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Developing a Model of Employees' Soft Skills with a Digital Human Capital Development Approach at Farhangian University

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ABSTRACT

Objective: This study aimed to develop a model of employees' soft skills with a digital human capital development approach at Farhangian University of Mazandaran, Iran in 2022.

Methods: This study was applied in terms of purpose and adopted a mixed method with an exploratory approach. The statistical population of the qualitative study consisted of experts in the field of education, psychology, management, and technology who were selected purposefully, and finally, due to the saturation method, 15 experts were selected as a sample. The statistical population in the quantitative phase included 173 participants selected by stratified random sampling. The research data collection tool in the qualitative phase was a semi-structured interview whereas, in the quantitative section, a researcher-made questionnaire was extracted from interviews. Data in the qualitative phase were analyzed using the thematic analysis, and in the quantitative phase, confirmatory factor analysis, divergent and convergent validity were used. The face, content, and construct validity of the instrument were confirmed. Their composite reliability and Cronbach's alpha were calculated above 0.70, which was approved.

Results: The qualitative phase of this study identified five main dimensions: soft communication skills, functional skills, organizational skills, technology-related skills, and research and development in the digital domain. These dimensions encompassed 16 sub-components, including effective communication skills, decision-making in digital environments, technology evaluation, and participation in digital projects. In the quantitative phase, the validity of the research model was confirmed using structural equation modeling (SEM). Additionally, the analysis results indicated that performance evaluation and digital organizational processes had the highest impact, while decision-making and problem-solving in the digital domain were the most influenced and held the highest priority among the components. These findings highlighted the critical importance of analytical, decision-making, and management skills in the development of digital human capital.

Conclusions: The results of this study can provide valuable insights for policymakers at Farhangian University in designing training programs to enhance faculty and staff's digital soft skills.

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Introduction

The rapid progress of digital technology has catalyzed a deep paradigm shift in the business environment today (Karneli et al., 2024). In this digital age, the success of a company depends not only on technical competence, but also on the ability of employees to manage their personal relationships (Sutrisno et al., 2023). As a result, deep understanding and mastering of the dynamics of employees in the digital environment emerge as key elements in achieving lasting business success. The previous literature has discussed skills requirements in a broad range of companies and industries, but the detailed analysis of skills requirements across different occupations in a particular sector remains unexplored (Lyu & Liu, 2021). Especially in the educational sector, where the trend is towards computerization and digitization, the role and skills requirements of educational institutions and universities are not well understood (Haleem et al., 2022). In the university education system, there is currently a need to implement virtual classroom delivery mechanisms and to introduce technological tools that mediate all teaching and learning processes. The consequence of these factors is that university employees have to develop skills that are appropriate for the emergence of these new technologies in their work (Lyu & Liu, 2021). The specialized literature has portrayed these skills as 21st century skills. These new capabilities comprise specific skills—both technical and digital—and soft skills (Poláková et al., 2023) , and this combination of skills has also been referred to as digital competence. Specific skills refer to measurable and job-specific abilities. Soft skills, however, encompass transversal skills, such as those that affect the worker's communicative capacity, critical thinking, collaborative and social skills, and problem-solving abilities (Taylor, 2016).

The significance of human resources as the most valuable asset of a company cannot be overstated. The challenges of the digital business environment are heavily dependent on individual skills. It is therefore essential to improve soft skills competences in the business environment (Karneli et al., 2024).

Specifically, soft skills are personal and interpersonal competencies linked to the character and personality of individuals (Alt et al., 2023). These skills include various social, interpersonal and communication skills that help individuals interact effectively with others in a variety of contexts. These include verbal and non-verbal communication skills, leadership, teamwork, work ethic and initiative, and problem-solving. Soft skills are key in the workplace, not only influencing

individual performance but also contributing to team performance, adaptability to change and building positive relationships with colleagues and clients(Chala & Bouranta, 2021).

Human Resources (HR) refers to the essential elements within the organization relating to the aspects of the employee or the workforce. In general terms, HR includes all individuals involved in organizational activities, from the level of operational staff to the level of management (Rustiawan et al., 2023). HR not only involves the number of employees, but also focuses on managing, developing and exploiting the human potential within the organization. This includes aspects such as recruitment, selection, training, career development, performance appraisal and labor relations management (Susantinah & Krishernawan, 2023). Human Resources is responsible for creating a healthy working environment, promoting productivity and managing the interpersonal dynamics between the members of the organization (Sugiarto, 2023). Its role is becoming increasingly important in supporting the strategic objectives of the organization, identifying and developing internal talent and ensuring the sustainability of long-term growth and success. As an integral part of organizational management, HR plays a key role in shaping the company culture, improving the wellbeing of employees and achieving competitive excellence by optimizing human resources (Ryketeng & Syachbrani, 2023).

Digital transformation has affected people, business, and education organizations, fostering new opportunities as well as challenges specifically in higher education institutions (Guinan et al., 2019). Several scholars have analyzed the impact of digital transformation on academic and practical organizations (Giones & Brem, 2017; Rippa & Secundo, 2019; Tekic & Koroteev, 2019) For instance, digital transformation can be related with various technological tools such as big data, artificial intelligence (AI), 4.0 machines, 3D printers and social media networks (Bresciani et al., 2021), digital platforms (Linzalone et al., 2020), and digital learning (Bygstad et al., 2022). However, as knowledge is the dominant production factor (Cardoni et al., 2019), universities become the main stakeholder in the creation and the transfer of knowledge.

(Antón-Sancho et al., 2021) in their study aimed to analyze the degree of acquisition of soft skills in Latin American university teachers whose countries are less digitally developed. For this purpose, the countries with the lowest Global Innovation Index (GII) were selected: (i) Panama; (ii) Peru; (iii) Argentina; (iv) El Salvador; (v) Ecuador; (vi) Paraguay; (vii) Honduras; and (viii) Bolivia. To

achieve this objective, it was necessary to develop a questionnaire on the self-concept of soft skills, based on the soft skills included in the Bochum Inventory of Personality and Competences (BIP). Results obtained from statistical analysis of the data collected from a sample of 219 participants show that university teachers are sufficiently prepared, in terms of their soft skills, for the increase in digital competence required as a result of the COVID-19 crisis, despite the low level of digital development in their respective countries. This study represents a novelty with respect to previous studies, which usually have not studied the existence of age or experience gaps in soft skills, but rather analyzed them in students or young professionals (Lyu & Liu, 2021; Taylor, 2016). Alternatively, previous studies have also focused on digital competence by analyzing gaps by age ranges in university professors. For example, the results obtained here are in line with works such as (Chala & Bouranta, 2021; Lok et al., 2021), which attribute the highest digital competence rating to the youngest. However, the current results are in contradiction with other studies, such as (Giones & Brem, 2017), who found the highest digital competences among teachers under 40 years of age. The explanation for these divergences may lie in the reflection made by (Giones & Brem, 2017): the area of knowledge is probably the variable that most strongly conditions the assessment of this type of competency, because it relates to the use of technologies, and being employed in this area depends strongly on the field in which the teacher is trained.

(Lok et al., 2021) in their paper aimed to investigate the impact of soft skills training and development on human resource outcome and firm performance. Data were collected from 199 manufacturers in Malaysia using questionnaire survey method and analyzed using 'structural equation modelling' methodology. The results indicated that the relationship between soft skills training and development and firm performance is fully mediated by the human resource outcomes. This study highlights the indirect contribution of soft skills training and development on firm performance via its impacts on human resource outcome. This result suggested that the direct value of soft skills training and development is somehow lacking as it did not provide an immediate impact on a firm performance. However, firms should continue to invest in soft skills training and development as soft skills cannot be learned in a day, and immediate application of soft skills acquired through training is less likely. Moreover, firms should design an appropriate evaluation system and approach for soft skills training and development, as training evaluation is the most important training phase among the three training phases.

(Poláková et al., 2023) in their study sought to fill a gap in the literature by explicitly connecting the theoretical importance of soft skills to their practical demand in Industry 5.0, an area that has been underexplored compared to digital skills. The study uses a unique dataset comprising job postings from 19,000 organization over five years (2017–2021), providing an extensive and longitudinal perspective on employer demands for soft skills. By categorizing 3461 soft skills into 16 distinct categories based on theoretical and practical considerations, the study presents a structured framework for understanding and analyzing soft skills under the conditions of Industry 5.0. While most prior studies have concentrated on the digital and technical skill requirements of Industry 4.0, this research shifts the focus to the human-centric ethos of Industry 5.0. It highlights the indispensable role of soft skills, such as emotional intelligence, creativity, and problem-solving, in complementing technological advancements. Most prior studies focused predominantly on Industry 4.0 and technical skills, with limited attention to the human-centric principles of Industry 5.0 or the specific role of soft skills in human-machine collaboration. The study identifies industry-specific variations in soft skill demands, offering nuanced insights that were largely absent in prior research.

The study's literature review highlights a significant gap in research on employees' soft skills with a digital human capital development approach in higher education. To fill this gap, this study aims to investigate the development of a model for employees' soft skills with a digital human capital development approach at Farhangian University in Iran.

Material and Methods

The study employed a mixed-method approach that combined qualitative and quantitative methods to conduct a descriptive content analysis. (Abuhamda et al., 2021) stated, "Quantitative and qualitative methods are the engine behind evidence-based outcomes." In the qualitative section, the data were analyzed using the thematic analysis. The analysis process followed Braun and Clarke's (2006) six-phase model, which includes: (1) familiarization with the data, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes, and (6) producing the final report (Braun & Clarke, 2006). The exploratory and confirmatory factor analyses were used in the quantitative part. The statistical population of the qualitative study consisted of experts in the field of education, psychology, management, and technology who were

selected purposefully, and finally, due to the saturation method, 15 experts were selected as a sample. Theoretical saturation was the main criterion to justify the sample size. Data collection was conducted using semi-structured interviews. The researcher achieved data saturation after interviewing the fourteenth participant, which aligns with the saturation law. However, to ensure the adequacy of the data, the interviewing process continued until the fifteenth participant. The validity and reliability of this research were evaluated with the contribution of interviewees and a PhD student of educational administration as the assessor. He was asked to help the research group in the coding process for the first three interviews to find the percentage of accordance between the codes and intercoder reliability (ICR). The below equation shows how to find this percentage:

$$ICR\ Percentage = \frac{2 \times agreements}{Total\ number\ of\ Codes} \times 100\%$$

The coding process between the research group and evaluation group is demonstrated in Table 1:

Table 1. Researcher and Assessor's Coding Comparison

Interviewee	No. of Codes	Agreements	Disagreements	ICR
I	17	7	3	82%
II	22	9	4	81%
III	19	8	3	84%
Total	58	24	10	83%

According to the above Table, 58 codes were defined from three interviews, in which 24 comments agree, and 10 disagreements were identified between the research and evaluation groups. This shows a good percentage of reliability that is above 60%. After the coding process and classification, primary drafts were given to the interviewees to check the accuracy of the notes collected by the research group, which were based on their opinions, and their agreement proves the validity of this research.

In order to launch the study, the researcher reviewed relevant literature and theoretical foundations on soft skills with a digital human capital development approach. The first step was to conduct personal interviews with selected experts and professors. Each interview session lasted approximately 65 minutes and was recorded. After each interview, the recorded information was re-written and the interview data analyzed to develop a survey model. In order to respect ethical

considerations in this research, it has been attempted to collect data after obtaining consent from the participants. In addition, participants were assured that their personal data would be kept confidential and the results were provided without the names and details of the participants. The quantitative sample of 173 participants selected by stratified random sampling was included in the statistical population. They were asked to answer a questionnaire developed by researchers and extracted from the interviews. Twenty professional experts were consulted to develop the questionnaire based on the Conceptual Model. After two rounds of consensus, a final model was drawn up with a strong consensus rate of more than 80 percent among the experts. Ethical considerations were also carefully regarded throughout the entire research process.

Results

The qualitative part of the research

The study employed a qualitative research method, specifically utilizing the thematic analysis. In the qualitative research part, the semi-structured interviews were used to extract the appropriate model's main themes, sub-themes, and codes. Thematic analysis of the interview transcripts revealed five main themes, 16 sub-themes, and 48 codes (Table 2). This process involved a six-stage approach. First, the recorded interviews were transcribed verbatim. Secondly, after obtaining the data, a coding process was implemented which carefully analyzed and encrypted the entire interview dataset. The third stage aimed to identify sub-themes for subsequent categorization. This involved finding answers to the research question by creating a hierarchical codebook and organizing similar codes into related groups. Codes reflecting the perceived need to learn and develop soft skills for digital human resources at Farhangian University have been identified and grouped together. These clusters were then examined to see whether they constituted a single or several themes, thus creating sub-themes. Each sub-theme was defined as being sufficiently specific and distinct, but broad enough to encompass related ideas across the data. In the fourth stage, main themes emerged from the aggregation of related sub-themes. Each main theme broadly represented at least two sub-themes, with each sub-theme comprising at least two codes grounded in direct quotations from participants. Finally, in the fifth and sixth stages, the extracted themes were defined, labeled, and analyzed.

Table 2. Summary of the Qualitative Research Findings (Thematic Analysis)

Main Theme	Sub-Theme	Concepts (Codes)
Soft Skills in the Digital Communication Domain	Digital Conflict and Dispute Management Skills	Conflict Resolution Skills in Digital Environments
		Establishing Coordination in Digital Environments
	Effective Communication Skills in Digital Environments	The necessity of communicating with diverse individuals in digital environments
		Communicating with external individuals and institutions using digital tools
	Digital Negotiation and Persuasion Skills	Active listening in digital environments
		Clear and concise expression in digital environments
		Persuasion and achieving consensus in digital dialogues
	High Emotional Intelligence in the Digital Realm	High social interaction in digital environments
		Perceiving and managing emotions in digital environments
Functional Soft Skills in the Digital Domain	Digital Time Management Skills	Effective planning in digital environments
		Prioritizing and sequencing tasks based on urgency
	Data Analysis and University Digital Needs Analysis Skills	Collecting digital data
		Analyzing university digital needs
		Analyzing digital data
	Digital Decision-Making and Problem-Solving Skills	Problem-solving skills in digital environments
		Decision-making skills in digital environments
	Digital Change Management Skills	Analyzing digital transformations
		Adapting processes to university digital goals
Organizational Soft Skills in the Digital Domain	Digital Organizational Strategy Development Skills	Analyzing the external environment
		Setting goals and strategies in the digital domain
	Effective Leadership Skills in the Digital Domain	Defining values and principles in the digital domain
		Encouraging collaboration and interaction
	Digital Organizational Performance and Process Evaluation Skills	Evaluating digital processes
		Evaluating digital performance
Technology-Related Soft Skills in the Digital Domain	Digital Technology Evaluation and Selection Skills	Evaluating digital technologies
		Selecting appropriate digital technologies
	Artificial Intelligence Algorithm Utilization Skills	Familiarity with concepts of artificial intelligence and machine learning
		Prediction and analysis skills using artificial intelligence
	Data Protection and Cybersecurity Skills	Awareness of cyber threats
		Cyber technical skills
Research and Development Soft Skills in the Digital Domain	Participation in Digital Research and Educational Projects Skills	Actively searching digital resources
		Digital learning and teaching skills
	Digital Transformation Analysis and Forecasting Skills	Analyzing digital information
		Forecasting digital transformations

The quantitative part of the research

To investigate our research questions, we utilized a questionnaire consisting of 48 items. We then performed an exploratory factor analysis to identify and rank our data's various dimensions and components. Before analyzing the data, we conducted the Kaiser-Meyer-Elkin Measure of

Sampling Adequacy and Bartlett's goodness-of-fit tests to ensure suitability. To determine the variables' adequacy, we utilized the KMO statistic, with a value above 0.70 being deemed appropriate for factor analysis. Additionally, we utilized Bartlett's test to assess the correlation between the variables, which is essential for a meaningful and useful factor analysis model. As a result, we formulated a statistical hypothesis with regard to Bartlett's test to ensure sufficient samples and to determine the correlation between the variables (items).

The result of the KMO test was 0.860, which reflected strong since it was higher than the significance value of 0.80. This value indicates that the number of research samples is sufficient for factor analysis, and it is possible to perform factor analysis for the desired data. The data can be reduced to a series of latent. Also, the results of Bartlett's test (Sig = 0.001, $\chi 2$ = 3854.342) show a high correlation between the items, so it is permissible to continue and use other stages of factor analysis.

Table 3. Cronbach's Alpha Values, Composite Reliability, and Average-Variance Extracted Index for Research Variables

Components	Cronbach's Alpha	Composite Reliability	AVE	Significance Level
Soft Skills in the Digital Communication Domain	0.91	0.93	0.67	0.001
Functional Soft Skills in the Digital Domain	0.80	0.86	0.56	0.001
Organizational Soft Skills in the Digital Domain	0.77	0.84	0.47	0.001
Technology-Related Soft Skills in the Digital Domain	0.82	0.75	0.43	0.001
Research and Development Soft Skills in the Digital Domain	0.76	0.82	0.55	0.001

Cronbach's alpha and composite reliability indexes were used to assess the reliability of the internal consistency of measurement model variables. Composite reliability and Cronbach's alpha coefficient for all of the constructs were over the recommended threshold of 0.70, indicating the adequate internal consistency of multiple items for each construct. Therefore, the reliability and internal consistency of research variables were confirmed. The extracted average variance index was used to assess the convergent validity of the research measurement model. Convergent validity indicates whether a test designed to measure a particular construct correlates with other tests that assess the same or similar construct. The extracted average variance index estimates the explanation of the variance of the questions by the latent variable. The minimum accepted value

for the extracted average variance index was 0.5. The convergent validity is confirmed according to the values of the extracted average variance index in Table (5).

Table 4. The Furnell-Locker index values to investigate the divergent validity of the research model

Dimensions	1	2	3	4	5
Soft Skills in the Digital Communication Domain	0.75				
Functional Soft Skills in the Digital Domain	0.85		0.85		
Organizational Soft Skills in the Digital Domain	0.82		0.74	0.72	
Technology-Related Soft Skills in the Digital Domain	0.66	0.75		0.69	0.78
Research and Development Soft Skills in the Digital Domain	0.41	0.44	0.38	0.36	0.32

The Furnell-Locker index was used to investigate the divergent validity of the research measurement model. According to the Furnell - Locker index, a latent variable should have more dispersion among its questions than other latent variables. Divergent validity refers to the extent to which a test is unrelated to other tests that measure different constructs. In other words, the root mean of the extracted variance of each latent variable must be greater than the maximum correlation of that variable with other latent variables of the model. According to the values of the Furnell-Locker index in Table (6), the divergent validity is confirmed.

The confirmatory factor analysis results show that at the 99% confidence level, the T-Values for all soft skills model for employees' components are outside the range (2.58, -2.58). The functional soft skills in the digital domain, with a workload of 0.81, has more impact, and the research and development soft skills in the digital domain, with a workload of 0.62, has less impact. The functional soft skills in the digital domain with a factor loading of 0.81 has the first rank, and the research and development soft skills in the digital domain with a factor load of 0.947 has the last rank. Additionally, all indicators are statistically significant and acceptable, with a T-Statistic value greater than 1.96, signifying a 99 percent confidence level.

Table 5. Index values and predictive power of the research measurement model

Components	Shared Index Q^2	R^2	Significance Level
Soft Skills in the Digital Communication Domain	0.42	0.72	0.001
Functional Soft Skills in the Digital Domain	0.38	0.55	0.001
Organizational Soft Skills in the Digital Domain	0.16	0.75	0.001
Technology-Related Soft Skills in the Digital Domain	0.38	0.38	0.001
Research and Development Soft Skills in the Digital Domain	0.23	0.47	0.001

Based on the results of Table (5), the research model's coefficient of determination (R2) is a favorable condition. The coefficient of determination index (R2) determines the accuracy of the prediction, and the index (Q2) determines the correlation of the prediction. According to the results of Table (5), the values of variables are generally obtained in the range of 0.15 to 0.35 or greater than 0.35. Therefore, the predictive power of the research constructs is estimated as moderate to strong. The Stone- Geisser's Q2 value predicts the model's power. The Stone- Geisser's Q2 is predictive relevance, which measures whether a model has predictive relevance or not (> 0 is good). The Stone- Geisser's Q2 establishes the predictive relevance of the endogenous constructs. The Stone- Geisser's Q2 values above zero indicate that your values are well reconstructed and that the model has predictive relevance. The value of the Stone- Geisser's Q2 index is positive, so the prediction's validity is confirmed.

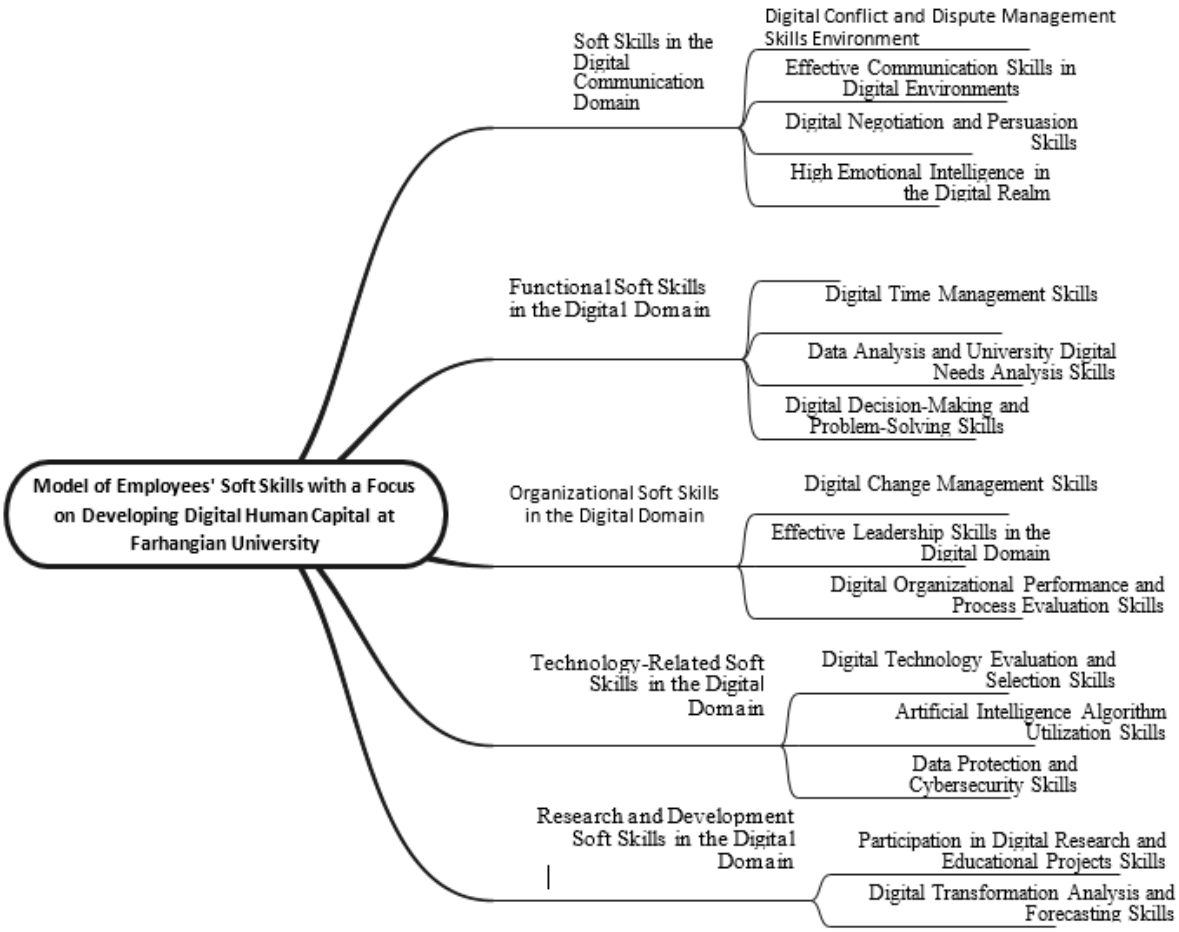

Figure 1. Conceptual Model of Employees' Soft Skills with a Focus on Developing Digital Human Capital at Farhangian University

Discussion

This study investigated the development of a model for employees' soft skills with a digital human capital development approach at Farhangian University in Iran. The study results revealed that the soft skills model for employees using the digital human capital development approach has five main dimensions included: soft communication skills, functional skills, organizational skills, technology-related skills, and research and development in the digital domain. These dimensions encompassed 16 sub-components, including effective communication skills, decision-making in digital environments, technology evaluation, and participation in digital projects. Based on the results, the impact of all components of the soft skills model for employees was confirmed. In addition, all indicators are statistically significant and acceptable, with a T-statistics value of greater than 1.96 indicating 99 percent confidence.

In the quantitative phase, the validity of the research model was confirmed using structural equation modeling (SEM). In addition, the analysis results indicated that performance evaluation and digital organizational processes had the highest impact, while decision-making and problem-solving in the digital domain were the most influenced and held the highest priority among the components. These findings highlighted the critical importance of analytical, decision-making, and management skills in the development of digital human capital.

The current study adds to the literature by providing a structured categorization of soft skills in the digital environments, including digital time management, decision-making, cybersecurity awareness, and AI utilization skills. While previous studies have identified these skills as essential (Antón-Sancho et al., 2021; Poláková et al., 2023), this research integrates them into a holistic model specifically designed for educational institutions, thereby filling a significant research gap. The results of this study are consistent with the results of (Antón-Sancho et al., 2021; Chala & Bouranta, 2021; Karaminezhad et al., 2022; Karneli et al., 2024; khaleghkhah & najafi, 2018; Lok et al., 2021; Poláková et al., 2023; Ryketeng & Syachbrani, 2023). The research findings revealed that functional soft skills in the digital domain have the highest impact on employee performance, followed by organizational soft skills and digital communication soft skills. These results are consistent with previous research highlighting that the digital transformation requires not only technical expertise but also strong interpersonal skills, leadership, and adaptability (Karneli et al., 2024). The growing dependence on digital communication tools such as artificial intelligence, big

data and online collaborative platforms has required staff to develop new skills. The findings of the study also showed that employees need to have high emotional intelligence, digital negotiation skills and effective communication skills to cope with the complexity of the digital environment. These findings align with (Poláková et al., 2023), who emphasized that digital workplaces require improved communication, problem-solving, and analytical thinking skills to ensure effective collaboration. The development of functional soft skills such as digital time management, data analysis and decision- making highlights the evolving requirements of the digital workplace. The findings also echo the work of (Lok et al., 2021), which showed the positive impact of soft skills training on human resources performance and company performance. The research extends this by identifying specific functional soft skills needed to succeed in a digitally transformed university environment. The ability to effectively manage time, analyze data and make informed choices in the digital world is essential for both personal and business efficiency. The importance of organizational soft skills, including digital strategy development, management and performance appraisal, underlines the need to adapt organizational structures and processes to the digital age. (Kiron et al., 2016) claimed that digital transformation requires more than technological implementation; it requires organizational alignment, including increased risk-taking, investment in digital skills for employees and streamlined structures to enable agility. These findings provide a framework for developing these organizational soft skills in the context of universities, which will allow for a more efficient transition to a digital-driven business model. Identifying soft skills related to technology, such as technology assessment, artificial intelligence and cybersecurity, addresses the specific technical competencies needed in the digital age. While previous research has examined the impact of digital transformation on educational institutions (Bresciani et al., 2021; Giones & Brem, 2017), this study addresses the specific soft skills needed to make effective use of these technologies. The ability to assess and choose the right technologies, to use artificial intelligence algorithms and to maintain security is essential to maximize the benefits of digital transformation while mitigating the potential risks. Finally, the emphasis on research and development soft skills, including participation in digital research projects and anticipating digital change, recognized the importance of continuous learning and adaptation to the rapidly changing digital environment. This is consistent with the findings of (Antón-Sancho et al., 2021), which highlighted the importance of soft skills for professional development in higher education. This

study further specified these skills in the context of digital transformation, emphasizing the need for employees to be actively involved in digital research, digital information analysis and anticipating future trends.

While the findings of this study confirmed the critical role of soft skills in digital environments, they also highlighted significant challenges. Challenges such as resistance to change, lack of resources, and insufficient training opportunities were identified. These issues are consistent with the findings of (Rippa & Secundo, 2019), who noted that digital transformation often encounters organizational inertia and skill gaps. On the other hand, the emphasis on activities such as digital change management and the integration of pedagogical and technological knowledge provide opportunities for innovation in the field of employee training. Universities can use digital tools such as gamification and virtual learning environments to increase the effectiveness of soft skills training, as suggested by (Bygstad et al., 2022). The results of this study have both theoretical and practical implications. From a theoretical perspective, the research extends human capital theory by emphasizing the role of digital soft skills in the development of the workforce. Previous human capital models mainly have focused on technical and cognitive skills (Haleem et al., 2022; Lyu & Liu, 2021), whereas this study introduces an integrated approach that includes interpersonal, organizational, and technology-related competencies. From a practical standpoint, educational institutions and policymakers can use these findings to develop targeted training programs to strengthen the employees' digital skills. Universities, in particular, must adopt strategies to promote a balance between technical and soft skills among faculty members and administrative staff (Guinan et al., 2019). Furthermore, organizations can integrate digital leadership and change management skills into their professional development initiatives.

This study has several limitations that should be addressed in future research. The focus on a single university limits the generalizability of the findings. Future studies could replicate this research in other academic or corporate settings to confirm its applicability. The cross-sectional nature of the study does not capture the long-term impact of soft skills training on employee performance. Longitudinal studies are needed to assess these effects over time. While this study emphasizes the importance of soft skills, the interaction between the soft and hard skills in digital environments warrants further investigation. Future research could also investigate the role of cultural factors in shaping the development and application of the soft skills in digital environments. The researchers

recognized instrumental, methodological, and implementation limitations and took several steps to mitigate them, including expert validation, rigorous reliability and validity assessment, triangulation, and ethical safeguards. Nevertheless, they acknowledge that broader generalizability, long-term outcomes, and practical implementation in diverse contexts require further research. To improve content validity, the questionnaire was developed in consultation with 20 professional experts and refined through two rounds, achieving a consensus rate above 80%. To reduce coding subjectivity, intercoder reliability (ICR) was calculated between the research group and an independent assessor, achieving an ICR above 80%, which is considered acceptable. Primary drafts of coded interviews were given back to interviewees for verification, enhancing the accuracy and credibility of qualitative findings. The study reports multiple statistical measures (Cronbach’s alpha, composite reliability, AVE, Furnell-Locker index) to establish reliability and both convergent and divergent validity.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving human participants were reviewed and approved by the ethics committee of Islamic Azad University. The patients/participants provided their written informed consent to participate in this study.

Author contributions

All authors contributed to the study conception and design, material preparation, data collection, and analysis. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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