square value as extreme as the one observed, given that the model is correct. In this case, the probability level is 0.063, which is greater than the conventional significance level of 0.05. This suggests that the model does not significantly deviate from the observed data at the 0.05 level of significance.

Minimum Discrepancy Function divided by Degrees of Freedom (CMIN/DF): It is an index of the goodness of fit that adjusts for sample size. A value close to 1 indicates a good fit. In this case, the CMIN/DF ratio is 12.829, which is relatively low, suggesting a poorer fit. Comparative Fit Index(CFI): It measures the relative improvement in fit of the hypothesized model compared to a baseline model of independence. A value close to 1 indicates a good fit. Here, the CFI is 0.968, indicating a reasonably good fit. Normed Fit Index (NFI): Similar to CFI, it assesses the relative fit of the model compared to a baseline model. Values close to 1 indicate a good fit. In this case, the NFI is 0.972, suggesting a good fit. RMSEA (Root Mean Square Error of Approximation): It provides an index of how well the model fits the covariance matrix, considering the model's complexity and the degrees of freedom. Values less than 0.05 indicate a close fit, while values up to 0.08 represent a reasonable fit. Here, the RMSEA is 0.07, indicating a reasonable fit.

Overall, while the chi-square test suggests some discrepancy between the model and the data, the other fit indices (CFI, NFI, and RMSEA) indicate a reasonably good fit of the model to the observed data. Therefore, by utilizing Structural Equation Modelling, Multiple Regression and Anova test a model can be constructed to illustrate the key factors in a mentor's leadership style and their ability to embrace change to maximize the mentee's overall performance. In this model, the age and gender differences of the mentee are significant factors.

Figure 4

Mentorship Model to Accelerate Mentee's Overall Performance Applying Quantitative Analyses



Note. Framed by the Researcher on the basis of Quantitative Analysis

Word Cloud & Thematic Analysis

The thematic analysis reveals that effective mentors exhibit a combination of the following themes with their respective relevance; these themes are derived from the comprehensive recording of the 7 selected mentees from different academic programs of this management institute. The prominent themes that have emerged from the thematic analysis are given below with their relevance as perceived by the mentees:
Awareness is crucial for successful mentorship and adaptive leadership in Indian academia's hybrid transformation. Mentors who consider hybrid education's technology, communication, and mentee learning styles, help mentees thrive in hybrid environments by knowing these aspects and tailoring their leadership style.

One tool that facilitates successful hybrid academic leadership and mentor-mentee interaction as mentioned by mentors is *Empathy*. As they were transitioning from hybrid education, empathetic mentors were able to empathize with mentees' feelings and struggles. Such empathetic mentors enhance mentees' confidence, motivation and resilience in hybrid learning contexts through empathizing of mentee and offering bespoke support, encouragement and direction.

Figure 5
Word Cloud

Note. Output Generated by the Researcher using WordArt.com

Another essential thing that makes for an effective mentorship and an adaptive leadership in hybrid academic spaces, is *Knowledge Exchange and Expertise*. Advise and guide mentee by mentee to mentee, when mentor is an expert in knowledge and experience. Mentors, being knowledgeable, help mentor to overcome obstructions, capitalize on what they can, and succeed academically in transition by sharing their knowledge.

It is mentioned that *Consistent Reinforcement* of the positive behaviors and attitudes of the mentee is part of the essentials for the mentee success in hybrid academia. Praising and giving feedback to mentees is also done by mentors to push mentees to achieve goals and adopt a growth mentality. Mentor supports mentee in staying focused, being motivated, and resilient to stay in the institution in continual improvement and academic performance.

The significant attribute in terms of navigating the challenges of the mixed academic setting for mentorship and leadership is being stated as mentors having *Emotional Intelligence*. Those with high EQ pay attention to and control their own as well as the emotions of the mentees. Mentors who accurately display emotional intelligence possess the ability to develop rapport with their mentees, to build trust and an understanding with one another, and be able to communicate and collaborate well with each other while during the process of leaning hybrid education.

Accelerating mentees' engagement, tenacity, and performance in hybrid academia is shown to require *constant motivation*. Having consistent support from them, be guided, encouraged, and believed on by mentees overcome obstacles, create goals, and be academic stars. Through constant motivation, mentors help the mentees to stay positive and consider change as an opportunity of progression as well as lasting through hybrid learning situations.

Another vital factor of why the mentees will interact with the mentors in the complexity of hybrid academia is when they provide *clear direction and communication*. A mentee who has mentors willing to give in-depth explanations, even of these problems in the transition period, will be able to take initiatives, make sound judgments, and will rise above problems in hybrid learning with resoluteness and persistence.

In hybrid academia, mentees feel more *collaboration and resilience* lead to learning, innovation and success. Resilient mentors foster creativity, team work and sharing of information through collaborative learning, group project and peer interactions. To help guide hybrid education transformation, flexible and enthusiastic mentors inspire students to bring out the best of their overall performance.

Mentees loved *Canvas LMS* with AI plugins because it gave individualized learning experiences. It changed. It concentrated on the learners and it tried to adapt to them and gave feedback to them in real time. It prevented e-learning from becoming frustrating and allowed learners to stay on the right path at all times, instead of getting lost within too much information overload, and its intuitive dashboards made goals seem tangible especially with this complicated blend between in person and distance education systems.

Mentorship mattered because it became *MentorcliQ*. It was worth every session because it is required to match mentees with the right mentors and track the results of their sessions. Real- time insights make mentees feel accompanied and relax over time to increase the bond between mentors and their mentees.

Taking a closer look, as revealed in the interview, With *Kahoot with AI*, mentees enjoye as if they were playing a game rather than study. Because the result can be seen immediately, it was a matter of choice of how much responsibility they wanted to take for learning. The quizzes and instant feedbacks were loved by them. Even difficult subjects were made fun instead of the dry chore that you had to do all by yourself with no help from anybody. As such, mentees now find education fun bordering on being exciting with these AI tools instead of being a life ordeal that they would have faced otherwise with their mentors.

Mentee's Overall Performance: A weighted averaging approach calculates the *overall performance of mentees*, which means different performance parameters have different weightage when it comes to the overall development of mentees, thus little impact will be negative on the early stage of the mentee. In this study, academic and research excellence carries a weight of 50%, as that covers their theoretical and practical knowledge, while leadership and managerial skills carry 30%, as they play an important role in developing future managers. Analytical skills to understand and evaluate, which is necessary for real-world application, carry 20%. All of these parameters are scored individually against certain criteria, and the overall performance score is simply calculated by multiplying the score in each area by its weight. Through this, it gives a rounded, non-biased evaluation as a whole and allows mentors/ institutions to best place you along with other mentees against their desired goal lines, which can be specific to the role you might be applying for, or academically.

Thus, these thematic elements underscore the multifaceted impact of mentorship on mentees' performance, highlighting the importance of Mentor's Adaptive Leadership Style as well as *the* Mentor's adaptability to accept change (ADKAR Model perspective) and AI tools usage in fostering mentee's academic success , personal development toward enhancing their overall performance.

Results and Findings

The results and findings from the above analyses are based on the perceptions of the mentees of this prestigious management institute that is adopting changes and is facing a face of transition. Firstly, one by one several quantitative analyses are performed. Reliability analysis underscores the robustness of the measurement scales used in the study. The exceptionally high Cronbach's alpha values indicate strong internal consistency among the items within each scale. This aligns with previous research emphasizing the importance of reliable and valid measurement instruments in accurately assessing constructs of interest (Hair et al., 2019).

Factor analysis reveals underlying constructs that explain the variance in the data related to the mentor's adaptive leadership style and the ADKAR Model. Factors such as *Empathy Empowerment, Clear Vision, Emotional Intelligence, Constant Motivation, and Clear Guidance* of Adaptive leadership are perceived as the most significant factors in a mentor's leadership style whereas *Awareness, Knowledge,* and Reinforcement are predicted as the key elements of ADKAR model, both in terms of *Mentee's Overall Performance*.

The multiple regression analysis identifies that out of the factors mentioned above, only several predictors significantly *Mentee's Overall Performance*. Notably, factors such as Awareness*, Empathy, Knowledge, Reinforcement, Emotional Intelligence, Constant Motivation,* and *Clear Guidance* are found to have statistically significant positive effects on Mentees' overall performance. Subsequently, most influencing AI tools used by mentors to enhance mentees' overall performance are identified viz. Canvas LMS with AI plugins**,** Kahoot! with AI, and MentorcliQ

ANOVA results indicate significant differences in mentees' overall performance based on age and gender. The analyses show that age difference significantly impacts mentees' overall performance, and female mentees' performance is much better than that of males. Structural Equation Modeling (SEM) results demonstrate reasonably good fits for both the Mentor's Adaptive Leadership Style and the ADKAR Model, and they portray their impact on Mentees' overall performance in two different models. From these two models and the results of the analysis of variance, a prescribed model can be framed for this prestigious management institute undergoing a transition phase in terms of teaching mode as well as its international collaboration. This model is developed to reveal the important factors that should be addressed by similar other academic institutions facing organizational change and improve mentee's overall performance.

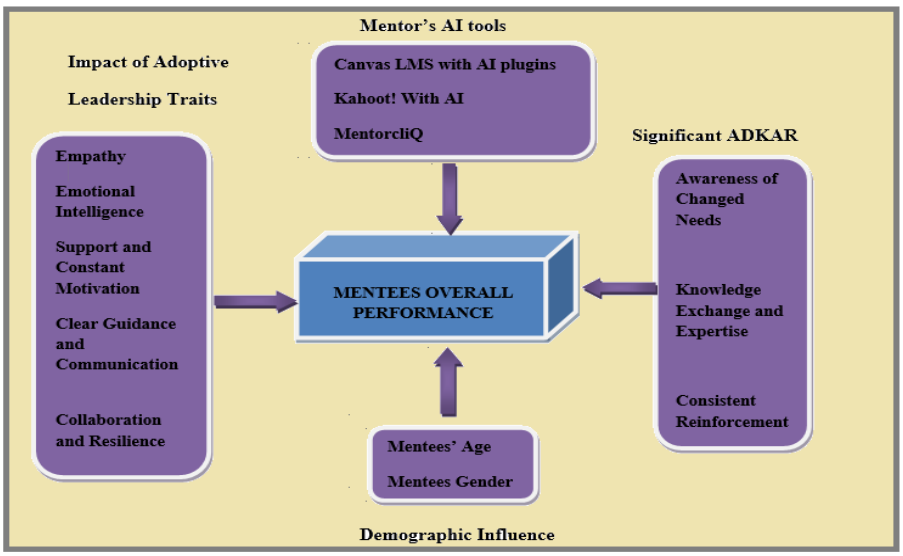
In the second phase, qualitative analysis is conducted from the semi-structured interviews of seven selected mentees from the different academic programs of this institute. The thematic analyses reveal the following themes which are the most relevant and most frequently used to discuss the most significant factors in a mentor's leadership style as well as a mentor's adaptability to accept change towards maximizing their overall performance. The most significant themes that emerged most frequently with high relevance are *Awareness of Change Needs, Empathy, Knowledge Exchange & Expertise*, *Consistent Reinforcement, Emotional Intelligence, Support & Constant Motivation, Clear Guidance & Communication, Collaboration & Resilience* and the AI tools Canvas LMS with AI plugins**,** Kahoot! with AI, and MentorcliQ.

From both the qualitative and quantitative Analysis, the following prescribed model can be drawn as the mentorship model of the prestigious management institute facing a transition phase in a changing scenario in terms of teaching mode (from offline to hybrid) with several international collaborations. This model depicts the most significant factors in a mentor's leadership style as well as the mentor's ability to accept change towards maximizing the mentee's overall performance. Mentee's age and gender difference play an important role.

The study contributes to the existing literature by providing empirical evidence on the factors influencing mentees' overall performance, focusing on the mentors' adaptive leadership styles and the ADKAR change model in hybrid academic settings. The findings offer practical implications for educators, mentors, and organizational leaders seeking to enhance mentee's overall performance, facilitate effective organizational change, and develop mentorship capabilities in diverse contexts.

Figure 4

The Prescribed Mentorship Model to Accelerate Mentee's Overall Performance Applicable for the Management Institutions Operating in Hybrid Mode



Note. Framed by Researcher based on the quantitative and qualitative results

Conclusion

This study explores the implication of a mentor's adaptive leadership style, ADKAR change management model, and innovative tools like Canvas LMS with AI plugins, MentorcliQ, and Kahoot! In enhancing mentees' overall performance in hybrid learning environment of Indian academic institutions. Empathy, emotional intelligence, constant motivation and clear guidance are the adaptive leadership qualities absolutely vital to mentees' development and reinforced by ADKAR's focus on awareness, knowledge and reinforcement. Policies that foster fairness, adaptability, collaboration and innovation should be implemented to support mentors in management institutions adopting adaptive leadership styles. These should include creating support mechanics for the mentors within mentoring programme or endorsing diversity in the mentorship program.

Mentors can improve mentees' performance with the help of AI as mentorship is now being transformed by three facilitators: Canvas LMS, MentorcliQ, and with the help of Kahoot with AI. Canvas LMS takes advantage of contextual AI to give new mentees of study-based, progress and, data-based advice and keep them on track. In structured mentoring, the mentees are matched with the mentors based on mentee's goals. It also provides real-time analytics and progress checks in synch with the mentee's pace. This helps create an enjoyable and positive learning experience for the mentees and allow them control of their own progress. All these tools work together to ensure that the mentees as well as the mentors are able to access unique assistance and attempt to foster more sense of community.

The use of AI tools requires strict ethical standards especially on data privacy , transparency on data usage, and inclusion and non-discrimination. Canvas LMS, MentorcliQ, and Kahoot! are aligned with policies protecting mentees' personal and academic records such as like General Data Protection Regulation (GDPR) and Family Educational Rights and Privacy Act (FERBA). Through these measures, mentees can understand how their data is used and informed consent obtained. Their algorithms designs are fair and provide support to all mentees. Addressing ethical issues will enable these tools to build a safe and fair community in which mentorship can operate without compromising academic standards.

Recommendations

Addressing leadership challenges in education requires a comprehensive approach and cooperation among educational leaders, teachers, staff, and students. It is imperative that mentorship programs should provide extensive training and support to its mentors and equip them with the skills and expertise to mentor and mentees adequately in a hybrid learning environment. There should be continuous professional opportunities for mentors to keep them updated with the current trends and best practices in mentorship and leadership.

Additionally, educational leaders will have to offer the highest degree of significance in nurturing an appropriate organizational culture in fostering creativity,

collaboration, and flexibility. This might involve establishment of measures and programs to promote fairness and inclusion, supporting professors and staff with resources and facilitating the pursuit of improvement and education. Institutions should provide technology and advanced courses that take into account the needs of a unique group of mentees in order to maximize the effectiveness of the mentorship programs in hybrid academic environments aside from running traditional training programs for mentors. For instance Canvas LMS (AI plugins) with MentorcliQ assist for multiplatform learning can be used by mentors to better mentor their students. Writing efficient LMS usage program for itself is both efficient and effective.

Consequently, to effectively use mentorship and adaptable leadership in Indian education working in a hybrid demeanor, institutions need to face these issues and embrace the future range documented in this end. The overall performance of mentees will improve as it will also lead to adoption of positive transformation.

These are restricted to the Indian academic set up which is based on a hybrid paradigm. While this provides interesting insights on particular dynamics, it is unable to apply the results to other contexts or even other countries with different cultural, organizational and educational characteristics. This study has its limitations, however, it also allows for the possibility of further research and progress. Research may be expanded in a global scale and in various academic settings worldwide. Since studies on mentorship and leadership development do not have geographical boundaries, researchers can work across cultures and situations to discover the basic principles of mentorship and leadership development regardless of the culture or situation. Furthermore, this may contribute to the development of a comprehensive global mentorship framework that seeks to improve the global performance of the mentees in different academic settings.

Future research could examine in more detail the complexities of possible age and gender differences in the performance of the mentees. In this case, it may be examined whether any inequalities are present and what possible underlying determinants and appropriate treatments can be examined for them. Diversity and equity in mentorships programs and leadership initiatives will create a wide talent pool for organizational and educational institutions to grow future leaders.

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