“How human AI skills and competitive psychological climate drive organizational innovation”

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HOW HUMAN AI SKILLS AND COMPETITIVE PSYCHOLOGICAL CLIMATE DRIVE ORGANIZATIONAL INNOVATION

Abstract

This paper investigates the impact of human AI skills and competitive psychological climate on organizational innovation in Jordan's telecommunication companies: Zain, Orange, and Umniah. A descriptive-analytical method was employed whereby structured questionnaires were administered to 552 employees. The data were analyzed using partial least squares structural equation modeling (PLS-SEM). The results provide evidence that human AI skills ($\beta = 0.68$, $p < 0.001$) have a strong positive impact, which is slightly lower than that of competitive psychological climate ($\beta = 0.74$, $p < 0.001$) on organizational innovation. Additionally, the competitive psychological climate moderated the effects of human AI skills and organizational innovation ($\beta = 0.72$, $p < 0.001$). Based on these findings, integrating advanced human AI competencies with a constructively competitive psychological environment is essential for innovation enhancement. The paper highlights the need to raise awareness of AI skill deficiencies and encourage a sense of ethical competition in the industry to drive innovation, thereby offering guidance to telecom companies in Jordan that face the need for digital transformation.

Keywords human AI skills, competitive psychological climate, organizational innovation, telecommunications, Jordan

JEL Classification O31, O33, M12, M54, D23, L96

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INTRODUCTION

As global industries increasingly embrace digitalization, organizations face the importance of fostering innovation through the integration of human skills and artificial intelligence (AI). The use of AI is one of the fundamental ways that have changed the game in business activities (Al-Khatib & Ramayah, 2024). There is no denying that AI has transformed various sectors. However, technology, as such, cannot bring success on its own. Success is only achievable through the soft skills and critical thought processes, such as analyzing, adapting, and creativity, that AI fosters in understanding and interacting with systems. At the same time, organizational culture has a nuanced impact on the alignment of innovation.

On one hand, a collaborative culture enhances knowledge-sharing and collective problem-solving (Marić et al., 2022). On the other hand, excessive internal competition can inhibit true collaboration. If competition is too fierce, employees may pay more attention to short-term victories and be less willing to innovate, experiment, or accept the risk of failure (Salih et al., 2024). Thus, organizations face the dual challenge of striking a balance between risk and encouraging healthy competition. The mutual reinforcement of human and machine skills, complemented by a competitive psychological climate, is the foundation of innovation within an organization. Employees with an adequate level of skills focused on AI can make use of demanding algorithms and data analysis

to enhance decision-making, optimize processes, and develop new products and services (Chuang et al., 2024). If these capabilities are developed in a healthy, competitive, yet cooperative setting, they become the fuel for growth and creative problem-solving (Charitha & Hemaraju, 2023).

However, the attainment of such coherence is not easy. For example, Jordanian telecommunication companies face difficulty in internalizing AI competencies in their workforces or creating a climate that is favorable for creativity. They are part of the industry, which is inherently associated with technological progress, yet these companies struggle to compete with innovation at the global level. These challenges highlight the imperative of understanding the antecedents and hindrances of organizational innovation. Nonetheless, the adoption of technologies such as artificial intelligence in the operations of telecommunication companies in Jordan remains limited. A key obstacle is the lack of specialists with a high level of proficiency in new AI technology. This gap hinders potential leverage in the use of AI technologies by companies in a bid to achieve higher levels of competitiveness and growth. In addition, as reengineering efforts in Jordanian companies are still developing, some organizational cultures may restrict the building of a competitive psychological environment.

1. LITERATURE REVIEW

Workforce AI skills encompass both technical and adaptive skills required by individuals and groups to utilize artificial intelligence technologies within an organization (Bobițan et al., 2024). Technical skills encompass the application of AI technologies, including machine learning, natural language processing, and robotics. These are crucial in building and operating AI systems that can be utilized for tasks ranging from simple data management to complex process automation (Babashahi et al., 2024). Adaptive skills include the application of AI to work practices, predicting the ways in which AI will module the business, and making requisite changes in the business processes (Du, 2024). They involve some level of intelligence, thinking, and moral judgment in trying to achieve the right resolution or recommendations on the AI aspects to be undertaken within the organization. For instance, Bughin (2023) explain that the decision-making in organizations that are more AI competent is comparatively better than that of other firms because the timeliness and accuracy of the data analysis made possible by the AI systems are high. This helps to enhance the decision-making process, which in turn enables better strategic planning and more effective resource utilization. Furthermore, AI skills have been linked to enhanced operational effectiveness. As Mandala and Surabhi (2024) observe, companies that embed AI within their processes are able to reduce costs through spatially and temporally dispersed organization of routine work and logistics and divert human resources from routine tasks to creative and strategic functions. In addition, problem-solving in companies is assisted by AI through its ability to represent and manipulate situations and predict outcomes, which helps in identifying issues and creating solutions for them in advance. However, such benefits are often hampered by the constraints that the organizations face when developing AI skills internally. One of the major constraints is the skills gap. As observed by the World Economic Forum (2023), there are significant shortages in the available labor force and the required skills. This gap further complicates the successful adoption and expansion of AI technologies. Moreover, there is usually a lack of details at the managerial level with respect to how the implemented AI will work, which often results in suboptimal deployment of such objects of technology (Brink et al., 2024). Such training and development activities should include all employees who are potentially involved in the AI operations and not just the technical staff that embraces AI and ultimately drives organizational innovation.

When considering the forms of innovation within an organization, one can identify product or service innovation, process innovation, and business model innovation. Product innovation is defined as the introduction of goods or services that are new to the market or that have new features, attributes, or performance that are enhanced (Bataineh et al., 2024). Process innovation is particularly related to the operational activities that lead to the creation and distribution of products

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or services, aiming to achieve better productivity, quality, or cost (Rammer, 2023). Business model innovation refers to the changes in the method of creating and providing value, including the processes of interacting with customers, the monetization of services, or the internal organization of a company (Massa & Tucci, 2020). None of these forms of innovation is isolated by itself because, in many cases, they interrelate and propel the growth and competitiveness of an organization's strategy. Sahoo et al. (2024) showed that organizations that dedicate resources to building such internal AI capabilities were able to realize product innovations where innovation circles are being revolutionized by the use of AI analytics and performance. As for the influence of psychological climates, Baer and Frese (2003) found that organizations with encouraging climates for risk-taking and valuing creative ideas led to increased reporting of product and process innovations.

Many theoretical underpinnings assist in understanding the relationship between AI skills, competitive psychological states, and their impact on innovations. Based on Barney's (1991) resource-based view (RBV), organizational resources and capabilities are fundamental for achieving competitive advantage. In tandem with this view, the development of AI skills throughout the organization can be regarded as a strategic resource that contributes to the creation of an organizational culture that embraces AI and consequently enhances innovation. With the help of AI skills, firms are able to manage both their internal data and external networks, hence initiating innovations that competitors find difficult to copy (Bughin, 2023).

The dynamic capabilities framework extends the RBV by addressing the use of structure and management to qualify the processes of integrating, developing, and reconfiguring internal and external capabilities to secure new operations in lengthening environments (Teece et al., 1997). In this context, AI skills can be classified as a dynamic capability of the firm in that they help the firm constantly innovate by scouting for and exploiting new opportunities (Liu et al., 2024). At the same time, and perhaps rather importantly, the competing values framework (CVF), formulated by Quinn and Rohrbaugh (1983), indicates that it is the psychological climate of the organization that provides information on which of the four models of the effectiveness of the organization, including that of innovation, is more adopted. By integrating the competing requirements of flexibility and stability, internal and external focus, and positioning, an organization may provide an enabling environment for constant and progressive innovations (Zeb et al., 2021).

The term "competitive psychological climate" refers to the shared views and beliefs of workers regarding the degree of competition or contest within an organization (Murtza & Rasheed, 2023). It comprises various aspects, such as the degree of competition instilled, supported, and compensated for (Xu et al., 2023). The features of the competitive psychological climate include ambitious targets, going against rivals, and recognition and compensation of the best achievers (Han et al., 2020). Such features may create situations where employees outdo one another in the quest for self-advancement (Dos Santos et al., 2023). The impact of a competitive psychological climate on employee behavior is both deep and multifaceted. According to Jones et al. (2017), people scoring high on achievement orientation take competitive settings as a chance to showcase their skills, which enhances their level of participation and determination toward work. However, such a climate could also be stressful, which would be particularly true for employees who are not very competitive or combative and could lead to lower levels of teamwork (Morrison-Smith & Ruiz, 2020). The need to be better than one's peers creates anxiety, stress, and, on one extreme, loss of gratitude for the work, which inevitably lowers productivity and the welfare of the people involved. Overall, excessive competition may suppress innovation, particularly tolerance principles, leading to fear among employees who may be reluctant to test new ideas or find sharing intellectual resources unusual compared to their rivals within the firm. The impact of competitive psychological climates on innovation is intriguing yet complicated, as scholars have recorded both positive and negative aspects.

Comprising AI skills along with a supportive psychological climate positively impacts all aspects of the innovation process. For instance, an organiza-

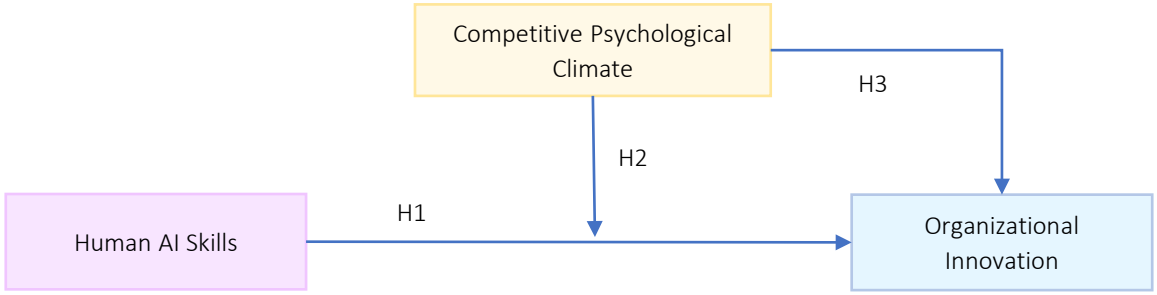

Figure 1. Conceptual framework

tion with extensive AI capabilities might develop a new product based on what it has learned from the data (Tan et al., 2024). The other side is that if the psychological climate is not supportive of taking risks or working in cooperation, then these new learnings may yield no new avenues (Zhang & Wan, 2021). Turning to the present situation, the propelling view of AI skills is that a positive psychological climate enables exposure where employees are willing to take risks and engage with the AI tools in their most creative approaches (Jia et al., 2023).

Earlier research has focused on human AI skills and organizational innovation individually, often considering AI skills as a strategic resource or examining innovation outcomes. Nevertheless, a significant gap remains in research regarding the interplay between competitive psychological climates and human AI skills, particularly in relation to innovation-driving activities within organizations.

This study aims to fill the gap by analyzing the interaction between human AI skills and competitive psychological climates with particular attention to their joint impacts on the processes and outcomes of innovation in the organization, especially within Jordanian telecommunications companies.

Following the discussion of prior research and the identified gaps, hypotheses were developed to guide empirical investigation into these variables:

H_1: *Human AI skills have a significant impact on organizational innovation.*

H_2: *Competitive psychological climate has a significant impact on organizational innovation.*

H_3: *Competitive psychological climate moderates the relationship between human AI skills and organizational innovation.*

As demonstrated in Figure 1, the conceptual framework explores how these research variables affect each other. It sheds light on how human AI skills, competitive psychological climate, and organizational innovation are interrelated.

2. METHODS

The research approach was primarily descriptive-analytical, which is appropriate in the assessment of factors that have a causal and complex relationship with the phenomenon in question. Data were primarily collected through the use of cross-sectional questionnaires. This approach was chosen because it is relatively more effective in collecting a huge amount of information in a short duration and is easy to administer. The questionnaire was based on established research designs, and it underwent rigorous pretests to ensure that the intended information was clear and reliable. The sample population for this study consisted of employees from the three largest telecommunications companies in Jordan: Zain, Orange, and Umniah. The total number of employees for these companies is 3,598: Zain (1,335), Orange (1,363), and Umniah (900). To ensure each employee gets the same chance to participate and eliminate selection bias, a simple random sampling method was utilized. A total of 700 questionnaires were mailed out, and only 552 answers were validated for data processing, corresponding to a 79% return rate. Employees from different levels were captured in the sample.

Analysis of the data began with descriptive statistics to age data with demographic information

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(Table 1), such as frequencies and percentages for gender, years of experience, qualifications, and job titles. Likert scale responses were categorized into reported intervals of low, moderate, or high, as follows: low (1.00–2.33), moderate (2.34–3.67), and high (3.68–5.00). For the constructs of human AI skills, competitive psychological climate, organizational innovation, and overall performance, reliability was measured with Cronbach's alpha (threshold > 0.70), and convergent validity was measured with average variance extracted (AVE > 0.50). Hypothesis testing was conducted using partial least squares structural equation modeling (PLS-SEM) in SmartPLS 4. Model evaluation was performed through path coefficients (β), *t*-values, *p*-values, R^2 (explanatory power), and f^2 (effect size). The significance thresholds were taken from Hair et al. (2019), who set $p < 0.05$ as support for the hypothesis.

Table 1. Demographics

Variable	Categories	Frequencies	Percentages
Gender	Female	214	39%
	Male	338	61%
Experience	5 years or less	248	45%
	6–11 years	147	27%
	11–16 years	133	24%
	More than 16 years	22	4%
Qualifications	Diploma	33	6%
	Bachelors' degree	412	75%
	Postgraduate	107	19%
Job Title	Manager	49	9%
	Employee	503	91%

The respondents' demographic profile is shown in Table 1. In the case of gender, the sample consists of 214 females (39%) and 338 males (61%), indicating that men outnumber women in the sample. Regarding years of work experience, the largest group is that of respondents with five years or less, which includes 248 respondents (45%). Following this group are those with 6–11 years of experience, comprising 147 respondents (27%), then 11–16 years of experience, with 133 respondents (24%), and finally, more than 16 years of experience, represented by a small group of 22 respondents (4%). Looking at the educational qualifications, the majority possessed a Bachelor's degree, with 412 (75%) and 107 respondents (19%) being postgraduates. Diploma holders constitute a smaller segment of 33 respondents (6%). For job titles, the majority of respondents ($n = 503$, 91%) fell into the employee category, and the remaining 49 respondents (9%) held managerial positions.

3. RESULTS

The stability test corroborated the findings and confirmed the reliability of the information obtained. As Bougie and Sekaran (2020) explain, a Cronbach's alpha nearing 1 shows high values, and almost all variables have it. An alpha above 0.60 is considered reliable. Moreover, the average variance extracted (AVE) for each factor has been calculated. Usually, most scholars accept the threshold of AVE to be around 0.50 so that constructs that are latent capture more than half of the variance as opposed to measuring errors. When AVE exceeds 0.50, it adds additional support to the validity and strength of the constructs.

Table 2 provides evidence of both reliability and convergent validity for the constructs used in the study. The reliability of each construct is measured using Cronbach's alpha, and all values exceed the commonly accepted threshold of 0.70. For instance, the human AI skills construct, comprising 10 items, has an excellent Cronbach's alpha of 0.89, indicating high internal consistency among the items. Similarly, the competitive psychological climate construct, measured with eight items, shows outstanding reliability with a Cronbach's alpha of 0.91. The organizational innovation construct also demonstrates strong reliability with an alpha of 0.84, and overall performance has a Cronbach's alpha of 0.88.

Table 2. Evaluation of tool stability

Variables	Number of Items	Cronbach's Alpha	AVE
Human AI skills	10	0.98	0.59
Competitive psychological climate	8	0.19	0.63
Organizational innovation	8	0.48	0.58
Overall Performance	–	0.88	0.60

In addition to reliability, Table 2 includes average variance extracted (AVE) values, which assess convergent validity. An AVE value of 0.50 or above is generally acceptable, suggesting that the construct explains at least 50% of the variance in its indicators. All constructs meet this criterion, with AVE values ranging from 0.58 for organizational innovation to 0.63 for competitive psychological climate. Specifically, the human AI skills construct has an AVE of 0.59, and overall performance registers an AVE of 0.60, further supporting the robustness of the measurement model.

Overall, the high Cronbach's alpha and satisfactory AVE values for each construct provide strong evidence that the measures used in this study are both reliable and valid, ensuring that the findings are built upon a solid measurement foundation.

Table 3 sheds light on the use and attitude of AI in the working environment. Item 1 (Mean = 4.3, SD = 0.6, High) corresponds to the level of confidence that respondents have in using the knowledge of AI concepts taught to them, while Item 2 (Mean = 4.7, SD = 0.4, High) shows that people believe that AI is important to being competitive. Simultaneously, Item 3 (Mean = 4.2, SD = 0.5, High) demonstrates a degree of worry about AI's impacts on human jobs. This implies that while the benefits are acknowledged, concerns about job loss are prominent.

Regarding the technical skills and their actual implementation, Item 4 (Mean = 3.5, SD = 0.7, Moderate) indicates that the employees have an average degree of the necessary technical knowledge. This is contrasted by Item 5 (Mean = 2.9, SD = 0.8, Moderate), which captures the failure to appreciate the degree to which human reasoning should override AI's suggestions. On the other hand, Item 6 (Mean = 4.6, SD = 0.3, High) shows a high level of skill in modifying AI outputs to suit the scope of work. However, Item 7 (Mean = 3.2, SD = 0.5, Moderate) suggests that there is still some degree of incomprehension of the AI-generated outputs and their application.

In terms of ethical commitment and risk management, Item 8 (M = 3.8, SD = 0.6, Moderate) demonstrates a moderate effort in ethical decision-making tied to the usage of artificial intelligence. Likewise, Item 9 (M = 3.4, SD = 0.5, Moderate) portrays a moderate level of understanding of biases that exist in AI systems. Item 10 (M = 3.1, SD = 0.7, Moderate) demonstrates guardedness toward dealing with security risks such as information fraud. The slight perception of these challenges suggests that although some recognition of ethical and risk concerns exists, there is still significant scope for additional training and policy formulation to deal with the adoption of AI in a socially reasonable manner.

In summary, the data support the notion that while employees appear willing and ready to apply AI technology in achieving organizational strategies and operational goals, particularly in the in-

Table 3. Overview of descriptive analysis for human AI skills

Item	Mean	S.D	Degree
I believe that I can apply the knowledge that I have about the AI technologies I will use in my work	4.3	0.6	High
I believe that AI-driven solutions are critical for me to stay competitive	4.7	0.4	High
I am concerned regarding the use of AI in my workplace and how it might ultimately replace human employees	4.2	0.5	High
I am aware of the technical parameters and the applications of AI technologies that I use at my workplace	3.5	0.7	Moderate
I am adept in ascertaining the points in time where AI recommendations should be ignored and human judgment reinstated	2.9	0.8	Moderate
I have experience in modifying AI recommendations in a manner that best suits the requirements of job tasks	4.6	0.3	High
I do not experience challenges in understanding and utilizing the insights derived from AI technologies	3.2	0.5	Moderate
I use AI technologies when making decisions pertaining to my job ethically and morally	3.8	0.6	Moderate
I understand the possible discrimination embedded in AI systems I interact with as part of my working routine	3.4	0.5	Moderate
I feel adequate about the probable dangers encompassing the efforts of artificial intelligence, for instance, data theft	3.1	0.7	Moderate

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Table 4. Overview of descriptive analysis for competitive psychological climate

Item	Mean	S.D	Degree
In my opinion, rivalries between employees are promoted in the workplace	3.2	0.6	Moderate
Most of the time, I find it necessary to work harder than my co-workers so that the rewards be given to me rather than them	3.1	0.5	Moderate
One of the aspects that I do not cherish is the competitive atmosphere that most of the times exist in the work environment	4.5	0.4	High
I assume that competition amongst the members of the team should be limited if there is an aim of preserving team effectiveness	4.3	0.5	High
I feel that my organization encourages me to engage in competition but in a manner which is ethical	3.0	0.7	Moderate
I found that competition has improved my problem-solving skills	2.8	0.6	Moderate
I maintain that the higher the competitive atmosphere in any organization, the closer the pace of innovation process	3.4	0.5	Moderate
I think that in our organization, competition is constructive rather than destructive	4.6	0.3	High

novation and improvement of processes, there are still gaps in their technical and risk management skills, which significantly impact their ethical and effective use of AI.

Table 4 presents the respondents' insights on the competitive aspects of an organization. Items 1 (Mean = 3.2, SD = 0.6, Moderate) and 2 (Mean = 3.1, SD = 0.5, Moderate) show a moderate understanding of personal competition and the need to put in more effort than peers, which earned them a moderate mark. It is probable that the respondents recognize the existence of competition but that competition is not extremely hostile or all-encompassing.

As for the other items, Item 3 (Mean = 4.5, SD = 0.4, High) and Item 4 (Mean = 4.3, SD = 0.5, High) suggest clear agreement with the negative consequences of competition and the violation of competitive boundaries for the sake of teamwork. These high scores suggest that employees are susceptible to competition that stifles teamwork, which raises issues as to how competition impacts the work environment.

With respect to organizational encouragement and its effect on individual capabilities, both Items 5 and 6 indicate a very similar moderate sentiment regarding the contribution made by competition toward ethical engagement in competition and the realization of problem-solving skills. In this context, Item 5 (Mean = 3.0, SD = 0.7, Moderate), gauging the perception of the organization's support for ethical competition, captures a moderate impression together with Item 6 (mean 2.8, SD = 0.6, Moderate). The advantages of competition in this realm are not appreciated to a great extent.

Lastly, the resultant picture of Items 7 and 8 reveals a more sophisticated understanding of the relationship between competition and innovation or constructiveness. Competition as a means of fostering innovation has elicited a moderate response. Similarly, Item 8, which captures the degree of approval expressed, has elicited a high response as a negative form of competition. In such a context, these findings further reveal a certain degree of discomfort toward competition, which is perceived to be damaging. However, there is a significant appreciation for the constructive wielding of competition.

In general, these conclusions imply that there is an acceptance of competition in the workplace as well as skepticism regarding its harmful effects. Such a balance requires management strategies that capitalize on the positive consequences of competition while mitigating its adverse effects on collaboration and creativity.

As presented in Table 5, there is a notable emphasis on identifying adequate market opportunities, creating new products, and allocating resources effectively. Item 1 (Mean = 4.4, SD = 0.5, High) indicates that there is confidence in the organization's capability to identify market opportunities. In the same way, Item 3 (Mean = 4.5, SD = 0.4, High) highlights the strategic benefit gained with the new product, whereas Item 4 (Mean = 4.6, SD = 0.3, High) indicates strong resource allocation during the development phase.

Table 5. Overview of descriptive analysis for organizational innovation

Item	Mean	S.D	Degree
The organization tends to identify market opportunities effectively	4.4	0.5	High
The product development phase seeks creative and innovative thinking from staff members	3.2	0.6	Moderate
Developing new products prevents the company from being steered by rival companies	4.5	0.4	High
Appropriate amounts of resources are allocated to the development of new products	4.6	0.3	High
Customers' responses are used appropriately in the crafting of a new product	3.1	0.7	Moderate
The organization keeps pace with potential developments in the industry by incorporating new technologies	3.4	0.6	Moderate
Proper training is offered for all workers to help them adjust to the new technology	3.0	0.5	Moderate
New technologies have improved the company's performance	3.2	0.4	Moderate

On the other hand, factors concerning internal creative innovation, integration of feedback, adoption of new technology, and staff training are moderately supported. Based on Item 2 (Mean = 3.2, SD = 0.6, Moderate), it is evident that creative and innovative imagination is put into practice, but it is not employed to its fullest potential in the product development stage. Item 5 (Mean = 3.1, SD = 0.7, Moderate) indicates that there is an integration issue with customer feedback in the design of new products. Item 6 (Mean = 3.4, SD = 0.6, Moderate) describes a situation whereby technological change is being moderately adopted, and Item 7 (Mean = 3.0, SD = 0.5, Moderate) suggests that not enough training is being offered to help employees cope with new technology. Finally, Item 8 (Mean = 3.2, SD = 0.4, Moderate) demonstrates that new technologies have some effect; however, the resulting performance of the company is still in need of improvement.

In conclusion, the organization is relatively strong in identifying the market, developing products, and mobilizing available resources, but still has a mediocre approach in utilizing creative outputs, external inputs, technology, and training.

The hypotheses of the PLS-SEM structural model were tested with Smart PLS 4. According to Hair et al. (2019), when carrying out PLS, the hypotheses should be rejected if the path coefficients are not significant or even point to dissimilar indicators than the hypotheses.

Evidence from the structural model provides strong validation for each of the assumed relationships. For *H1* (*HAI → OI*), the path coefficient suggests that human AI skills impact organizational innovation positively and strongly (β = 0.68). This relationship is statistically supported by a *t*-value of 11.89 and a *p*-value of 0.000. *R* squared indicates that human AI skills account for a considerable amount of the variance in organizational innovation (R^2 = 0.94), while the impact of these skills is also strong, as indicated by the effect size (f^2 = 0.52). So, H1 is accepted.

For *H2* (*CPC → OI*), organizational innovation is positively impacted by the competitive psychological climate, though not as robustly, with a path coefficient of 0.74. The *t*-value of 11.15 and *p*-value of 0.000 indicate the statistical significance of the findings. The *R* squared value of 0.90, coupled with the effect size (f^2 = 0.60), especially shows that competitive psychological climate helps explain the variance in organizational innovation. Therefore, *H2* is proved.

Lastly, *H3*: *HAI* x *CPC→OI* discusses the moderating impact of the combination of human AI skills and competitive psychological climate on organizational innovation. With a path coefficient of 0.72, a *t*-value of 11.23, and a *p*-value of 0.001, the moderation effect is significant. The R^2 of 0.93, along with effect size (f^2 = 0.47), suggests that these variables' interaction greatly contributes to explaining variance in organizational innovation. Thus, *H3* is also validated.

Table 6. Overview of the hypotheses results

Path	β (Path Coefficient)	t-value	p-value	R^2	f^2	Decision
H1: HAI → OI	0.68	11.89	0.000	0.94	0.52	Supported
H2: CPC → OI	0.74	11.15	0.000	0.90	0.60	Supported
H3: HAI x CPC → OI (Moderation Effect)	0.72	11.23	0.001	0.93	0.47	Supported

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In conclusion, both human AI skills and competitive psychological climate were found to have independent positive impacts on organizational innovation, while their interaction positively strengthens this impact.

4. DISCUSSION

The integration of artificial intelligence (AI) within enterprises is a breakthrough development that has brought about significant changes. Therefore, this paper sought to investigate the interaction between human AI skills, competitive psychological climate, and organizational innovation. The findings suggest that while employees trust themselves to use AI technologies, there is, however, a moderate understanding of AI risks, such as bias, misuse, and ethical issues. Furthermore, there exists a good perception of the competitive psychological climate whereby employees perceive both the positives and negatives of competition in the organization. Very importantly, there is no disputing the fact that the relationships highlighted among the variables are extremely crucial in the context of human and organizational culture, which allows the promotion of the innovation process.

The results revealed that employees have difficulty understanding when to disregard AI recommendations, suggesting an overreliance on AI and a failure to utilize personal judgment. This is most likely a consequence of insufficient training in analyzing AI outputs and checking real-life examples of AI's boundaries. Few understand how these algorithms work or their possible biases, and the ethical and practical ramifications that stem from them. To address this, companies could offer instruction on the fundamental concepts of AI, its limitations, and its relationship to human decision-making. At the same time, employees perceive the competitive physiological climate in different ways. Some view it as a motivator that encourages better performance and benefits the organization, whereas others believe it hinders teamwork by causing unnecessary stress and rivalry. This stress is often a result of the pressure to achieve very stringent targets. Companies should be mindful of fostering "good competition" that enhances innovation and teamwork while also attending to their well-being.

Regarding the hypotheses, the first one asserts that human AI skills correlate with organizational innovation in a positive manner, and strong findings support this correlational relationship. This emphasizes the importance of employees' skills, particularly in relation to AI technologies, for the organization's innovativeness. Employees are able to improve efficiency, make decisions, and solve problems at a faster rate and in a better way when they are well able to utilize AI. This is consistent with previous studies that suggest employee possession of technological competencies is one of the key causes of innovation (García-Sánchez et al., 2018). In addition, Ameen et al. (2024) demonstrated that to create new products and services, it is essential to have individuals with advanced AI skills, which supports the influence of human AI ability on organizational innovation. In addition, Bley et al. (2022) observed that organizations that train their employees in AI not only improve the performance of the workers but also create a culture where improvement and creativity are the norm.

The second hypothesis offers insight into how a competitive psychological climate moderates the interplay between human AI skills and organizational innovation. The findings suggest that the acceptance of human AI skills in the workplace is more productive in the context of an innovative and competitive environment. This means that where competition is ethical and propriety is encouraged for the staff, the relationship between AI skills and innovation is fostered. When competition is encouraged in a company and employees' efforts are recognized, workers are more likely to be willing to use their AI abilities in an imaginative way.

The third hypothesis confirms that competitive psychological climate is positively correlated with organizational innovation. This highlights the factors of the work settings in which employees have to function. From this perspective, a competitive atmosphere that is regarded as propelling can inspire creativity by encouraging employees to strive and collaborate with others. On the contrary, if competition is viewed as unhealthy or a threat to interaction within the team, this stifles the desire to innovate. This premise is supported by Xie et al. (2023), who

demonstrated that negative self-perception in employees stemming from rogue competition is increased when employees' perceptions of the competitive environment are positive. In the same vein, Andersson et al. (2020) suggest that a healthy competitive environment promotes a level of risk-taking and sharing of ideas by employees as there are no negative consequences, which tends to improve the innovation level of the organization.

CONCLUSION

This study investigated the important impacts of human AI skills and competitive psychological climate on organizational innovation in Jordan's telecommunication industry, particularly in Zain, Orange, and Umniah. The study verified that both human AI skills and competitive psychological climate have a positive effect on organizational innovation. Additionally, competitive psychological climate acts as a moderating variable by further increasing the relationship between human AI skills and innovation.

These results demonstrate the need for Jordanian telecommunication companies to enhance their employees' AI-related skills and, at the same time, develop a competitive yet favorable psychological environment. This study, however, acknowledges its limitations, which include the biases that come with the focus on a specific part of an industry. Broader sectoral coverage and longitudinal studies would be encouraged for future research at capturing the enduring effects of AI skills and competitive environments on innovation. Also, it is interesting to analyze the impact of generative AI on organizational innovation.

The obtained results clarify how telecommunications firms may utilize AI to gain a competitive edge. If firms understand the combined relevance of building AI capabilities and shaping the psychological climate, they will be better equipped to prepare themselves to take the lead in innovation and competitiveness in the market.

AUTHOR CONTRIBUTIONS

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