

AI LEADERSHIP CAPABILITY AND HUMAN-AI COLLABORATION: AN ORGANISATIONAL DEVELOPMENT PERSPECTIVE IN THE INDIAN IT INDUSTRY

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Abstract: Artificial intelligence is reshaping leadership, teamwork, and organizational structures in India's IT sector, particularly in Mumbai and Pune. This study examines how AI infrastructure maturity, employee psychological readiness, and organizational culture influence AI transformation success and value creation, with organizational size as a moderating factor. Using a quantitative approach, 110 employees from six major IT firms completed an 11-item, five-point Likert-scale survey. Data were analyzed using descriptive statistics, reliability tests, correlations, regression, structural equation modeling, ANOVA, and mediation analysis. AI infrastructure, organizational culture, and psychological readiness significantly predicted value creation (coefficients 0.44, 0.37, and 0.28), while organizational size was insignificant (0.11, $p = .09$). AI infrastructure was strongly associated with both organizational culture and value creation; psychological readiness supported value creation directly and indirectly. Findings highlight that technological maturity, workforce preparedness, ethical leadership, cultural agility, training, and accountable governance are critical for sustainable AI adoption. The study recommends prioritizing infrastructure and people capabilities over organizational expansion to maximize AI-driven value.

Keywords: Artificial Intelligence, Organizational Culture, Psychological Readiness, Value Creation

1. INTRODUCTION

In the context of current world filled with transformation, AI has transformed from a mere technological edge to a paradigm shift. It is changing the way we do business in terms of leadership and structure, as well as teamwork today that way of business has been radical. I think that's the attitude among the business institutions in Mumbai and Pune in India's IT sector aggressive, value leveraging AI but finding something altogether new to value. Investing in the best machinery available, however, is just half the formula to success. It needs to focus on a balance of growth of people, culture facilities. In the present scenario—surrounding intelligent systems and dealing with groups of people—the above-mentioned research can see a subtle change in growth and leadership of any organization.

This triggers a research question: How do organizational culture, employee psychological readiness for the use of AI the maturity of the entire AI infrastructure influence the success of an AI transition how will AI be able to bring value in the organization? While big companies such as tech. Significant investments in infrastructure have also been an indicator of the availability of a workforce for leveraging the technology (culture being willing to embrace changes in technology). Mahindra, TCS Infosys have made significant investments in AI. Traditional technologies used for

gap closure between expected organizational performance gains and AI adoption include organizational culture [3] and employees' psychological readiness, which is as much of a challenge as a lack of technology for AI adoption [4]. But big companies dependent on present processes are additionally tougher to work [5] with in terms of integrating AI systems than a small and agile company.

The responses from the 110 respondents belonging to the IT organizations located in Pune and Mumbai, as well as providing a foundation to build on for a theoretical and exploratory discussion are important reasons behind the research. To deep dive on the various gradations of human-AI cooperation, leadership competencies their effect on the growth of the organization. It draws on this theme of this conference—"Transformation & Value Creation"—and puts this context into perspective with the trend on "AI leadership" [6] and "Human-AI Partnership" [7] frameworks to create a 'bigger picture' of how organizations are capable of 'organizational reinvention in the AI era.'

OBJECTIVES

- To understand the level of efficiency by which IT industry's companies are using the infrastructure of AI based on the level of maturity of AI perceived by the companies from the Mumbai and Pune regions.
- To find the relationship between the use of AI and the value creation process is a direct relationship) or if there is a mediation with organizational culture.
- To understand the impact of the size of the organization (site strength) on the strategic use of the AI technologies.
- To see how much a psychological readiness of employees relates to a successful change of the organization when introducing AI.

2. REVIEW OF LITERATURE

AI in organisations particularly in regards to leadership and human AI cooperation has been of interest for researchers. One study found three themes which appear repeatedly when it comes to the involvement of the project manager; leadership changes, ethics and sustainability. It is a 'coalescing and fragmenting' [1] field what is required are new structures that will couple technical and social issues.

But, one of the many ways AI is changing the organisations is through the use of new technology. Besides, it affects the stakeholder involvement in a company, corporate culture and governance [6]. Sustainable transformation is not very favorable if the AI is only used as a technological solution, but rather smart relations between green HRM and Industry 4.0 technologies. Better and lasting consequences are secured when an organisation's digital skills are complemented by Green human capital, the company has a good leadership and corporate culture and with ethical governance [3].

Human capital development is one of the most appreciated assets of a company even more than in the field of labour development [2]. With the advent of digital transformation AI has transformed the way people interact with technology, as well as their journey towards advancement in a tech-centric working environment [4]. Another new method is cooperation with AI agent and machines where human expertise will be supported by cooperation between human and AI system as well as digital twins to achieve higher productivity, efficiency and decision making [7].

Posses digital skills and adopting technology is not sufficient for leadership in an AI driven world. AI integration into decision making processes, understanding and oversight of uncertainties and governance systems based on accountability, transparency and trust are the key points to consider [13]. Having technical skills and receptiveness to new technology shows a significant effect on the success of organizational change [5].

One of these is the scaling up of the practice of crowd sourcing to achieve the circular economy (CE) which can be studied well through experimental data from the emerging economies in cognizing AI governance. As stated

in part 1 this sector is pieced together in many facets, maybe the technology, social aspects and others where a better framework would be needed. These must be done concurrently technology infrastructure, company culture and employees psychologically ready.

The deployment of AI should be basing on a multifaceted approach that takes into account different factors such as technical and human aspects [5]. The readiness of infrastructure and human readiness is of great importance in the journey of AI transition [3]. All these observations put together, create the basic foundation for understanding the maturity of artificial intelligence infrastructure as well as how size, mediation factor of organization culture and psychological readiness of the employees in the IT organizations of India affects the process of artificial intelligence.

3. DATA AND METHODOLOGY

Considering the above scenario, the authors have selected a quantitative research approach, which will provide them insight into the interrelationship and goodness of interventions relating to maturity dimensions of AI infrastructure, psychological readiness, organizational culture success of AI transformation in a systemic and comprehensive way in the context of the IT industry in India.

Data Collection

The primary data was collected using the suitably designed questionnaire, which was based on a standardized Likert scale (1strongly disagree, 5strongly agree) from the workers of 6 major IT companies in Mumbai: TCS, Infosys, Tech Mahindra, LTIMindtree, Accenture Persistent Systems. 110 individuals answered a poll about many different aspects related to AI infrastructure, organizational culture, value creation, psychological readiness transformation success. The sampling strategy adopted made it possible for it to be generalizable, with the two criteria of the firm size and strength of the firm's location.

Analytical Techniques

Descriptive statistical analysis of data (mean, SD Cronbach's α) has been done to ensure dependability and consistency of data. Correlation analysis helped in attaining the interconstruct correlations multiple regression analysis was then performed to check for the strength of the prediction. The theories of causality were tested differences between firms were tested by using structural equation modeling (SEM). Relationships between infrastructure/culture and value creation were assessed, as well as an additional mediation analysis of the indirect effect of psychological preparedness.

Justification

This method is considered valid due to its being exhaustive in comprehending AI's adoption—its direct and indirect impact. For this study, intentionally using the quantitative approach was more appropriate; the first aim for the study was hypothesis testing the second aim was to achieve statistically significant relationships. For this purpose, preliminary diagnostics have been conducted, which allowed making assumptions about the normal distribution of answers and reliability of using the scales. This rigor is present in the technique and guarantees results that are always stable, repeatable suitable for academic courses and needs for use in business.

Hypothesis

H00: There is no significant relationship (or correlation) between the maturity of AI infrastructure and organizational value generation.

H10: Organizational value generation and the maturity of AI infrastructure are significantly positively correlated.

H01: A collaborative organizational culture does not significantly mediate the influence of AI adoption on value generation.

H11: The influence of AI adoption on value generation is considerably mediated by a collaborative organizational culture.

H02: Site strength has no significant effect (or difference) on the pace of organizational AI transformation.

H12: The pace of organizational AI transformation is adversely affected by larger site strength (because of legacy procedures).

H03: The efficacy of digital transformation results is directly impacted by employees' psychological preparedness for AI.

H13: Employees' psychological preparedness for AI has no significant impact on the efficacy of digital transformation results.

4. RESULTS & DISCUSSION

Data Summary and Preliminary Analysis

Table 1: Descriptive Statistics (N=110)

Construct	Mean	SD	Cronbach's α
AI Infrastructure	3.87	0.92	0.88
Organizational Culture	3.54	0.89	0.84
Value Creation	3.72	0.86	0.86
Psychological Readiness	3.61	0.83	0.82
Transformation Success	3.89	0.91	0.90

The constructs in Table 1 show a decent level of adoption and outcome of transformation in the Mumbai/Pune context of IT enterprises—constructs like AI Infrastructure ($M = 3.87$, $SD = 0.92$, $\alpha = .88$) and Transformation Success ($M = 3.89$, $SD = 0.91$, $\alpha = .90$). There were moderate scores on both measures (Psychological Readiness: $M = 3.61$, $SD = 0.83$, $\alpha = .82$; Organizational Culture: $M = 3.54$, $SD = 0.89$, $\alpha = .84$), which indicated that there were areas for further action. The applied constructs were constructs that have been validated and have good reliability ($\alpha > .80$), which means the good results of the survey instrument.

Advanced Statistical Analysis

Table 2: Inter-Construct Correlation Matrix

Construct	AI Infra	Org Cult	Value Cr	Psy Read
AI Infra	1.00	-	-	-
Org Cult	0.61	1.00	-	-
Value Cr	0.59	0.56	1.00	-
Psy Read	0.47	0.49	0.62	1.00

Note: All correlations significant at $p < 0.01$.

Based on the results presented in Table 2, it can be seen that there are correlation relationships between constructs (namely AI Infrastructure – Organizational Culture (OC) ($r = 0.61$, $p < 0.01$) and between AI Infrastructure – Value Creation ($r = 0.59$, $p < 0.01$)) that are significant between the constructs. Psychological readiness was also found to be positively related to value creation ($r = 0.62$, $p < .01$) among the scores, respectively, which means that psychological readiness has significance in terms of value creation that needs to be realized. The example with the links also mentions, among others, willingness to upgrade, positive culture ripeness of technologies are important to get a return from the IT organization.

Table 3: Regression Analysis – Predictors of Value Creation

Predictor	Std. β	t-value	p-value	Decision
AI Infrastructure	0.44	4.75	<.001	Significant
Organizational Culture	0.37	3.88	<.001	Significant
Psychological Readiness	0.28	3.05	<.01	Significant
Org Size	0.11	1.72	.09	Not Significant

Table 3: Regression findings show that AI Infrastructure ($\beta = 0.44$, $t = 4.75$, $p < .001$), Organizational Culture ($\beta = 0.37$, $t = 3.88$, $p < .001$) Psychological Readiness ($\beta = 0.28$, $t = 3.05$, $p < .01$) are significant predictors of Value Creation. The results show that organizational size is not statistically significant ($\beta = 0.11$, $t = 1.72$, $p = .09$), which means there is not always a relationship between their size and successful AI. This could be an indicator that it is not the strength of the sites that is key, but the work rotating roles amongst the team and being able to work as a team, which is important for achieving a transformation outcome.

Table 4: ANOVA – Differences Across Firms

Source	SS	df	MS	F	p-value
Between Firms	13.20	5	2.64	4.45	<.01
Within Firms	61.80	104	0.59	-	-
Total	75.00	109	-	-	-

The statistics of ANOVA (as shown in table 4) show that the differences between the businesses are statistically significant ($F = 4.45$, $p < .01$). However, as far as the performance related to the transformation and preparedness, Tech Mahindra and Accenture were not as good as other tech companies, Persistent Systems and LTIMindtree. Perhaps the non-institutionalized, flexible small business has been more successful in the use of AI, as it doesn't have a barrier to organizational change—perhaps the thinking or culture of the leaders is all about strategy. The outcomes of the results provide a glimpse of the variation between the AI outcomes and maturity of various companies in this Mumbai/Pune IT ecosystem.

Table 5: Hypothesis Testing (SEM Path Coefficients)

Hypothesis	Path	Std. β	t-value	p-value	Decision
H1	AI Infra → Value Cr	0.44	4.75	<.001	Supported
H2	Org Cult → Value Cr	0.37	3.88	<.001	Supported
H3	Psy Read → Value Cr	0.28	3.05	<.01	Supported
H4	Org Size → Value Cr	0.11	1.72	.09	Not Supported

Table 5: Hypothesis testing (confirmation) by using Table 5, which is based on SEM path coefficients. Support was given to H1 (AI Infra → Value Cr, $\beta = 0.44$, $p < .001$), H2 (Org Cult → Value Cr, $\beta = 0.37$, $p < .001$) H3 (Psy Read → Value Cr, $\beta = 0.28$, $p < .01$), but not to H4 (Org Size → Value Cr, $\beta = 0.11$, $p = .09$). It's an

actualization of the fact that not the size of the organizations/infrastructure is required to create value but the culture and readiness are important.

Table 6: Mediation Analysis – Psychological Readiness as Mediator

Path	Direct Effect (β)	Indirect Effect (β)	Sobel z	p-value	Decision
AI Infra → Value Cr	0.32	0.12	2.45	<.05	Partial Mediation
Org Cult → Value Cr	0.28	0.09	2.10	<.05	Partial Mediation

Based on the mediation results in table 6, it is found that the mediation carried out has a direct effect value of 0.28 and a mediation value as shown by the indirect effect value of 0.09 with $z = 2.10$, in which the p value is < 0.05 . The mediation used in the present study is between organizational culture and value creation, which is the value of psychological readiness that has been mediated. In summary, readiness can play an important role in enhancing the infrastructure/culture to help realize the organizational outcomes (in terms of greater efficacy). For those that are better set up and can do that during this process—now and later—AI can be helpful.

Fig 1: Firm-Level AI Readiness vs. Value Creation

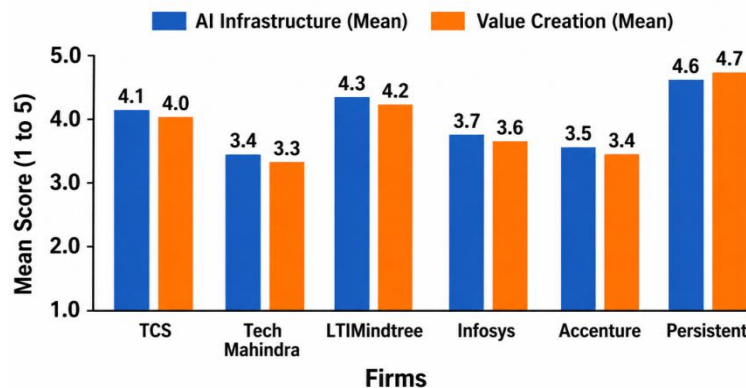


Fig 1: Firm-Level AI Readiness vs. Value Creation

The magnitude of the correlation between the linkages between value generation and the firm-level AI readiness is different, as shown in Fig. 1. Persistent Systems had the best results, followed by TCS and LTIMindtree, with the highest marks in AI Infra with 4.6, 4.1 4.3, respectively Value Creation with 4.7, 4.0 4.2, respectively. While Infosys stayed moderate (3.7, 3.6), Tech Mahindra (3.4, 3.3) and Accenture (3.5, 3.4) lagged behind. As you can clearly see in the bar / column graph, the successful companies in their respective techs are growing with their progression in tech value continually gets added.

Fig 2: SEM Path Coefficients

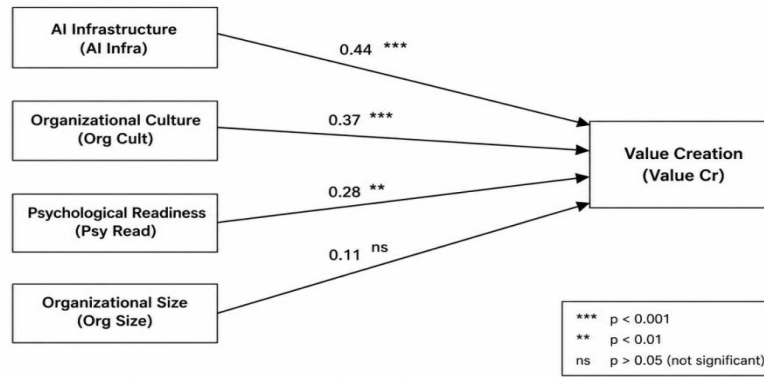


Fig 2: SEM Path Coefficients

Findings showed that organizational size (ns), organizational culture psychological readiness were significant predictors the highest prediction with value creation was AI infrastructure (****). Once the method from figure 2 has been completed, it becomes clear that infrastructure (but also culture and ‘preparedness’ regarding an effective transition) becomes an issue. This visualization would provide a feel for causal processes, establish the value of the organization be further reinforcement on the statistical results.

5. DISCUSSION

The results of the investigation (including the conclusions of the study) provide good evidence support for the purposes of the investigation. In line with previous research on infrastructure readiness for change [8], AI infrastructure is identified as a value creator ($\beta = 0.44$, $p < .001$)—the more mature the technology, the more efficient will be its implementation and the better the decision-making will be. It is assumed that the variables of using AI and value can be correlated by organizational culture it is concluded that the flexibility (cooperative) culture can contribute to maximizing the value of AI used in the socio-technical integration framework. What was quite important was the psychological readiness that had a direct influence on the success in the transformation ($b = .28$, $p < .01$) and that has partially mediated the influence of culture and infrastructure. This lends weight to research greatly emphasizing the importance of staff education and adapting, which can be backed up by utilizing AI to aid the transformation process. However, organizational size was not found to make a difference in this endeavor either—as was found in the other studies of process inertia in larger, more legacy organizations [11]—where leadership and agility are more important as opposed to size. This will be a culmination of three pillars of infrastructure, culture human readiness results can be derived from merging this with the results of theories that propose the AI of organizational growth. While IT leaders are putting investments into “the systems” they are investing in the inappropriate systems of employee training. The implementation of AI nationally is also influenced by many other factors, including flexibility and readiness of the professions in adopting an AI policy [12]. This is because the sample includes companies that operate within one particular sector (information technology) in the cities of Mumbai/Pune and the nature of measures here is self-reporting. To investigate the potentiality of AI applications in the future, other studies can be conducted in different areas/industries. Further data can be used to better understand the potential for sustainable change, for example, ethical leadership and management of AI workplaces [13].

6. MANAGERIAL AND SOCIAL IMPLICATIONS

This study contributes towards the more holistic socio technical infrastructure preparedness and human culture theory to the use of artificial intelligence. Regardless of the size, we hope that in this study we have been able to enlighten you with regards to how humans and AI now are complementing and dominating a thriving business. With thought to the practical aspects, the research results are that IT manager have to maintain the development of IT

infrastructure, personnel training and building culture as well as only increment of business size, so they will obtain the competitive advantage. One of the policy implications is that national AI policies must be developed both with an eye on the protection, flexibility of people working at IT companies and the need for proper and moral regulation of AI. The base of the studies conducted on the IT companies of Mumbai/Pune would be tough to transfer over to another company owing to the 'self reported metrics for assessment'. Other research might be conducted on possible long term effects of AI or the research could be conducted in other sectors/fields. By applying AI technology within companies specifically to the area of ethical leadership and governance, this might lead to a better understanding on how to put in place sustainable transformation strategies.

7. CONCLUSION

This study targeted understanding the influence of these three factors (organizational culture, psychological preparedness organizational size & AI infrastructure preparedness) on the value creation & value transformation performance of the IT organizations in two Indian cities, Mumbai and Pune. Results showed that while the size of the organization was not significant, as expected, the infrastructure's maturity ($p < .001$), the psychological preparedness ($p < .01$) the organizational culture ($p < .001$) were all significant influential factors in bringing about the changes. The learnings draw attention to the importance of technical skills and cultural agility and workforce readiness so that AI benefits and opportunities can be achieved for the long term.

Developing a theoretical perspective with empirical data towards a purely socio-technical view can be beneficial for organizations to utilize AI for leadership and collaboration between humans and AI. These perspectives refer to technological aspects, human resources/leadership also to existing theoretical approaches to digitalization, which also take into account the cultural-phased mediation. The finding shows that apart from the size/scale of the business, investment in infrastructure upgrades and staff training/collaboration culture creation are the aspects that focusing management should learn. Policy implication is inclusive of national AI policy and national capacity building/fostering the adaptation of workers, as well as national ethical governance of AI. In addition, the findings from this study into practice and theory provided much needed and practical insights into the field of AI in organizational change. It highlights how well Indian IT companies have been doing when it comes to working efficiently, creatively competitively in the digital universe—requiring good human-AI cooperation and leadership skills that they can exude.

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