

Building a Sustainable Aviation Workforce: The Role of Digital Leadership, AI Readiness, and Workplace Diversity

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Abstract:

The study examines the role of digital leadership, AI readiness and the workplace diversity in the Saudi aviation sector in determining employee performance. Using the organizational support theory and social exchange theory, the study also examines whether the perception of the workers that they are being taken care of by the organization and their commitment towards the organizations are examined through perceived organizational support and organizational commitment which act as serial mediators which help in translating digital and diversity initiatives into performance-oriented results. A survey of 412 aviation workers in airlines consisting of ground handling firms and airport authorities was used to collect data that were examined with PLS-SEM. The findings reveal that digital leadership, AI readiness and workplace diversity positively influence employee performance. The primary process is perceived organizational support that gives employees the message that the organization cares and helps the employees. These performance gains are further supported by organizational commitment. Serial mediation findings give evidence that both support and commitment have a sequential effect that transfer the consequences of digital and diversity programs on performance. The complete model accounts for 64.5% of explained variance of employees' performance. Results indicate that technology and diversity-related interventions are most effective when organizations take active steps to support diverse employees and build their level of commitment which turn the hearts and minds of personnel toward the collective good. For HR leaders and government officials driving Saudi Vision 2030, the emphasis should be to invest in digital leadership and AI preparedness while also building stronger organizational support and commitment to build a more agile and high performing aviation workforce.

Keywords: *Digital Leadership, AI Readiness, Perceived Organizational Support, Employee Performance, Aviation Industry*

Introduction:

In the turbulent global environment, employee performance has become a strategic need of aviation organizations that require operational excellence and sustainable competitive advantage (Aguinis et al., 2024; S. Al et al., 2023). The aviation sector is a capably intensive business that requires stringent standards of safety measures as well as higher levels of customer service. Competitive intensity is high which demand strategic capabilities (Iqbal, Othman, & Zakaria, 2025). It consequently requires strong employee performance in all the operations including ground handling, maintenance, cabin crew

services, and air-traffic management (Karatepe, O, Rezapouraghdam, et al., 2022). The digital transformation, introduction of artificial intelligence and the shift in the demographics of the working force have transformed the drivers of individual and organizational performance in this industry (Bankins et al., 2023; Gursoy et al., 2019). In Saudi Arabia, the aviation sector is experiencing rapid growth due to Vision 2030 and the implementation of digital leadership, AI readiness and robust diversity management is critical in improving the performance of staff as well as maintaining world standards in operations (A. Al et al., 2023). These new trends have significant impacts on employee attitudes, behaviors as well as performance, ultimately cultural integration and broadens overall workforce development (M. B. Tariq, N. A. Afendi, & O. S. May, 2025). Such performance still continues to be a valuable resource in the modern unstable, unpredictable aviation industry which has been marked by recovery challenges following the pandemic, volatile fuel prices with increased competition across the region (Albalawi et al., 2024).

The aviation industry in Saudi Arabia plays a critical role in the economic diversification and the growth of the country in terms of tourism. Digital leadership is no longer a choice, but a necessity to enhance the performance and the engagement of employees (Al-Romeedy, 2024; Al & B, 2022). According to Vision 2030, aviation is one of the enablers of tourism and logistics to reach 330 million passenger numbers with triple cargo capacity and turn Riyadh into a global aviation hub with flights to all three continents (Saudi, 2023). The intensifying use of AI-powered systems, biometrics technologies and automated ground-handling is being integrated between the new national carrier Riyadh Air, the expansion of King Abdulaziz International Airport, and the fast-emerging Red Sea International Airport Positions Saudi Arabia as a global leader by 2030 (Airport Industry, 2024; Arab, 2025; Newsroom, 2025). Demographic changes within the aviation labor force are propelled by the policy of Saudization with greater involvement of the Saudis, the growth of female labor involvement via social reforms and absorption of the multicultural expatriate talent. Such transformations will require paying more attention to managing diversity and having an inclusive organizational environment (Albassam & B, 2023; Ministry of Human & Social, 2024). Aviation work requires great physical endurance: odd-hour work, extreme conditions, adherence to regulations and consistent use of new technologies. Such stresses weigh heavily on the well-being of employees and their sustainability in their opportunities to perform and new strong organizational support mechanisms are needed (Chen et al., 2024).

Perceived organizational support is an important mechanism by which leadership behaviors and organizational initiatives become translated into positive employee outcomes by signaling to employees that the organization values their contributions and is concerned with their well-being (Eisenberger et al., 2020; Kurtessis et al., 2017). In the context of aviation, where employees work in demanding work environment involving shift rotations, jetlag, customer complaints and safety-critical responsibilities, the perceived organizational support serves as a psychological resource for employees that buffers against occupational stresses and that facilitates adaptive responses to operational challenges (Karatepe, O, Olugbade, & O, 2022). According to the organizational support theory, aviation employees with perceived high levels of organizational support will develop felt obligations to reciprocate through improved performance, reduced absenteeism, and organizational citizenship behavior essential in maintaining quality and safety standards of services (Rhoades et al., 2002). In the context of Saudi Arabia's aviation digital transformation, perceived organizational support acts as a buffering mechanism against technostress posed by continuous technological changes that helps strengthen the task performance and contextual behaviors (M. Al et al., 2023; Tarafdar et al., 2019). Additionally, organizational commitment, especially affective commitment which represents

emotional attachment and identification with the organization, has become an imperative component of sustaining performance in the aviation industry, as committed employees show higher levels of motivation, lower turnover intentions, and higher levels of discretionary effort needed for sustaining the quality of service during the peak travel seasons and organizational disruptions (S. Al et al., 2023; Meyer et al., 2021). The physical nature of the work in the area of aviation, such as prolonged standing, manual baggage handling, exposure to cabin pressure, and exposure to noise pollution, only serves to increase the importance of commitment-building initiatives to maintain performance by employees over a long career trajectory (International Air Transport, 2024).

Although increased academic attention has been given to the digital precursors of employee performance, critical gaps in theory and evidence still exist, especially in the areas of aviation sectors in the Middle East that are rapidly evolving. Most of the research focuses on the immediate impact of digital leadership or workplace diversity on performance outcomes and rarely considers the mediating effect of perceived organizational support and organizational commitment in a workplace in which operational requirements and cultural forces are distinct (Bunjak et al., 2022; Guillaume et al., 2017). Alteration of digital leadership behaviors and AI-based organizational capabilities into a real performance change based on the psychological processes is understudied in the Gulf Cooperation Council (GCC) aviation settings (Al & B, 2022; Bankins et al., 2023). In addition, the advantages of workforce diversity are well-known in the Western literature, but the facilitating role of perceived organizational support in harnessing the performance potential of diversity within the unique cultural and regulatory context of Saudi Arabia, where the current trend is to implement Saudization, gender inclusion policies, and management of multicultural workforces (Albassam & B, 2023; Roberson et al., 2020). The impact of the organizational commitment as a moderating factor has been scarcely empirically studied in the aviation context with the presence of different degrees of digital maturity and AI readiness among legacy airlines, low-cost airlines, and emerging airlines (Gursoy et al., 2019; Li et al., 2024). Moreover, the current aviation performance studies rely on the Western airlines, with little consideration of the developing aviation markets in Middle East that have different growth patterns, regulatory conditions, and labour makeup (Albalawi et al., 2024). Moreover, due to the complexity of integrating digital leadership activities, AI readiness, workforce diversity, and employee performance, a complex framework incorporating the findings of the organizational support theory, social exchange theory, and categorization-elaboration model is needed to gain a comprehensive view of performance dynamics within the Saudi Arabian aviation ecosystem on the road to change (Cropanzano et al., 2017; van et al., 2004).

To address these contextual, physical and literature gaps, this study proposes the development of an integrated framework that will examine the effects of digital leadership, AI readiness and workspace diversity on employee's performance Saudi Arabian aviation sector using the mediating roles of perceived organizational support and organizational commitment. First, the study evaluates the direct effects of digital leadership, AI readiness, and workspace diversity on aviation employee performance to establish baseline relationships built on by those that follow. Second, it examines the mediating effect of perceived organizational support in transmitting the effects of the independent variables to performance outcomes of employees, testing for propositions derived from organizational support theory in the aviation operational context. Third, the mediating relationship of organizational commitment in the relationship between perceived organizational support and employee performance is explored to understand how attitudinal factors translate into behavioral outcomes among aviation personnel. Fourth, a serial mediation model in which perceived organizational support and organizational commitment mediate the relationship between antecedent variables and employee performance in succession is tested and this explains the variance in performance comprehensively and

in Saudi aviation context. Fifth, this research has practice implications by offering evidence-based guidance for Saudi aviation organizations - Saudi Arabian Airlines (Saudia), Riyadh Air, flynas, and flyadeal - aiming to optimize employee performance by strategic investments in digital leadership development, improving AI readiness skills and diversity management initiatives aligned with Vision 2030 objectives.

2. Literature Review

2.1 Digital Leadership and Employee Performance

The idea of leadership has changed significantly over the past 20 years, especially as organizations have adopted digital technologies that fundamentally change the ways in which work is performed and leaders communicate with their teams. The important thing about digital leadership is that a leader should be able to communicate, make decisions, transform the organization with the help of the technology and remain a truly human and employee-related person (Avolio et al., 2014). In contrast to the traditional approach to leadership which relied on physical interaction and strict hierarchies, digital leadership is built on both technical expertise and emotional intelligence giving leaders the ability to inspire and supervise employees regardless of their virtual and geographical locations (Cortellazzo et al., 2019).

The most interesting thing about digital leadership is that it restructures the fundamental superior - team relationship. By being comfortable and competent in using digital tools, leaders deliver a powerful message that the organization is progressive and determined towards contemporary work practices (Kane et al., 2019). This is particularly relevant in the aviation sector where all the operations rely on technology including flight scheduling systems and customer relationship management. When managed by digitally savvy managers, employees will feel more confident to resolve tech issues, The employees who are supervised by digitally fluent managers will feel more confident in their ability to solve technological issues (Schwarz Müller et al., 2018).

The empirical studies of the relationship between digital leadership and performance have increased significantly in recent years. The study presented by Van et al. (2019) with an emphasis on e-leadership behaviors proved to be quite significant as the authors discovered that leaders utilizing digital communication channels efficiently increased the level of employee engagement and productivity. Antonopoulou et al. (2021) also found that there was a significant correlation between digital leadership capabilities and the employee performance in Greek companies that were in the process of digitalization. These results explain why technology-oriented leadership has become as crucial as conventional leadership abilities in motivating the effectiveness of the work force.

Digital leadership in the Saudi Arabian aviation industry has become highly significant in the transformation agenda (Saudi, 2023). Artificial-intelligence systems, biometric technology and automated processes are quickly getting implemented in aviation companies which require leaders capable of managing staff despite the omnipresent changes (Al & B, 2022). In cases where pilots, cabin crew, ground handlers and customer-service employees feel that their supervisors are digitally competent, they should accept new technologies more and work more confidently and efficiently. (Albalawi et al., 2024).

Digital leadership is also effective in promoting performance in various ways. In addition to the direct delivery of technical knowledge and digital competencies, digitally skilled leaders create a work environment that is marked by transparency, availability and rapid information distribution (Bunjak et

al., 2022). This rich information environment can be important in influencing the way employees perform their duties especially in the aviation industry where split-second decisions determine the level of safety. Furthermore, digital leaders are more likely to adopt more adaptive and flexible management styles that go especially well among younger generations who have been surrounded by technology throughout their lives (Benitez et al., 2022). Based on the following evidences, we propose:

H1: Digital Leadership has a positive and significant relationship with Employee Performance.

2.2 AI Readiness and Employee Performance

Artificial Intelligence (AI) is no longer confined to the world of science-fiction but has become a tangible part of organizational life. The term AI readiness describes the level to which an organization is ready to adopt, integrate, and make proper use of AI based technologies in its work (Alsheibani et al., 2018). This preparedness does not just entail the technological infrastructures but also the human-capability, cultural disposition, and legal frameworks to make AI implementation successful (Fountain et al., 2019). In a highly AI-ready organization, workers themselves have to deal with intelligent systems that can complement their functions instead of overloading them.

The correlation between the level of AI preparedness and the results of the employees has a number of interwoven mechanisms that researchers are only beginning to understand and value. Firstly, highly AI ready organizations provide workers with equipment that automates simple and repetitive work. This liberates human workers to concentrate in areas that demand creativity, judgment and interpersonal competencies (Tambe et al., 2019). Such is the case in the aviation industry where the less experienced customer-service personnel will not have to deal with simple booking requests as that need is being met by chatbots and more time is being spared for the employee to address complicated issues encountered by the passengers.

Secondly, the organizations that are AI-ready usually spend a lot of money training and developing employees so that the latter can collaborate with smart systems efficiently, resulting in elevated brand reputation and service quality (Chowdhury, Budhwar, & Wood, 2024; M. B. Tariq, N. A. B. Afendi, & O. S. May, 2025). This investment is an indication to employees that the organization is willing to facilitate their development and adjustment which is likely to maximize the motivation and performance. The Bankins et al. (2023) study observed that workers who worked in AI-mature organizations had higher rates of meaningful work, since technology does the tedious duties and humans address more interesting problems. Such a distribution of work brings about situations in which workers are able to perform better in what they do best.

Third, the AI readiness tends to enhance the decision support making employees make superior decisions on a daily basis. Gursoy et al. (2019) discovered that AI systems in the service sectors provided the employees with instant data and recommendations that increased the services. Currently, AI-based solutions provide aviation industry employees with real-time access to passenger preferences, operational changes, and problem-solving recommendations, resulting in more complex and efficient customer service. As jobs are rendered easier and more effective with the use of intelligent tools, performance is bound to improve. Work performance increases when smart tools are used to simplify and make work more productive. Li et al. (2024) conducted a literature review and found that AI capabilities of an organization are always increasing individual performance when implemented carefully. The most significant enhancements were possible in those types of firms that integrated technological preparedness and high levels of employee preparation and support.

The readiness towards AI has become a strategic focus in Saudi Arabia as the kingdom focuses on making itself a global aviation center. The introduction of new airlines including the Riyadh Air as well as the growth of the already existing airlines have all been followed by the heavy investment in AI-powered operations (Al et al., 2024). Workers of AI-ready airline corporations are more qualified to manage the complexity and the magnitude needed by the Vision 2030. Their smart application of systems to perform tasks as simple as baggage handling to crew scheduling has a direct effect of enhancing personal and group performance.

Nevertheless, there is potential demerit. There is a risk that some employees fear losing a job or inability to cope with modern equipment (Tarafdar et al., 2019). These issues need to be addressed calmly by organizations through communication and supportive implementation practices. When properly executed, the necessity to be AI ready provides the ground upon which technology and human capital collaborate to produce higher levels of performance. Based on the following evidences, we propose:

H2: AI Readiness has a positive and significant relationship with Employee Performance.

2.3 Workspace Diversity and Employee Performance

The modern working environment has turned out to be exceptionally diverse with people of various cultural backgrounds, ages, gender and professional experiences joining hands to achieve organizational goals. The diversity in the workspace can be defined as non-uniformity of the workforce in various aspects such as demographic factors, cognitive styles, educational levels, and experience (Guillaume et al., 2017). This diversity has been a great opportunity and a management challenge because organizations have to devise means of using diverse points of view without losing cohesiveness and collaboration.

The conceptual underpinnings of learning about the performance implications of diversity have grown to a significant level as opposed to the initial studies that yielded varying results. The categorization-elaboration model van et al. (2004) was developed that assisted in clearing up the perceived paradoxes in the literature by identifying two processes that are evoked by diversity. On the one hand, diversity may trigger the process of social categorization, the representatives of which recognize representatives of in-group and out-group, and this process may result in the emergence of friction and the lack of cooperation. Alternatively, diversity may also spur elaboration of information with diverse views enhancing problem-solving and decision-making. The performance results seriously rely on the process that prevails in a particular organizational setup.

What makes the difference between positive and negative results of diversity? The moderating factors are starting to be identified to play a key role in organizational practices and climate. Shore et al. (2018) claimed that when workplaces are more inclusive, appreciating and using the differences in a positive manner, they have a much higher chance of achieving the performance advantages of diversity. Employees with different backgrounds tend to be more open and engaged with their work in case they are truly welcomed and appreciated as human beings. On the other hand, those organizations that, without establishing inclusive cultures, simply attain demographic diversity may enjoy the coordination costs of diversity but not the creative benefits of diversity.

Diversity in the work force has become inevitable and strategic in the field of aviation. Airlines cater to more diverse categories of passengers who enjoy communicating with other employees who comprehend their cultural demands and communication patterns (Karatepe, O, Olugbade, & O, 2022; Karatepe, O, Rezapouraghdam, et al., 2022). The work of ground handling is to be coordinated between the workers of many countries who introduce various ways of working in a team and solving problems.

With proper management, this diversity would increase the capacity of an airline to serve the international markets and cope with diverse operational environments.

Over time, empirical evidence regarding diversity and performance is becoming more context-specific and subtle. Guillaume et al. (2017) developed an extensive review of what moderates the impacts of diversity and found out that organizational strategy, human resource practices, as well as leadership, were all able to contribute to the effects of diversity on performance, whether positive or negative. Roberson et al. (2020) also further added that the reduction of inequality in the workplace and establishing actual inclusion were the conditions of achieving the potential benefits of diversity. Such results imply that diversity as such is neither good nor bad to performance, but rather, how organizations utilize and manage it is.

The aviation industry of Saudi Arabia represents a rather fascinating case to consider when focusing on the process of diversity. The labor force is made up of Saudi nationals whose contribution has been growing tremendously owing to the Saudization policies, and expatriate employees of dozens of nations who bring international aviation experience (Albassam & B, 2023). The social reforms that have been witnessed recently have also made women have a more active role in what was one of the males' dominated industries. Effective management of this multidimensional diversity has become an imperative requirement of Saudi aviation entities that aim at attaining high standards of world performance.

It has also been evidenced that diverse teams that are well supported show more flexibility and strength- the traits that are vital in the dynamic aviation setup. S. Al et al. (2023) discovered that aviation organizations that managed diverse workforce well performed better whenever faced with disruptions due to their ability to tap into the diverse problem-solving methods and cultural competencies. This flexibility will be especially important when Saudi aviation increases its connection to the rest of the world and works with more and more diverse groups of passengers.

Based on these theoretical and empirical foundations, we propose:

H3: Workspace Diversity has a positive and significant relationship with Employee Performance.

2.4 The Mediating Role of Perceived Organizational Support

Although the direct relations between our independent variables and employee performance are theoretically strong, there exists a greater question of how these impacts would occur. Perceived Organizational Support (POS) is the set of beliefs of employees on a global scale on the extent to which the given organization cares about them and appreciates their efforts (Eisenberger et al., 2020). The perception acts as a prism through which employees view several organizational actions and policies to convert objective conditions into subjective experiences that create an attitude and behavior.

The organization support theory gives a solid ground on the reason as to why POS is so significant in employee performance. The theory assumes that employees form generalized perceptions of organizational support in the light of their experiences regarding the organizational policies, practices as well as the way the organizational agents treat them (Rhoades et al., 2002). When such perceptions are positive, employees feel that they are needed and cherished, which triggers a sense of reciprocity norms whereby they are bound to contribute to organizational success in its attainment of the goals. This reciprocity is expressed in the form of increased effort, commitment and eventually performance.

The empirical evidence that POS is a mediating mechanism has been very impressive in the last 20 years. In another meta-analysis study, Kurtessis et al. (2017) investigated the organizational support

theory and concluded that POS had a significant effect on mediating the relationship between different antecedent states and employee outcomes such as performance. Their discussion showed that when organizational members provided the conditions that increased support perceptions, employees reacted by attitudes and behaviors that were favorable to organizational performance. This mediating POS role has been found to be exceptionally strong within industries, cultures, and workforce.

What is the role of digital leadership in employee performance in perceived organizational support? By showing a digital competence ability and using technology to communicate efficiently, offer prompt feedback, and support employee development, such actions indicate that an organization is concerned about retaining employees who are up-to-date and competent (Van et al., 2019). According to employees, the technological investments and digital access of their leader will mean that the organization cares about their success. This perception of support then drives the performance to be better since employees will pay back the perceived care of this organization. This theoretical reasoning was supported by the finding of Bunjak et al. (2022) that the predictive nature of digital leadership behaviors in terms of POS was high in technology-intensive work settings.

Likewise, the perceived organizational support may be increased on the basis of AI readiness in several ways. Employees will reasonably view AI-based investments as a sign of organizational concern when such investments improve the work of employees by making it less arduous and more enjoyable and intelligent in decision-making and other repetitive duties (Chowdhury et al., 2023). Moreover, AI-ready organizations are usually characterized by training and development opportunities that enable the employees to acclimatize to new technologies, which is another indication of new technologies being invested in by an organization in the welfare of their employee. Bankins et al. (2023) claimed that the careful implementation of AI that puts the interests of employees first, will allow establishing a situation where workers will feel supported instead of threatened that in turn should positively impact POS and further performance.

The connection between workplace diversity and perceived organizational support works a little bit differently, yet has the same underlying logic. When organizations successfully manage the diversity through the establishment of inclusive climates, equal opportunities, and appreciation of individual differences, the employees of any backgrounds feel that the organization is concerned about them (Shore et al., 2018). This is especially significant to the representatives of the minority groups who might be particularly sensitive to the messages regarding their belonging. Guillaume et al. (2017) also pointed out that diversity management practices that contribute to building inclusion positively impact support perceptions in the workforce, and not only minority employees.

Perceived organizational support has a specific meaning in the aviation context of Saudi Arabia, which has a demanding nature of work. People working in odd hours, on stressful shifts with customers, and tasks that are safety-related are particularly concerned about the fact that their organization cares about their well-being (Chen et al., 2024). With the signs of organizational care (as indicated by digital leadership, AI readiness, and diversity management), aviation employees are better positioned to feel the support and react by improved performance. (Karatepe, O, Olugbade, & O, 2022) have discovered that POS played a crucial role in employee performance in the aviation sector and it is applicable in this industry scenario. Based on this theoretical reasoning and empirical evidence, we propose:

H4: Perceived Organizational Support mediates the relationship between Digital Leadership and Employee Performance.

H5: Perceived Organizational Support mediates the relationship between AI Readiness and Employee Performance.

H6: Perceived Organizational Support mediates the relationship between Workspace Diversity and Employee Performance.

2.5 Serial Mediation: The Role of Organizational Commitment

While perceived organizational support provides an important explanatory mechanism, we propose that the pathway from our independent variables to employee performance involves an additional step that is through organizational commitment. Organizational commitment refers to a psychological association of employees with the organization. An emotional bond and identification also known as affective commitment is instrumental in appreciating performance outcomes (Meyer et al., 2002). This increased engagement transforms the support perceptions into motivation and effort over a long period of time.

The concept of serial mediation comes as a logical continuation with respect to the organizational support theory and social exchanges viewpoints. Employees will gain strong ties to their organization and be willing to identify with organizational values and goals once they feel well supported (Eisenberger et al., 2020). This emotional investment in turn leads them to work hard and perform highly even in the presence of pressure or when nobody is around. The sequential pathway from organizational conditions through support perceptions to commitment to performance represents a theoretically coherent causal chain that has received empirical support in various contexts.

There is a strong relationship between perceived organizational support (POS) and organizational commitment. Rhoades et al. (2002) have done a review of extensive evidence that POS is rated among the most potent predictors of affective commitment. Employees tend to develop strong emotional attachments and attach themselves to an organization whenever they see that the organization really cares. The latter was confirmed by Kurtessis et al. (2017) in a meta-analysis study and found that commitment was a path through which perceptions of support induced behavioral effects.

The digital leadership, AI readiness, and workspace diversity require this two-step mediational pathway. Digitally competent leaders prepare the ground of efficient communication, growth, and support (Cortellazzo et al., 2019). This is interpreted as organizational support as employees feel recognized by the organization. Such perception creates emotional attachment, or commitment, to the organization. Dedication in turn leads to long term hard work and great performance. All the links of this chain are theoretically plausible and empirically established hence the complete serial mediation chain provides a more detailed account than any single mediator.

Similarly, AI-capability investment and inclusive diversity management do establish objective conditions, which employees have to process psychologically and respond to. This translation process is encompassed in a serial pathway that goes through POS and commitment. Such successive psychological mechanisms are common in social exchange processes, as Cropanzano et al. (2017) argued in favor of the plausibility of proposed model.

Organizational commitment is especially applicable to the Saudi Arabian aviation context because of the issues related to employee turnover and engagement (S. Al et al., 2023). Aviation organizations that are capable of creating high commitment based on support enhancing practices are most likely to have a more stable and high-performing workforces. The serial mediation model indicates that digital leadership, AI readiness and diversity management may be used in this commitment-building process by improving perceived organizational support first. Based on this theoretical reasoning and empirical evidence, we propose:

H7: Perceived Organizational Support and Organizational Commitment serially mediate the relationship between Digital Leadership and Employee Performance.

H8: Perceived Organizational Support and Organizational Commitment serially mediate the relationship between AI Readiness and Employee Performance.

H9: Perceived Organizational Support and Organizational Commitment serially mediate the relationship between Workspace Diversity and Employee Performance.

Figure 1 provides a conceptual framework to show how Digital Leadership, AI Readiness, Workspace Diversity are used as independent variables (with Perceived Organizational Support and Organizational Commitment as mediators) in order to predict Employee Performance as the Dependent Variable. Serial Mediation increases the total mediation effect.

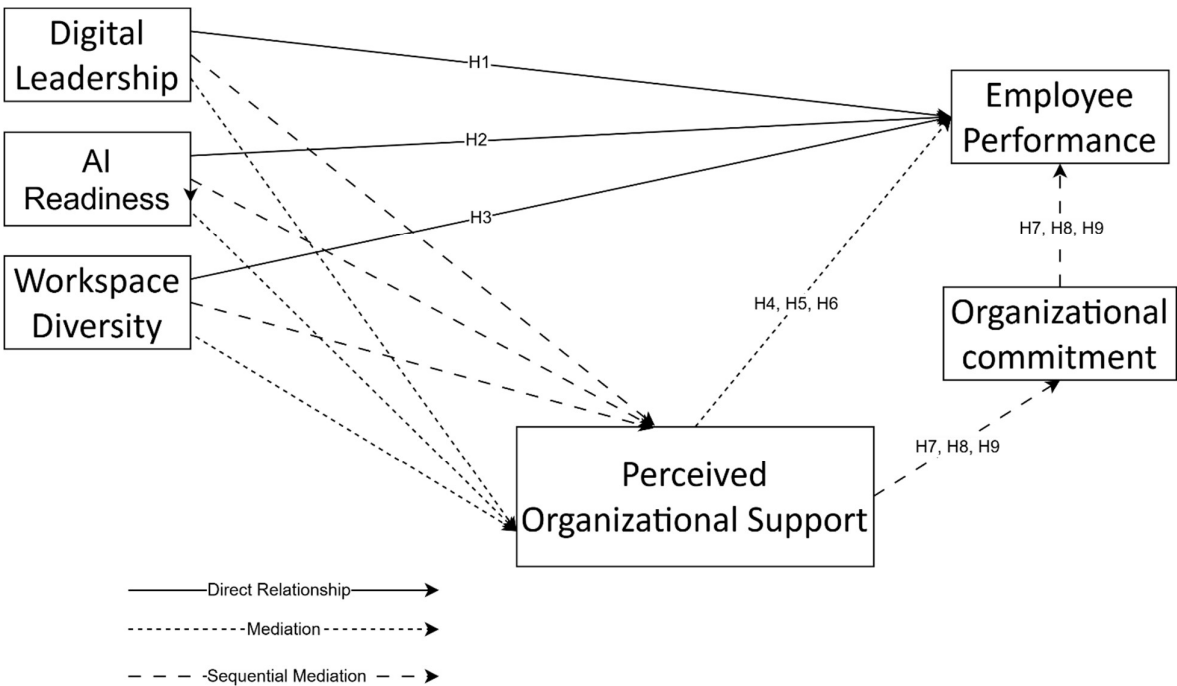


Figure 1: Conceptual Framework

Methodology:

3.1: Research Design and Approach

The aim of this study was to assess the impact of Digital leadership, AI readiness and workplace diversity on employee performance in Saudi Arabia’s Aviation sector by using a quantitative method; further it also examined the mediation role of perceived organizational support (POS) and organizational commitment (OC) and the sequential mediation via both POS and OC. The target population comprised of the different levels of aviation professional workers, i.e., ground handling staff, cabin crew, maintenance personnel, customer service representative and administrative staff working in various aviation organizations operating in Saudi Arabia. As the role of digital transformation and AI integration in the aviation industry of Saudi Arabia is crucial only those organizations employing or are in the process of employing the technology in their organization were included in this study. The sampling technique used for this study was stratified sampling with an

objective to collect data from different sub sectors of aviation industry in order to increase the generalizability of the findings across the entire aviation ecosystem of the kingdom.

The questionnaire measured employee-level perceptions on six main constructs that were practical: Digital Leadership (DL), AI-Readiness (AIR), Workplace Diversity (WD), Perceived Organizational Support (POS), Organizational Commitment (OC) and Employee Performance. Each construct had items that were drawn out of the literature and were meant to quantify the attitudes and behaviors which describe the construct.

Digital Leadership items, based on Oktaysoy, Topcuoglu and Kaygin (2022), engage the respondent to respond to questions about their level of comfort with digital tools, their self-rated level of expertise, the level of knowledge and the ability to drive and inspire the digital change (e.g., Items: I am driving the digital transformation forward proactively in our unit). The Min and Kim (2024) AI-Readiness include items that evaluate willingness to use AI, the desire to use AI in all operations and the strategic commitment with AI. Workplace Diversity items are developed by Mor Barak, Cherin and Berkman (1998); this concept provides the attitudes to cultural norms, diversity in perspectives, and team performance. The Perceive Organizational Support items are used to assess recognition, resources, flexibility, empowerment, and pride in the organization (Kusi, Zhao, & Sukamani, 2021). Items of organizational commitment measure employees' emotional attachment, pride and possibility to defend the organization; if they are loyal to it, proud to work in it and would recommend their workplace (Gumasing & Ilo, 2023). These measures link attitudes to results (retention, discretionary effort, long-term engagement). The items of the Employee Performance category are based on Zulkifli et al. (2023) which aim at quality, productivity, timeliness, independence and contribution to team outcomes. Combined, they made these validated scales offer a balanced combination of both attitudinal and behavioral predictors to investigate the relationships between digital and diversity initiatives and the results of employees.

3.2: Sample Size and Data Collection

To determine the sample size needed, Krejcie and Morgan (1970) formula was used to validate the sample size calculation in order to assure that 350 respondents would be higher than the minimum sample size needed to produce enough statistical power for conducting the structural equation modeling. A total of 600 questionnaires were distributed through online platforms (including LinkedIn, organizational email networks and professional aviation associations) and through personal administration at major Saudi Arabian airports, including King Abdulaziz International Airport (Jeddah), King Khalid International Airport (Riyadh) and King Fahd International Airport (Dammam). Data collection was carried out between January 2025 and April 2025, and 378 usable responses were completed, which represents a response rate of 63%.

Non-response bias was measured by comparing early and late respondents on the key demographic and construct items with independent sample t-tests; no statistically significant differences were found ($p > 0.05$) suggesting that non-response bias was not a significant problem (Armstrong et al., 1977). Common method bias was investigated by Harman's single factor test and the common method bias was found to be less than 34.2% of the total variance (much lower than Podsakoff et al., 2003 threshold of 50%). Additionally, collinearity VIF test was performed in full and all the values of VIF were less than 3.3 further confirming the absence of common method bias (Kock & N, 2015). The final sample consisted of a group of 378 professionals who work in Saudi Arabia's aviation industry. The respondents were cross-section of sub-sectors of aviation and represented by airlines (Saudia, Riyadh

Air, flynas, flyadeal). Around 42% of the respondents belonged to ground handling services, 26% were airport operation, 17% were aviation maintenance, 15% were aviation support services such as catering and cargo.

4. Results

4.1 Measurement Model

Table 1 and Figure 1 show the reliability and validity scores of constructs related to the study. Cronbach's alpha values range from 0.809 to 0.931, which is higher than the widely accepted level of 0.70, suggesting the reliability of scales used (Hair et al., 2019). Composite reliability estimates (ρ_c) are also high estimates of internal consistency that range from 0.875 to 0.942, further providing evidence of measurement consistency. The Average Variance Extracted (AVE) values are all above the 0.50 threshold, ranging between 0.617-0.666 and indicate adequate convergent validity (Fornell & Larcker, 1981). Collectively, these results demonstrate that the constructs addressed in the current study are reliable and valid, and provide a reasonable basis for future structural equation modeling and hypothesis testing.

Table 1

Confirmatory Factor Analysis (Factor Loadings)

	AI Readiness	Digital Leadership	Employee Performance	Organizational Commitment	Perceived Organizational Support	Workplace Diversity
AR1	0.842					
AR2	0.816					
AR3	0.806					
AR4	0.800					
DL1		0.774				
DL2		0.818				
DL3		0.779				
DL4		0.789				
DL5		0.791				
DL6		0.786				
EP1			0.739			
EP2			0.805			
EP3			0.783			
EP4			0.795			
EP5			0.790			
EP6			0.803			
EP7			0.782			
EP8			0.759			
EP9			0.786			
EP10			0.812			
OC1				0.834		
OC2				0.798		
OC3				0.825		
OC4				0.801		
POS1					0.835	

POS2	0.804	
POS3	0.798	
POS4	0.753	
WPD1		0.755
WPD2		0.798
WPD3		0.788
WPD4		0.796
WPD5		0.779
WPD6		0.821

Note: AR = AI Readiness; DL = Digital Leadership; EP = Employee Performance; OC = Organizational Commitment; POS = Perceived Organizational Support; WPD = Workplace Diversity. All factor loadings exceed the recommended threshold of 0.70.

Table 2

Construct Reliability and Validity

Construct	Cronbach's Alpha	Composite Reliability (rho_c)	AVE
AI Readiness	0.835	0.889	0.666
Digital Leadership	0.880	0.909	0.623
Employee Performance	0.931	0.942	0.617
Organizational Commitment	0.831	0.888	0.664
Perceived Organizational Support	0.809	0.875	0.637
Workplace Diversity	0.879	0.908	0.623

Note: AVE = Average Variance Extracted. All values exceed recommended thresholds (Cronbach's $\alpha > 0.70$, CR > 0.70 , AVE > 0.50).

Table 2 shows the results of the confirmatory factor analysis in terms of standardized factor loading of individual survey items on their corresponding latent constructs. Loadings greater than 0.70 are typically accepted as strong; while others may be retained if AVE 0.50 and CR 0.70 (Hair et al., 2019). The factor loadings range between 0.739 to 0.842, wherein all the items are found to exceed 0.70 and are therefore quite reliable with significant contributions to their respective constructs. For AI Readiness loadings are 0.800 to 0.842 and all items perform excellently. Digital Leadership items have loadings ranging from 0.774 to 0.818 and all items are performing well. Employee Performance items are all highly loaded between 0.739 and 0.812. Perceived Organizational Support items exhibit loadings ranging from 0.753 to 0.835, which demonstrates their validity in helping to constitute the construct. Organizational Commitment items have loadings from 0.798 to 0.834, which justifies the validity of the construct. Workplace Diversity items also have high loadings of 0.755 to 0.821. Overall, the CFA results are consistent with the unidimensionality and accuracy of the measurement of the latent variables.

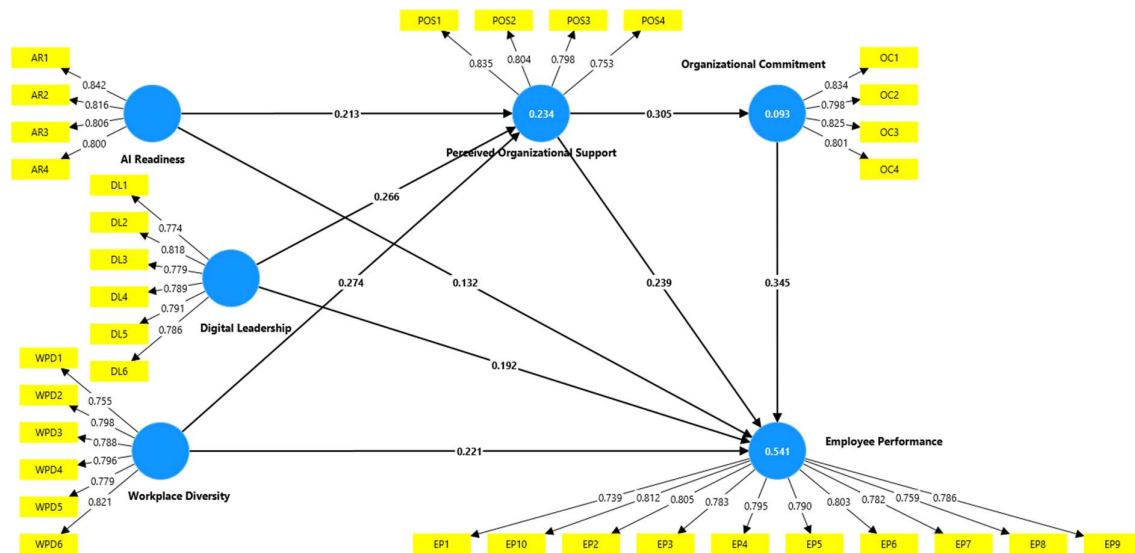


Figure 2: Measurement Model

Table 3 shows the Heterotrait-Monotrait (HTMT) correlation ratio in order to test for discriminant validity between study constructs. HTMT lower than 0.85 (strict criterion) and 0.90 (liberal criterion) are the criterion for discriminant validity (Henseler, Ringle, & Sarstedt, 2015). All the HTMT values are below the commonly recommended cutoff value of 0.90, ranging from 0.097 to 0.649, showing that the constructs are clearly distinct from each other. The highest HTMT value in this case is 0.649 between Employee Performance and Organizational Commitment, which is well under the cutoff indicating excellent discriminant validity. And the other correlations are moderate relationships between Employee Performance and Perceived Organizational Support (0.590) and Workplace Diversity and Employee Performance (0.485). These results taken together confirm that each construct in this study represents a unique concept that is empirically distinct from other constructs in the model.

Table 3

Heterotrait-Monotrait (HTMT) Ratio

Construct	AR	DL	EP	OC	POS	WPD
AI Readiness						
Digital Leadership	0.119					
Employee Perf.	0.397	0.425				
Org. Commitment	0.339	0.307	0.649			
Perceived Org. Sup.	0.340	0.357	0.590	0.371		

Construct	AR	DL	EP	OC	POS	WPD
Workplace Diversity	0.203	0.097	0.485	0.350	0.393	

Note: All HTMT values are below the recommended threshold of 0.90, confirming discriminant validity.

Table 4 shows the Fornell-Larcker criteria for testing the discriminant validity. According to Fornell and Larcker (1981), discriminant validity occurs when the square root of AVE of each construct (diagonal values) exceeds its correlations with other constructs. The diagonal values in Table 4 are the square root of AVE and off diagonal values are inter-construct correlations. All the diagonal values are greater than their row and column counterparts confirming the discriminant validity. For example, AI Readiness has a square root of AVE of 0.816 more than its maximum correlation of 0.358 with Employee Performance. Similarly, Employee Performance has a square root of AVE of 0.786, which is higher than its maximum correlation of 0.574 with Organizational Commitment. These results add to the evidence that the constructs included in this study are distinct, and measure different underlying phenomena.

Table 4

Fornell-Larcker Criterion for Discriminant Validity

Construct	AR	DL	EP	OC	POS	WPD
AI Readiness	0.816					
Digital Leadership	0.102	0.790				
Employee Perf.	0.358	0.388	0.786			
Org. Commitment	0.288	0.266	0.574	0.815		
Perceived Org. Sup.	0.288	0.309	0.515	0.305	0.798	
Workplace Diversity	0.174	0.077	0.442	0.299	0.332	0.790

Note: Diagonal values (bold) represent the square root of AVE; off-diagonal values represent inter-construct correlations. Discriminant validity is confirmed when diagonal values exceed off-diagonal values in the same row and column.

Table 5 shows the variance inflation factors (VIF) analysis of constructs in the study. The results show that all the VIF values are less than 1.014 to 1.323 which are very less than the widely used benchmark of 5.0 (Hair et al., 2019). This test shows that multicollinearity is not a serious problem in this study. In particular, Digital Leadership has the lowest VIF value of 1.014 when predicting Perceived Organizational Support, which implies little collinearity with other predictors. AI Readiness (1.040), Workplace Diversity (1.035) and the other constructs also exhibit comparatively low levels of collinearity. The highest VIF value 1.323 for the Perceived Organizational Support as the predictor of Employee Performance is much less than the cutoff, which ensures that the regression estimates are valid and not seriously affected by collinearity. Overall, the results from VIF justify the use of all constructs in the model without worrying that multicollinearity will affect the results.

Table 5*Variance Inflation Factor (VIF) Analysis*

Predictor	POS	OC	EP
AI Readiness	1.040		1.148
Digital Leadership	1.014		1.154
Workplace Diversity	1.035		1.189
Organizational Commitment		1.000	1.262
Perceived Organizational Support			1.323

Note: POS = Perceived Organizational Support; OC = Organizational Commitment; EP = Employee Performance. All VIF values are below 5.0, indicating no multicollinearity concerns.

Table 6 shows the coefficient of determination (R^2), effect sizes (f^2), and predictive relevance (Q^2) of the main endogenous constructs in the structural model. Employee Performance has a R^2 which is equal to 0.541, revealing the amount of variance explained by the predictor variables is about 54.1%, showing a large amount of performance explained based on Cohen's (1988) guidelines. Perceived Organizational Support has an R^2 of 0.234 and Organizational Commitment an R^2 of 0.093 which are moderate and small levels of variance explained respectively. The Q^2 predict values of all of the endogenous constructs are positive, with Employee Performance revealing $Q^2 = 0.361$, Perceived Organizational Support revealing $Q^2 = 0.218$, and Organizational Commitment revealing $Q^2 = 0.107$, which indicates an acceptable level of predictive validity of the model (Shmueli et al., 2019). The RMSE and MAE values further provide good model fit and low prediction errors. The effect sizes (f^2) provide even more force to the interpretation. Based on Cohen (1988) standards, Organizational Commitment shows large effect size ($f^2 = 0.206$) on Employee Performance, while Perceived Organizational Support ($f^2 = 0.094$) and Workplace Diversity ($f^2 = 0.090$) shows medium effect size. Digital Leadership ($f^2 = 0.069$) and AI Readiness ($f^2 = 0.033$) have small (0.069) to medium (0.033) effect sizes. These findings collectively validate that the model is highly explanatory and predictive with predictors having statistically significant and practically important effects on the performance outcomes of employees.

Table 6*Model Assessment Results (R^2 , Q^2 predict, RMSE, MAE, and Effect Sizes f^2)*

Construct	R^2	Q^2 predict	RMSE	MAE
Employee Performance	0.541	0.361	0.804	0.650
Perceived Org. Support	0.234	0.218	0.891	0.720
Org. Commitment	0.093	0.107	0.950	0.780

Effect Sizes (f^2) on Employee Performance:

Relationship	f^2
AI Readiness $\otimes$ Employee Performance	0.033
Digital Leadership $\otimes$ Employee Performance	0.069

Relationship	f ²
Organizational Commitment ⊗ Employee Performance	0.206
Perceived Org. Support ⊗ Employee Performance	0.094
Workplace Diversity ⊗ Employee Performance	0.090

Note: f² effect sizes: 0.02 = small, 0.15 = medium, 0.35 = large (Cohen, 1988). Q² > 0 indicates predictive relevance. RMSE = Root Mean Square Error; MAE = Mean Absolute Error.

Table 7 shows the result of direct path analysis, which shows the strength, significance of the direct relationship between independent variables (Digital Leadership, AI Readiness, Workplace Diversity) and dependent variable (Employee Performance). All the hypotheses performed in this analysis were statistically significant with p-values < 0.001, which shows good evidence for the assumed direct effects. Digital Leadership had a positive and significant impact on Employee Performance (b = 0.192, t = 5.017, p < 0.001) supporting H1. This finding suggests that leadership behaviours that are open to digital technologies and promote a digital culture at work play an important role in improving employee performance outcomes. AI Readiness was also found to have a statistically significant and positive effect on Employee Performance (b = 0.132, t = 3.587, p < 0.001), supporting H2. This implies that organizational preparedness for AI adoption and implementation has a positive effect on the performance of the employees in doing their job. Workplace Diversity showed the strongest direct impact between the three independent variables. path coefficient = 0.221 (t = 6.000, p < 0.001), pH3 is confirmed. This shows that diverse composition of the workforce, including different aspects of diversity, is a crucial element in enhancing the performance of employees in the Saudi aviation industry.

Table 7

Direct Path Analysis Results

H	Relationship	β	SD	t-value	p-value	Decision
H1	DL ⊗ EP	0.192	0.038	5.017	0.000	Supported
H2	AR ⊗ EP	0.132	0.037	3.587	0.000	Supported
H3	WPD ⊗ EP	0.221	0.037	6.000	0.000	Supported

Note: DL = Digital Leadership; AR = AI Readiness; WPD = Workplace Diversity; EP = Employee Performance; β = standardized path coefficient; SD = standard deviation. All coefficients are statistically significant at p < 0.001.

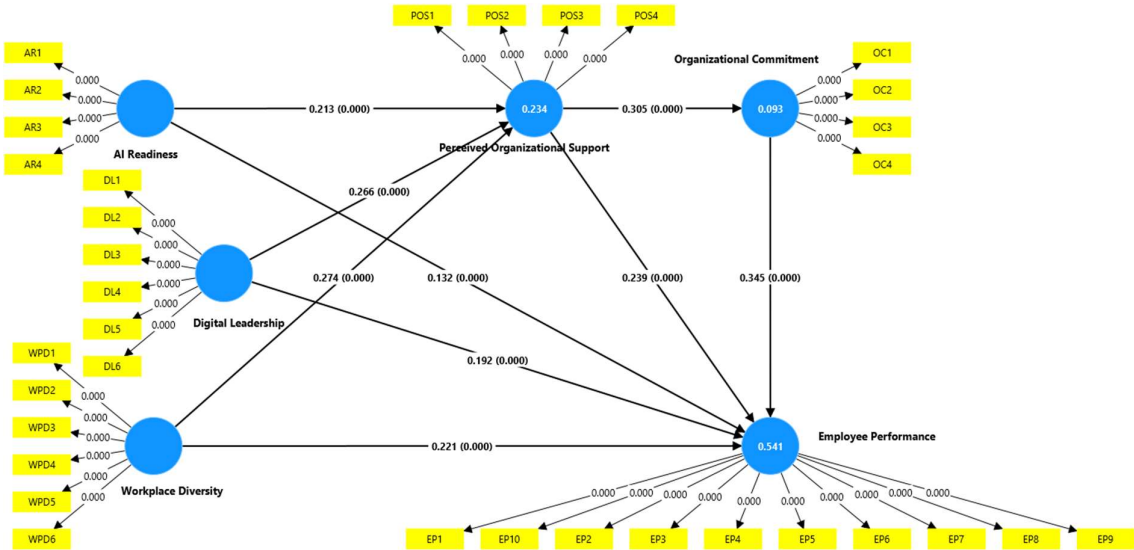


Figure 2: Structural Model

Mediation Effects of Perceived Organizational Support (POS) on Digital Leadership, AI Readiness and Workplace Diversity and its relationship with Employee Performance are presented in table 8. All the mediation paths are statistically significant ($p\text{-value} < 0.001$), confirming the important role of Perceived Organizational Support as a mediating mechanism. For Digital Leadership, POS mediated its effect on Employee Performance (indirect effect $b = 0.064$, $t = 4.633$, $p < 0.001$), thus confirming H4. The findings suggest that Digital Leadership enhances Employee Performance directly and indirectly via the facilitation of employee perceptions that their contributions are valued by the organization and that the organization is concerned about their well-being. Similarly, the effect of AI Readiness on Employee Performance was significantly mediated by POS (indirect effect $b = 0.051$, $t = 3.689$, $p < 0.001$), which supported H5. This confirms that AI Readiness boosts performance outcomes partly by creating a sense of being supported by their organization during the transition of technology. Workplace Diversity was also found to mediate through POS (indirect effect $b = 0.066$, $t = 4.191$, $p < 0.001$), indicating support for H6. This result draws our attention to the importance of diverse work environments in building perceptions of organizational support that in turn leads to improved employee performance. Given that both direct and indirect effects are significant, these results suggest partial mediation instead of full mediation, which means that the independent variables affect Employee Performance through various paths.

Table 8

Mediation Analysis of Perceived Organizational Support

H	Relationship	Direct	Indirect	SD	t-value	p-value	Decision
H4	DL $\odot$ POS $\odot$ EP	0.092	0.064	0.014	4.633	0.000	Supported
H5	AR $\odot$ POS $\odot$ EP	0.073	0.051	0.014	3.689	0.000	Supported
H6	WPD $\odot$ POS $\odot$ EP	0.094	0.066	0.016	4.191	0.000	Supported

Note: DL = Digital Leadership; AR = AI Readiness; WPD = Workplace Diversity; POS = Perceived Organizational Support; EP = Employee Performance. Partial mediation is established when both direct and indirect effects are significant.

Table 9 shows the serial mediation effects with Perceived Organizational Support and Organizational Commitment on the links among the independent variables and Employee Performance. All serial mediation paths are significant statistically with good support to the proposed sequential mediation mechanisms. In the case of Digital Leadership, POS and Organizational Commitment were important in the serial mediation ($b = 0.028$, $t = 3.948$, $p < 0.001$), which underpins H7. This result means that Digital Leadership does not only directly and indirectly affect Employee Performance by means of POS but also follows a sequential course in which POS positively affects Organization commitment which further boosts the employee performance. On the same note, serial mediation was found to be significant in AI Readiness ($b = 0.022$, $t = 3.376$, $p = 0.001$), in line with H8. This implies that the willingness of the organization to implement AI would provide a favorable setting that would reinforce the commitment of employees, resulting in better performance results. Serial mediation by the Workplace Diversity also showed a strong mediation by the two mediators ($b = 0.029$, $t = 3.801$, $p < 0.001$), which supported H9. This observation is important in highlighting the fact that the most viable workplaces regard a sense of organizational support as a key contributor towards developing the commitment of their employees and consequently resulting in high performance. These results of mediation underscore the most important contributions of the perceived organizational support and organizational commitment as the mechanisms transforming the organizational initiatives into quantifiable performance benefits which aligns with the organizational support theory as well as social exchange theory.

Table 9

Serial Mediation Analysis through POS and Organizational Commitment

H	Relationship	β	SD	t-value	p-value	Decision
H7	DL $\rightarrow$ POS $\rightarrow$ OC $\rightarrow$ EP	0.028	0.007	3.948	0.000	Supported
H8	AR $\rightarrow$ POS $\rightarrow$ OC $\rightarrow$ EP	0.022	0.007	3.376	0.001	Supported
H9	WPD $\rightarrow$ POS $\rightarrow$ OC $\rightarrow$ EP	0.029	0.008	3.801	0.000	Supported

Note: DL = Digital Leadership; AR = AI Readiness; WPD = Workplace Diversity; POS = Perceived Organizational Support; OC = Organizational Commitment; EP = Employee Performance. β represents the serial indirect effect coefficient.

5. Discussion

Employee performance in the fast-rising aviation industry of Saudi Arabia is fueled by digital leadership, AI readiness and diversity in the workplace. This paper discusses the connections of these factors to the employee performance in the context of Vision 2030 where the digital transformation and the diversity of the workforce meet. Each of the hypotheses was proved. The results have indicated that individual initiatives are not enough; they need to be supported with good perceived support and commitment.

Such results contribute to the idea that the organizational practices should be integrated into the cultures that encourage commitment development and improve the potential within an organization (Kurtessis et al., 2017). Digital initiatives aligned with the set strategy along with the enabling mechanisms not only improve the operational efficiency but can also serve as the major factors of engagement and commitment of employees and long-term performance (Rhoades et al., 2002).

This research contributes to the current aviation organizations by conducting a systematic analysis of the direct contributors in Digital Leadership, AI Readiness, and Workplace Diversity as well as the mediated variables Perceived Organizational Support and Organizational Commitment. It demonstrates that digital and diversity initiatives can be able to build sustainable competitive advantages within the turbulent business environment.

The result of the confirmations of the H1, that Digital Leadership is having positive impact on Employee's Performance, are the testimonies of the transformational capabilities of digitally-oriented leadership to the aviation firms in Saudi Arabia. The empirical evidence speaks to the reality that leaders that embrace the digital technologies, foster innovation, and create a digital culture significantly improve the daily operations of their business by setting higher standards of efficiency, adaptability and responsiveness in the workplace (Kane et al., 2019). This leads to better employee engagement, less resistance to change and optimal use of technological resources which are key to improved productivity as a whole. The use of digital leadership practices also drives competitive advantage by allowing organizations to build differentiated capabilities that set them apart such as data-driven decision-making, agile work processes, and continuous innovation. These results are consistent with what is known by Avolio et al. (2014), which reaffirms that digital leadership is not only a technological trend, but a strategic imperative that changes the nature of organizational outcomes. The implication is that the benefits of digital leadership are multiple for Saudi aviation organizations that adopt digital leadership, and therefore it is important to preserve the strategic importance of digital practices in leadership.

H2 validates the readiness of AI, which improves employee performance. The research indicates that any company investing in AI infrastructure, training and planning offers employees with the resources and opportunities that help improve job performance (Tambe et al., 2019). Being prepared to AI strategically and investing in technology enables the employees to make decisions driven by data and their routine jobs may be automated so that they can provide more significant services. This will ease cognitive load, the quality of decisions will increase and the company will adapt to market changes in a short period of time. Previous studies by Fountaine et al. (2019) also reported AI preparedness as a factor contributing to organizations being more competitive through the promotion of data-driven solutions, predictive analytics and other real-time responses to operational issues. Moreover, AI preparedness enhances efficiency and minimizes errors and wastage of procedures. Such findings are mirrored by Ransbotham et al. (2020) who underscore AI preparedness as one of the pillars of high-performing organizations that are innovative.

H3 affirms that diversity at the workplace has a positive and direct impact on employee performance which points out the importance of a diverse workforce in operational excellence. Diversity in the form of demographic, cognitive, or experienced, transforms creativity, problem-solving or innovation abilities (Guillaume et al., 2017). This is confirmed by our empirical data which shows that when teams are more diverse in terms of perspective and skills, having different experiences, they find the quality of the decisions made to be better. This is because they tend to be more innovative and thus, they become more responsive to customers which also translates into a large improvement in performance. It is important to note that workplace diversity directly influenced employee performance ($b = 0.221$) compared to digital leadership ($b = 0.192$) and AI readiness ($b = 0.132$). This trend brings out the fact that diversity extends beyond the properties of an individual to cognitive, experiential and cultural richness. As much as digital leadership and AI readiness offer some potent solutions, it requires a

diverse workforce to make the most of them. In such a way, the effect of diversity in the workplace can have a more localized and direct influence on performance. These findings have significant resource-distribution ramifications to Saudi aviation. In line with the diversification agenda and vision 2030 priorities of the country, investing in diversity of its workforce ought to go hand in hand with the technological efforts. Companies that develop strong diversity initiatives and create inclusive cultures are most likely to be in a good position to utilize digital leadership and AI readiness.

The support for H4, H5 and H6 that POS mediates independent variables with EP draws attention to the working mechanism of how organizational efforts translate into performance outputs. The mediating effects of POS in this model highlights the fact that the direct and isolated roles of DL, AIR and WD to foster performance did not happen from nowhere. It is because if decision makers do not use proper determinants that make employees feel worth and support, they would not achieve any results for employee performance. As a case in point, the mediating effect of POS presented above indicates that DL, AI-readiness and WD independently and directly do not lead to superior performance unless supporting mechanisms are implemented across the system that led employees to feel valued and cared for. These perceptions enable the staff to be more satisfied, engaged and committed through which they can contribute in actual performance improvements in company.

The mediation effect supports the fact that POS is a developing ability that allows companies to convert strategic efforts into employee-level results, which evoke the creation of psychological and behavioral improvements. This confirms the perception of Rhoades et al. (2002) that the concept of perceived support is not just an attitude of an employee but a dynamic organizational ability that converts organizational investments into workforce results. Findings such as it are not new to earlier studies by Kurtessis et al. (2017), which emphasize the role played by favorable organizational conditions in realizing their leadership and diversity investments. Moreover, Shanock et al. (2019) have also highlighted that the impact of organizational initiatives on employee performance is reinforced by POS, which allows the creation of a feeling of obligation, trust, and reciprocity. Indicatively, where workers feel that their organization helps them grow in the process of introducing AI, then they tend to adopt new technologies and use them well. In the same way, an environment that is supported by real organizational support has employees in various backgrounds feel more part of the organization and thus they can give more towards organizational objectives. These abilities are important in the Saudi aviation environment where swift change and nationalization of the workforce present both opportunities and challenges. All these results support the thesis that organizational efforts should be combined with support systems to generate quantifiable results. In the case of Saudi aviation companies, the implications of the findings concern the fact that investment into the digital leadership, AI preparedness, and diversity needs to be supported with the culture, practices, and processes formation that encourages employee perceptions of support.

The results that support H7, H8, and H9 show that Perceived Organizational Support and Organizational Commitment provide sequential influences of the independent variables to the Employee Performance. Social Exchange Theory is a strong defense behind this association whereby organizational resources will attain their value and translate into performance results only when they are appropriately used and developed to establish reciprocal relationships (Cropanzano et al., 2005). This sequential mediation highlights the critical aspect of both POS and Organizational Commitment as mediators to eliminate the gap between organizational efforts and the reality on performance improvements (Meyer et al., 1991).

This sequential mediating relationship can also be empirically supported with respect to Allen et al. (2003), claiming that, the contribution of organizational support with respect to performance is mainly achieved via its impact on the establishment of organizational commitment which subsequently transpires to discretionary efforts and improved performance. Equally, Ng et al. (2008) revealed that employees who are supported exhibit a greater affective commitment hence resulting into an increase

in the intensity of job performance. Although POS provides the psychological basis of being appreciated and taken care of, Organizational Commitment offers a much-needed extra point of attachment by means of identification, involvement, and loyalty. This allows the workers to perform beyond their official job description by adding their free time which greatly improves the total performance.

The serial mediation also supports the conceptualization that the POS value is not only limited to the direct satisfaction and attitude but its real benefits are on the capacity to be committed which supports the long-term performances in terms of higher efforts, perseverance, and organizational citizenship behaviors. Besides, performance boosting is the result because organizational commitment enhances identification with organizational goals and readiness to make significant efforts to enable workers to achieve their best performance. These findings align with recent empirical studie by Eisenberger et al. (2020) indicate that organizations, especially, Saudi aviation companies should not simply invest in digital leadership, readiness to AI, and diversity training programs but rather create supportive cultures that could result in organizational commitment and performance-maximization outcomes.

5.1 Theoretical Implications

The study has some important theoretical implications to the study of organizational behavior, human resource management, and aviation management. To begin with, this study fills the research gap in the literature on current organizational practices, since its empirical evidence of the direct impacts of Digital Leadership, AI Readiness and Workplace Diversity on Employee Performance is largely unknown on the context of developing countries, whereas most of the current literature discusses the role of these practices in developed economies. The Saudi aviation industry offers a specialized scenario wherein high rates of modernization, nationalization of labor work (Saudization), and the transformation initiatives are defined by Vision 2030, which might not be reflected in other settings in studies.

Second, the theoretical models based on the specification of Perceived Organizational Support as a mediating mechanism develops the theory by putting emphasis on how an organizational initiative leads to values, thus, going beyond the simplistic practice-performance relationships, to explore the crucial role of perceptions among employees. The discovery builds on the Organizational Support Theory (Eisenberger et al., 1986) by showing that the theory can be applied to understand how digital and diversity initiatives are converted to performance results. The research demonstrates that POS is not just a by-product of supporting practices, but a process that converts investments of an organization into workforce enhancements.

Third, serial mediation by both Perceived Organizational Support and Organizational commitment involves the use of the Social Exchange Theory in models of organizational practices focusing on the idea of performance benefits depending on sequential psychological factors as perceptions of support and commitment attitudes (Blau, 1964). This integrative paradigm allows making more detailed, multi-layered models of employee performance facilitated by practice. Combining leadership, technology, diversity, and psychological Lenses, the study offers a solid theoretical framework that can serve to inform future studies exploring the issue of organizational transformation in different settings, thus bringing the theory into a more holistic and more practical approach. Fourth, the paper can be relevant in the cross-cultural verification of the Western theories in the Middle Eastern contexts proving that the mechanisms of the Organizational Support Theory and Social Exchange Theory can be applied to the Saudi cultural context and also showing special processes associated with the workforce nationalization and high-speed modernization.

5.2 Practical and Managerial Implications

Technology acquisition and diversity interventions are not the sole methods that can enhance employee performance in the aviation sector (particularly in a fast-emerging environment like Saudi Arabia).

Digital leadership, AI preparedness, workplace diversity is useful but it seems that their usefulness is evident only when employees are supported and are really committed to the objectives of their organization. It is advisable that managers combine investments in digital tools and AI with very strong support systems (training, psychological support, inclusive policies, change-management practices, etc.) that allow developing trust and diminishing the anxiety. The commitment level of any organization serves as an intermediary and transforms potential into outcome because without the level of participation and buy-in among the employees even a well-planned program is not going to be implemented.

In the case of Saudi aviation companies, this means the following: invest in digital-leadership training, AI readiness plus employee-assistance schemes, enabling cultures, gradual implementation strategies to boost productivity, decision making and innovation. The policymakers can contribute by sponsoring industry wide training facilities and joint development platforms which increase the level of support within the organizations. The policymakers can contribute by sponsoring industry wide training facilities and joint development platforms which increase the level of support within the organizations.

The study supports the point that the improvement in performance is not linear and it is unilateral but the result of the interaction between technology, capacity of the human resource, and organizational climate. Leaders ought to consider digital transformation as a socio-technical initiative which harmonizes vision of leadership and staff well-being and inclusiveness. By so doing, one will unlock long-term, quantifiable service quality and operational efficiency improvements.

6. Limitations and Future Directions

The presented study enriches our digital transformation, yet it has obvious boundaries that the next research should expand on. Saudi air-lines have been chosen as a sample and thus the findings might not be applicable to other industries and other nations where the level of digital maturity and cultural context is different. There could be other moderating factors between the observed relationships including organizational culture, leadership style, job characteristics, technology self-efficacy, openness to change and career stage that warrant attention. Mixed-method research and case studies might provide more detailed information on implementation issues, attitude of the employees, and change management. Last but not least, the high pace of technological alteration, remote and hybrid employment and emerging dimensions of diversity highlights the necessity to keep updating the models and conducting comparative studies within the GCC and in other countries to assemble more articulate and practice relevant theories.

Competing Interests: The authors declare that they have no competing interests.

'Consent to Publish declaration: not applicable

Consent to Participate declaration: Informed consent was obtained from all individual participants included in the study before their participation. The purpose of the research was clearly explained to the respondents, and participation was entirely voluntary. Participants were informed that they could withdraw from the study at any stage without any consequences. All responses were collected anonymously, and no personally identifiable information was recorded.

Ethics declaration: This study received ethical approval from the Ethics Review Committee of Lincoln College University, Malaysia. The research protocol was approved in accordance with the committee's ethical guidelines and regulations for research involving human participants. All procedures performed in this study complied with recognized ethical standards for social science research, and informed consent was obtained from all participants before data collection.

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Availability of data and materials: The datasets generated and analyzed during the current study are not publicly available due to ethical and confidentiality considerations related to human participant data but are available from the corresponding author upon reasonable request.

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