

# Investigating the Mediating Role of Employee Empowerment on the Relationship between Academic Digital Leadership and Faculty Engagement



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*The rapid digitalization of organizations has led to the emergence of digital leadership as a crucial factor for success in the new world of work. This study explores the impact of academic digital leadership on faculty engagement and the mediating role of employee empowerment, the plinth being the social exchange theory. Using a structured questionnaire and Structural equation model, this study highlights the critical role of developing digital leaders who are pivotal in engaging and empowering faculty in higher education institutions. It contributes to growing yet fragmented body of literature on academic digital leadership*

**Keywords:** Digital transformation, Academic Digital Leadership, Faculty Engagement, Employee Empowerment, Social Exchange Theory

## 1. Introduction

The digitalization of the education sector in India has been a transformative journey. Recognizing the pivotal role of technology, especially during the COVID pandemic, the Indian government launched several digital initiatives to enhance education across the country. These initiatives focussed on bridging the digital divide, improving access to education and empowering people. The National Education Policy (NEP), 2020 too underscores the importance of digitization and technology adoption in education, contributing towards building more inclusive, tech savvy education system in India. Moreover, the Digital India initiative gave a boost to the spread of digitalising education.

Amidst the ever-changing digital environment, employee engagement has emerged as a crucial measure of an organization's capacity to adapt and thrive. Engaged employees exhibit increased productivity, innovation, and organisational citizenship behaviours, all of which are crucial for achieving success in the digital age. Nevertheless, the fundamental essence of employee involvement is being questioned by the continuous progression of digitization. Threats as ambiguity over the future, AI replacing jobs, diminished social connections, and the blurring line dividing work and personal life, can erode employee engagement if not effectively dealt with. Simultaneously, digitalization offers possibilities to promote employee engagement by improving communication, transparency, and strategically using digital tools. Given the circumstances, the importance of digital leadership emerges as a crucial gamechanger. Effective digital leaders must possess the requisite abilities and mindsets to adeptly manage the intricacies of the digital workplace and empower and motivate their people to embrace the transformative effects of digitalization. Through effectively communicating a distinct vision, cultivating trust and openness, and utilising digital tools to empower their workforce, digital leaders may significantly contribute to improving employee engagement and advancing organisational achievements.

The questions that we pose and subsequently attempt to address through our research is directed towards the higher education institutions. Though universities and colleges are getting digitally equipped but do we have digital leaders in academia who can empower and engage their team members and steer these educational institutions towards digital success?

This study aims to explore the impact of digital leadership on engagement in the education sector, drawing on the theory of social exchange and the latest research and empirical evidence. It will delve into the specific mechanisms through which digital leadership can enhance employee empowerment and engagement. It will also examine the mediating role of employee empowerment in the relation of digital leadership and employee engagement. Additionally, it will propose some strategies and best practices for digital leaders in fostering a highly engaged workforce in the digital era. Second,

For the purpose of the study leadership in academia means the Deans, Directors, Programme Heads, Chairpersons of departments, centres of educational institutions; Employee engagement refers to the engagement levels of the faculty members working in these institutions.

## 2. Theoretical Background

### 2.1 Digital leadership

The rapid digitalisation of organisations piqued the interest of researchers and practitioners in the domain. Various authors (Araujo et al., 2021; Prince, 2018) believe that this lead to the introduction of terms like 'digital leadership', 'leadership in the digital era' etc. to describe the novel challenges emerging from the rampant digitalisation process and subsequent digital

transformations. Digital leadership, an emerging field in the domain of leadership focuses on the skills, competencies, and behaviors required for leaders to effectively navigate and lead in the digital age (Westerman et al., 2014; Berman & Marshall, 2014). In today's rapidly evolving digital landscape, digital leadership has become cardinal for organizations to thrive in the new world of work (Zeike et al, 2019; Wiyono et al, 2023).

Researchers have identified some characteristics of a digital leader like : deep understanding of digital technologies and their potential applications in the business context (Westerman et al., 2014; Berman & Marshall, 2014; Berman, 2012; Rogers, 2016); adept at leveraging digital tools and platforms to drive innovation, enhance operational efficiency, and deliver exceptional customer experiences, possess strong leadership skills, including the ability to create a clear vision for digital transformation and effectively communicate this vision to their teams (Zeike et al, 2019); inspire and motivate their employees to embrace change and adapt to new ways of working; the ability to execute strategies to actualize the digitalization process, making strategic decisions, allocating resources effectively, and managing change within the organization. It has been noted that a digital leader needs to understand digital technologies and how best they can be applied in business. They must be able to utilize digital tools and platforms for innovation, operational efficiency, and the improvement of customer experiences (Zeike et al, 2019; Wiyono, 2023). The significance of digital leadership in the new world of work cannot be overstated. Organizations that fail to develop digital capabilities and leadership competencies are at risk of falling behind their competitors (Westerman et al., 2014; Berman & Marshall, 2014; Berman, 2012; Rogers, 2016). Digital leaders play a crucial role in envisioning and driving digital transformation, enabling organizations to adapt to the rapidly changing digital landscape and remain competitive. By embracing digital leadership, organizations can adapt to the rapidly changing digital landscape, drive innovation, and remain competitive in the digital age (Zeike et al, 2019; Wiyono, 2023).

Furthermore, digital leaders must also have traditional leadership competencies—having a vision and being able to articulate this vision. They should inspire and encourage their employees to change and adapt to different ways of working (Zeike et al., 2019; Kavanagh et al., 2017). Lastly, digital leadership must implement strategies for realizing the digitalization process: strategic decisions, resource allocation in the best possible way, and change management throughout the organization ( Larjovuori et al., 2016).

## 2.2 Employee Engagement

Engagement is the willful or discretionary effort exerted by an employee due to the sense of commitment, dedication and passion he feels for his work. Employees are considered to be highly engaged when they go far beyond the described key job roles and responsibilities, characterized by an employee's commitment of extensive cognitive, emotional, and physical resources to his or her work (Kahn, 1990). The association of engagement with momentous organizational outcomes like in-and extra responsibility at work (Schaufeli et al., 2006), organizational dedication (Schaufeli & Bakker, 2004), financial turnover (Xanthopoulou et al., 2007), organizational performance (Schaufeli et al., 2002) and consumer's opinion of service quality delivery (Salanova et al., 2005) has been established through numerous studies. Such studies have improved our understanding of positive organizational processes showing the relevance of the concept for organizational outcomes.

## 2.3 Employee Empowerment

Employee empowerment refers to an employee's recognition of their capacity, authority, autonomy, and the skills and resources necessary to navigate their work environment (Men, 2011). It is an "organizational strategy that gives workers greater responsibility for decision making and increased involvement in controlling work processes" (Schreuder & Theron, 1997). Employee empowerment is about the authority to make decisions (Osborne & Plastrik, 2000) and referred to "individual sense that they have a choice in initiating and regulating actions" (Spreitzer, 1995). As a mechanism influenced by organizational policies, human resource practices, and social network structures, empowerment helps to unleash employees' inner potential and enrich their psychological resources, thereby improving their work state.

In this context, empowerment reflects the extent to which employees are aware and active in actions in their company that concern them. It strengthens the sense of competence and the trust of employees to accomplish their jobs. They believe that they have the ability to share their thoughts and make recommendations for operational improvements. In the dynamics between leaders and employees, empowerment is influenced through three key mechanisms: power-sharing, motivational support, and developmental support (Udod et al., 2020).

## 2.4 Social Exchange Theory

Social exchange theory (SET) is a theoretical framework that helps us understand the dynamics of relationships and interactions between individuals in a social context (Surma, 2016). According to SET, the relationship between middle managers and employees is based on a reciprocal exchange, where employees feel compelled to reciprocate the support and empowerment they receive from their managers.

In the context of digital transformation, leaders play a crucial role in fostering employee empowerment through their digital leadership behaviors. When leaders demonstrate effective digital leadership, such as providing the necessary resources and support for employees to adapt to new digital tools and processes, employees are more likely to feel empowered. This sense of empowerment then leads to higher levels of employee work engagement, as employees feel motivated to reciprocate the support they have received.

SET provides a valuable lens for understanding how the digital leadership in academia can impact faculty engagement in digitally transforming organizations. By fostering a positive social exchange relationship characterized by empowerment and mutual commitment, leaders can effectively motivate and engage their employees in the digital transformation journey

*Interplay between Digital leadership; faculty engagement and employee empowerment*

Leaders play a quintessential role in the growth trajectory of the employees. It is the leader who identifies those core competencies and taps the latent potential of the employees. In this process, the leader not only nurtures and extracts the inherent positive qualities of the employee but also helps him in his overall development ultimately leading to the progress of the organization. There is adequate evidence indicating that the leaders who are supportive, fair, and respectful are the one who makes this journey of the employees easier and enjoyable. Today, with the advent of fast paced and rather pervasive technological advancements, the role of leaders has undergone a paradigm shift. Due to digitalization of organisations and work, employees need effective digital leaders. According to a bibliometric study by Tigre et al (2023) "Digital leaders encompass skills such as strategic thinking, adaptability, and the ability to inspire and guide teams through the complex landscape of digital transformation". Their proximity to the workforce and frequent interactions with employees position them effectively to identify, understand, and address employee concerns, thereby mitigating change resistance and fostering positive work attitudes and behaviors (Baptista et al., 2020). Previous studies have shown a positive relation between digital leadership and work engagement owing to various attributes. Cortellazzo et al. (2019) found that digital leaders need to develop new mindsets and skills to effectively lead in the digital age, including the ability to create a shared vision for digital transformation and foster a culture of innovation. Contreas et al (2020) highlighted the importance of digital competencies for leaders managing remote teams and maintaining employee engagement in virtual environments. Research by Sainger (2018) found that digital leadership practices positively influenced employee engagement levels.

Digital leadership and employee empowerment- The interplay between employee empowerment and digital leadership is crucial in driving organizational success in the digital era. Employee empowerment refers to the process of granting employees the authority, autonomy, and resources to make decisions and take ownership of their work (Men, 2011). In the context of digital transformation, employee empowerment becomes even more important as it enables employees to adapt to and embrace technological changes. Effective leadership plays a key role in fostering employee empowerment by providing guidance, support, and a clear vision for the digital transformation journey (Li et al, 2024). Leaders who prioritize employee empowerment create a culture of trust, collaboration, and innovation, which are essential for navigating the complexities of digital transformation. When employees are empowered, they are more likely to embrace and drive digital initiatives, take risks, and contribute their unique perspectives and ideas. In turn, this empowers leaders to effectively lead the digital transformation by leveraging the collective intelligence and creativity of their empowered employees.

Contemporary empirical investigations have posited that managerial practices, both formal and informal, can significantly contribute to employee empowerment through the delegation of authority and the provision of requisite support mechanisms. These mechanisms encompass the allocation of resources, dissemination of information, facilitation of participation, granting of autonomy, provision of feedback, and extension of organizational assistance (Baird & Wang, 2010; Kim & Fernandez, 2017). Within this context, digital leadership emerges as a potent framework for fostering employee empowerment by integrating these support structures into a technologically-mediated environment.

Digital leadership demonstrates the capacity to enhance employee empowerment through multifaceted approaches. Primarily, it facilitates the establishment of digital teams, the delineation of motivational objectives, and the expansion of employee autonomy via digital platforms. These strategies assume particular significance in remote work configurations, where traditional team support structures and interpersonal interactions may be constrained (Wang et al., 2018). The implementation of such practices has been observed to augment employees' self-efficacy and enhance sense of self-worth. Conversely, digital leadership can harness technological advancements to cultivate optimized work environments and facilitate the accessibility, integration, and transference of high-fidelity digital information. This technological leveraging empowers employees to engage in remote and autonomous work modalities (Kuo et al., 2010; Liu et al., 2018). Such practices have been observed to enhance employees' subjective perception of empowerment (Yang et al, 2024).

The social exchange theory posits that employee empowerment is fundamentally a relational construct, wherein power is conceptualized as the capacity to generate exchange value (Cook, 2015). Consequently, employees who experience a robust sense of empowerment are theorized to possess an enhanced capability for organizational value creation. Within this theoretical framework, digital leadership emerges as a potent mechanism for augmenting employees' perceptions of empowerment and engagement. The interrelationship between employee empowerment, digital leadership, and employee engagement creates a positive feedback loop that leads to higher levels of performance, satisfaction, and overall organizational success in the digital age.

In the context of our study on the impact of digital leadership on employee engagement, with the mediating role of empowerment, social exchange theory provides valuable insights. Digital leaders who empower their employees create a positive exchange relationship by providing resources, support, and opportunities for growth and development. This reciprocal relationship is driven by the perception of fairness and trust between leaders and employees. When employees feel empowered, they perceive that their contributions are valued and rewarded, leading to increased engagement. Thus, social exchange theory helps us understand how the mediating role of empowerment enhances the relationship between digital leadership and employee engagement, as it creates a positive exchange dynamic where both parties benefit and contribute to organizational success. The interplay between employee empowerment, digital leadership, and employee engagement creates a synergistic relationship that drives organizational agility, innovation, and success in the digital age (Li et al, 2024).

### 3. Gap in Literature

While existing research has established the importance of digital leadership in various organizational contexts, there is a significant gap in the literature concerning its application and effects within higher education institutions. As universities and colleges undergo digital transformation, the role of academic leaders, such as department heads and program directors, becomes crucial in guiding their employees (faculty and staff) through this transition.

Previous studies have primarily focused on corporate environments, leaving a dearth of knowledge about how digital leadership operates within the unique context of higher education. The dynamics of academic institutions, with their distinct organizational structures, cultures, and stakeholder relationships, may yield different outcomes compared to corporate settings. This gap is particularly notable given the rapid digital transformation occurring in the education sector, accelerated by recent global events such as the COVID-19 pandemic. Specifically, the mediating role of key variables such as employee empowerment in the relationship between digital leadership and employee engagement has not been adequately explored in the academic setting. Furthermore, while the direct effects of leadership on various organizational outcomes have been well-documented, the indirect pathways through which digital leadership influences faculty engagement in higher education remain underexplored. The potential mediating role of employee empowerment, which could be a critical factor in the academic environment where autonomy and intellectual freedom are highly valued, has not been systematically investigated in this context.

Additionally, most studies on digital leadership have focused on top-level management, neglecting the crucial role of middle managers such as department heads, deans, and program directors in academic institutions. These academic leaders play a pivotal role in implementing digital initiatives and fostering engagement among faculty members, yet their impact through digital leadership practices remains understudied.

This research aims to address these gaps by examining the mediating effect of employee empowerment on the relationship between academic digital leadership and faculty engagement within higher education institutions. By doing so, it will contribute to a more nuanced understanding of how digital leadership operates in academic settings and provide valuable insights for institutional leaders navigating the complexities of digital transformation in higher education.

Specifically, the research questions are:

- Does academic digital leadership improve employee engagement in higher education institutions?
- Does academic digital leadership improve employee empowerment in higher education institutions?
- Does employee empowerment mediate the relationship between digital leadership and employee work engagement?
- Based on these research questions, three hypotheses were formulated
- H1: Academic digital leadership is positively associated with faculty engagement.
- H2: Academic digital leadership is positively associated with employee empowerment.
- H3: Employee empowerment mediates the relationship between academic digital leadership and faculty engagement.

### 4. Research Design

#### Scale

A Digital leadership scale known as the Six E-competencies (SEC) model having 18 items, developed by Roman et al. was used for the study (Roman et al., 2019). A scale of work engagement developed by Schaufeli et al, 2006 was used to measure *vigour, absorption and dedication* of employees. It evaluates the level of energy and engagement employees experience in their work. An example of an item from this scale is, "I feel energized in my position". Employee empowerment was measured using a scale developed by Spreitzer (1995). This scale captures the four dimensions of empowerment: meaning, competence, self-determination, and impact.

#### Constant variables: Age, Gender, Work Experience, were taken as the Constant Variables

The participants were asked to evaluate the items with a 5-point Likert-type scale (1 = Strongly Disagree, 5 = Strongly Agree). Data was collected from 265 respondents across various universities and colleges, utilizing an online survey method to ensure broad participation. The demographics of the respondents included a diverse age range, with participants primarily between 29 to 54 years. In terms of gender distribution, approximately 51% were female and 49% male, indicating a slight female majority which is common in many educational institutions. The respondents also varied in terms of work experience, with about 30% having less than one year, while others possessed up to five years or more.

### 5. Data Analysis Interpretation

The data analysis techniques comprised descriptive statistics and Structural Equation Modelling (SEM). Frequency distribution, means and standard deviations were used to describe the data in terms of the digital leadership competency of academic leaders, empowerment and engagement levels of the faculty members. The same are given in Table 1.

**Table 1** Mean, SD and Correlation of Variables

Variables	Mean	SD	DL	EEmp	FEng
Digital Leadership	3.85	0.56	1	0.338**	0.550**
Employee Empowerment	4.02	0.57	0.338**	1	0.56**
Faculty engagement	4.13	0.51	0.550**	0.56**	1

*N=265, SD=Standard Deviation, \*\*Significant at 0.01 level*

The Structural Equation Modeling (SEM) analysis was conducted to examine the impact of digital leadership on faculty engagement, with employee empowerment acting as a mediator. The analysis revealed a significant positive relationship between digital leadership and faculty engagement, indicating that digital leadership positively influences faculty engagement in the educational environment. Furthermore, employee empowerment partially mediated this relationship, enhancing the overall effect of digital leadership on engagement.

### Reliability and Validity

To assess the reliability of the constructs, Cronbach's alpha values were calculated. The values for all constructs (Digital Leadership, Employee Empowerment, and Faculty Engagement) were above the acceptable threshold of 0.7, indicating high internal consistency (Digital Leadership:  $\alpha = 0.734$ ; Employee Empowerment:  $\alpha = 0.745$ ; Faculty Engagement:  $\alpha = 0.777$ ).

*Confirmatory Factor Analysis (CFA):* A CFA was conducted to evaluate the validity of the constructs. All factor loadings exceeded the acceptable threshold of 0.6, and each construct showed strong convergent validity (AVE > 0.5). Discriminant validity was established as the AVE for each construct was higher than the squared correlations with other constructs, the composite reliability for the constructs were also in the acceptable range of >0.6, DL= 0.725; EEmp= 0.818; FEng= 0.80

*Discriminant validity*-was examined using the Heterotrait-monotrait (HTMT) ratio of correlations (Fornell & Larcker, 1981). HTMT values <0.85 indicate good discriminant validity (Hair et al., 2020).

**Table 2 Discriminant Validity**

Discriminant validity (HTMT)	DL	EEmp
Digital Leadership		
Employee Empowerment	0.45	
Faculty Engagement	0.69	0.69

The model fit indices were as follows: Chi-square/df: 5.46; CFI Comparative Fit Index (CFI): 0.84; Tucker-Lewis Index (TLI): 0.90; Root Mean Square Error of Approximation (RMSEA): 0.09; Good -fit index (GFI): 0.722. These indices suggest a good fit between the proposed model and the observed data. Path coefficients should fall between -1 and +1 in terms of relevance. Coefficients close to -1 indicate strong negative correlations and the ones close to +1 exhibit strong positive relationships. In this study the path coefficients derived for the relationships between constructs are explained in Table 3.

**Table 3 Path Coefficients**

Model	Hypothesis	Coefficient ( $\beta$ )	p-value	Decision
Model 1	H1: Digital Leadership has a positive effect on Faculty Engagement	0.543	0.00	Supported
Model 2	H2: Digital Leadership has a positive effect on Employee Empowerment	0.45	0.00	Supported
Model 3 (Full Mediation Model)	H3: Employee Empowerment mediates the relationship between Digital Leadership and Faculty Engagement	0.655	0.00	Supported

The Beta coefficient ( $\beta$ ) represents the standardized path coefficient between two variables, indicating the strength and direction of the relationship between them. For model 1-Digital Leadership  $\rightarrow$  Faculty Engagement ( $\beta = 0.543$ ,  $p < 0.01$ ), indicates a moderate, positive relationship between Digital Leadership and Faculty Engagement. It suggests that a one unit increase in Digital Leadership is associated with a 0.543 unit increase in Faculty Engagement, when other factors are held constant. This supports Hypothesis 1 (H1), confirming that as Digital Leadership improves, Faculty Engagement also tends to increase.

Model 2-Digital Leadership  $\rightarrow$  Employee Empowerment ( $\beta = 0.45$ ,  $p < 0.01$ ) reflects a moderately strong, positive relationship. This suggests that for every unit increase in Digital Leadership, there is a 0.40 standard deviation increase in Employee Empowerment. This supports Hypothesis 2 (H2), indicating that increased Digital Leadership is associated with higher levels of Employee Empowerment.

Model 3- Now, when Employee Empowerment is included as a mediator, the direct effect of Digital Leadership on Faculty Engagement is increased to 0.655 and is positive and significant ( $p < 0.01$ ). This indicates that Digital Leadership positively impacts Employee Empowerment, which, in turn, boosts Faculty Engagement. The indirect effect supports Hypothesis 3 (H3), showing that Employee Empowerment is a significant mediator in the relationship between Digital Leadership and Faculty Engagement.

## 6. Results and Discussion

The structural equation modelling (SEM) analysis supported the hypothesized model. The model fit indices (e.g., CFI, RMSEA) suggested an adequate fit between the hypothesized model and the observed data. Overall, the SEM analysis provided empirical support for the proposed conceptual model, highlighting the direct and indirect pathways through which academic digital leadership shapes employee engagement.

The results showed that academic digital leadership had a significant positive direct effect on employee work engagement. This indicates that when academic leaders demonstrate behaviors such as digital collaboration and change agents etc, their employees tend to experience higher levels of vigor, dedication, and absorption in their work.

The analysis also revealed that academic digital leadership had a significant positive effect on employee empowerment. This suggests that when leaders exhibit digital leadership, their employees feel a greater sense of meaning, competence, self-determination, and impact in their roles. Previous research has explored various aspects of digital leadership, including the concept itself (Avolio et al., 2014; Krug et al., 2018), leaders' traits (Weber et al., 2022) competencies (Roman et al., 2019), the influence of digital leadership on organizational digitalization and innovation capabilities (Wang et al., 2022). However, there remains a need for more in-depth exploration of how digital leadership affects employees' cognitive and behavioral responses, such as empowerment, work engagement. The present study proposed and proved that digital leadership's emphasis on employee empowerment is crucial for increasing faculty engagement.

Most importantly, the SEM results supported the mediating role of employee empowerment in the relationship between academic digital leadership and work engagement. The indirect effect of digital leadership on work engagement through empowerment was statistically significant at  $p < 0.001$ . This indicates that academic digital leadership enhances employee engagement in part by inspiring feelings of empowerment among their employees.

## 7. Implications

These findings have important implications for academic leaders and institutions seeking to enhance employee engagement and organizational resilience in the face of digital transformation. The results suggest that investing in the development of digital leadership competencies among academic leaders may be an effective strategy for boosting employee engagement. By cultivating a digital vision, building their own digital competence, and providing coaching and support to their teams, digital leaders can create an empowering environment that fosters employee engagement (Yang et al. 2024). Through the lens of SET, the study addresses a gap in existing research regarding the specific mechanisms by which digital leadership affects employees' cognitive and behavioral outcomes, offering insights into the social processes that underpin digital-era leadership effectiveness and their impact on organizational innovation and agility.

Organizations should align their leadership development initiatives with strategies aimed at boosting employee engagement to create a cohesive approach that maximizes the benefits of both.

Moreover, the mediating role of employee empowerment underscores the importance of creating a culture of empowerment within academic institutions. By providing employees with a sense of meaning, competence, self-determination, and impact, academic leaders can unlock the full potential of their teams and drive higher levels of engagement.

## 8. Conclusion

The findings of the analysis underscore the vital role of academic digital leadership in fostering employee empowerment. By demonstrating effective digital leadership qualities, leaders not only enhance their employees' sense of meaning and competence but also promote self-determination and a feeling of impact within their roles. This relationship highlights the importance of equipping leaders with the skills and knowledge to navigate the digital landscape, ultimately contributing to a more engaged and empowered workforce. As organizations continue to adapt to the digital age, prioritizing digital leadership development will be essential in maximizing employee potential and driving overall success. Applied to the context of digital leadership, SET suggests that when leaders demonstrate support, provide resources, and promote open communication, employees are more likely to engage in proactive behaviors, such as sharing ideas and concerns — critical elements in an era of digital transformation.

Future research should explore the boundary conditions and contextual factors that may influence the relationships between academic digital leadership, empowerment, and work engagement. Additionally, longitudinal studies are needed to examine the long-term impact of digital leadership interventions on employee and organizational outcomes in higher education.

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