

## Designing a Human Resources Competency Model in the Age of Digital Transformation

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### Article history:

Received date: 2022/11/01

Review date: 2023/01/05

Accepted date: 2023/03/01

### Keywords:

Human Resources Competency, Digital Transformation, Digital Leadership.

**Purpose:** The current study was conducted with the aim of designing a human resource competency model in the age of digital transformation.

**Methodology:** This study is applied-developmental in terms of purpose. Also, it is a developmental and exploratory sequential type, and the present study is qualitative in terms of data type. The statistical population of this study is made up of experts and specialists who are aware of the subject of the study and specialists in Mobile Communication company of Iran (IR-MCI) and 20 people were selected as a sample using the targeted sampling method. In this study, library and field methods were used to collect information. In this study, the method of text analysis as well as interviews and Delphi were used for data analysis.

**Findings:** The results showed that the competency of digital managers includes 7 components of individual factors, organizational factors, culture of change, digital attitude, communication factors, leadership and management, and technical and specialized factors.

**Conclusion:** Based on the results, there is a significant correlation between all components. The results also showed that the study model has the required validity.

**Please cite this article as:** Abidi M, Zolfaghari Zafarani R, Haghighi M. (2023), Designing a Human Resources Competency Model in the Age of Digital Transformation, *Iranian Journal of Educational Sociology*. 6(1): 103-116.

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## 1. Introduction

In the digital age, due to the emergence of new technologies, the traditional beliefs of business have fundamentally changed. Organizations have only one way forward and that is to keep pace with the existing changes; Otherwise, they will be eliminated from the competition and completely disappear from the scene of existence. Transformational technologies have marked the digital transformation of business, and digital transformation has entered the business literature as a concept (Nouri et al., 2018). In the last decade, the number of companies that have developed the concept of digital transformation with their own actions has been increasing. Digital transformation involves not only the use of new technologies (e.g. advanced analytics, machine learning, artificial intelligence applications, Internet of Things), but also changes in core business elements, including strategy, business model, business processes and Work also includes organizational structures and organizational culture. If managed successfully, digital transformation can lead to business process optimization and better organizational performance. Also, the introduction of new business models and the development of digital products and services will transform the industry (Vuksik et al., 2018). Today, no individual, business, industry, and even any country can achieve success and sustainable development without effective use of information technology, especially without paying serious attention to new technologies of the fourth generation and taking action for digital transformation (Linde et al., 2021). Digital transformation has fundamentally changed the nature of work, organizational boundaries and employee responsibilities in business (Rahmati Kohrorudi et al., 1400). Digital transformation as a new technical-management concept has become a macro trend in modern organizations (Keshavarz et al., 2018).

Meanwhile, managers and employees of every organization always pay attention to the important issue of how to increase the productivity of human resources in the organization. Solutions have been provided in this field. The amount of time, money and facilities that organizations spend in this way shows the importance of developing human resources and increasing the organization's capabilities. On the other hand, the vitality and dynamism of any organization requires continuous and permanent innovation and changes in it (Sepahvand et al., 2016). But we cannot ignore the fact that all the above cases come to reality only when the presumption of competence is observed. Competence is one of the most important elements and factors of human resource productivity of organizations in today's competitive world (Babaei Arbusara et al., 1400).

Promoting the competence of the interactive process paves the way for the continuous development and excellence of professional identity, ethics and professional commitment, specialized knowledge, educational knowledge and attitude, educational skills of employees and managers. In fact, competence is a set of actions and activities that are carried out in the form of long-term plans with the aim of overcoming work defects. In this process, improving competence and empowering people is out of the form of formal and planned courses and actions and is more informal, flexible and continuous. A professional employee is someone who has work competence in several different aspects, these people must be emotional, physical, practical, political, behavioral, experiential, historical, cultural, spiritual and a professional person and have a supportive vision so that they can cause to create sufficient motivation in learners (McLeod et al., 2017). Nevertheless, the competence of the employees in the period that is associated with rapid technological changes is an important matter that can be investigated.

On the other hand, not only the capital market has suffered a historic drop in stock value, but companies have to dramatically change their performance in the midst of a social shutdown. In the meantime, Mobile Communication company of Iran (IR-MCI) is not exempt from this event which puts a huge pressure on the human resources and information technology departments of the organization to adapt their technical capacities, work policies and organizational processes to such a new environment. Since Mobile Communication company of Iran (IR-MCI) is struggling to implement the necessary training for its workforce in the use of digital tools, their leaders are under the microscope of digital readiness to do these things. Therefore, in this study, we aim to investigate and present the human resources competency model in the

age of digital transformation. In fact, in the current study, the author will try to answer the basic question that what human resource competency model can be presented for Mobile Communication company of Iran (MCI) in the age of digital transformation?

## 2. Methodology

The purpose of this study is to design a model for human resource competence in the era of digital transformation of Mobile Communication Company of Iran (Appendix 1). The purpose of applied study is to develop applied knowledge in a specific field. In other words, these studies are used to meet human needs by using the cognitive background and information provided by basic studies. On the other hand, development study is a process that is carried out in order to formulate and determine the suitability of a product. Therefore, the current study is applied-developmental in terms of purpose. This study is of sequential-developmental and exploratory type, and qualitative in terms of the type of data. In this study, the qualitative method of thematic analysis is used to build the model. In this study, field and library methods were used to collect the required data.

The statistical population of the study is made up of experts and specialists who are aware of the study topic and specialists in Mobile Communication Company of Iran (MCI) as well. In this study, non-probability sampling methods were used in the form of snowball and sampling continued until theoretical saturation. In this regard, 20 experts were selected as a quantitative sample. These people have the following conditions:

- Having research in the field of human resources and digital developments
- Having at least 5 years of management experience
- Having postgraduate education and more

**Table 1: Demographic information of the participants**

| variable                                             | class                                                               | Abundance | variable  | class           | Abundance | variable        | class               | Abundance |
|------------------------------------------------------|---------------------------------------------------------------------|-----------|-----------|-----------------|-----------|-----------------|---------------------|-----------|
| The place of service                                 | managers and senior experts of Mobile Communication Company of Iran | 15        | education | PhD             | 17        | age             | Lower than 39 years | 5         |
|                                                      | Managers and experts in the communication industry                  | 3         |           | Master's degree | 3         |                 | 40 to 45            | 9         |
|                                                      |                                                                     |           |           |                 |           |                 | 46-50               | 3         |
|                                                      |                                                                     |           |           |                 |           |                 | Above 50            | 3         |
| Professors of management and organizational behavior |                                                                     | 2         | gender    | Female          | 6         | work experience | Under 15 years      | 1         |
|                                                      |                                                                     |           |           | male            | 14        |                 | 16-20 years         | 7         |
|                                                      |                                                                     |           |           |                 |           |                 | Over 20 years       | 12        |

Structured interviews were used in this study. After making the necessary arrangements, the researcher attended the interviewee's workplace and recorded the interview conversations using a tape recorder and with the permission of the interviewee to extract the codes, and of course this was done after each interview, and the researcher in the interview 21 and 22 found that a new code was not added to the previous codes and therefore did not continue the interview process with the next interviewee. In order to ensure the validity of the tool and to ensure the accuracy of the findings from the researcher's point of view, valuable opinions of

professors familiar with this field and university experts who were experts and knowledgeable in this field were used. Also, at the same time, help was taken from the participants in analyzing and interpreting the data. In the current study, retest reliability and intra-subject agreement method were also used to calculate the reliability of the conducted interviews. In this study, the reliability coefficient between codifications done was 79%, which indicates its acceptability. In the data analysis, exploratory coding system using Delphi method was also used to identify the components.

### 3. Findings

In this study, the dimensions, components and indicators of human resource competence in the age of digital transformation in Mobile Communication company of Iran (Appendix 1) have been identified. In order to find the answer to this question, the sources were searched. The results of examining the theoretical foundations and background of the study are as described in the following table:

**Table 2:** Components and indicators extracted from the literature

| dimentions                                   | Component                         | Indicator                                         | source                                                             |
|----------------------------------------------|-----------------------------------|---------------------------------------------------|--------------------------------------------------------------------|
| Human resource competence in the digital age | Authentic pragmatist              | Structural factors                                | Abedi Ardakani et al. (2021)                                       |
|                                              |                                   | Adding value and abandoning fault finding         | Bongiorno et al                                                    |
|                                              |                                   | Goals and standards                               | Hosseinpour Shahriari and Farrokhi(2016)                           |
|                                              |                                   | Support activities                                | Hosseinpour Shahriari and Farrokhi(2016)                           |
|                                              |                                   | Background                                        | Abedi Ardakani and colleagues (2021)                               |
|                                              |                                   | Strategy                                          | Kheder and Shami Zanjani (2019)                                    |
|                                              |                                   | Synchronization of technical and social resources | Kheder and Shami Zanjani (2019)                                    |
|                                              | Individual factors                | Behavioral                                        | Abedi Ardakani and colleagues (2021)                               |
|                                              |                                   | Technological intelligence                        | Led by Dehkordi and colleagues (2021)                              |
|                                              |                                   | social intelligence                               | Led by Dehkordi and colleagues, (2021)                             |
|                                              |                                   | Psychological Empowerment                         | Babaei et al(2017) .                                               |
|                                              |                                   | Emotional Intelligence                            | Led by Dehkordi et al. (2021), Babaei et al .(2018)                |
|                                              |                                   | Creativity                                        | Babaei et al. (2017), Crawford and Butler(2021)                    |
|                                              |                                   | Competitive insight                               | Led by Dehkordi and colleagues (2021)                              |
|                                              | Technical and specialized factors | Technical and specialized skills                  | Kaviani et al. (2019), Khawaja Ali Jahan Tighi and Abdullahi(2019) |
|                                              |                                   | Entrepreneurial skills                            | Ankhjav et al(2021) .                                              |
|                                              |                                   | Commitment to digitization                        | Gupta et al(2021) .                                                |
|                                              | Change management and culture     | User-centricity and cultural insight              | Led by Dehkordi and colleagues (2021)                              |
|                                              |                                   | Agility                                           | Crawford and Butler (2021), Linde et al(2021) .                    |

|                           |                                                                                        |                                             |
|---------------------------|----------------------------------------------------------------------------------------|---------------------------------------------|
| Leadership and management | Organizational culture for process digitization                                        | Gupta et al(2021) .                         |
|                           | Continuous learning change-oriented                                                    | van den Berg et al(2020) .                  |
|                           | Flexibility                                                                            | Kane et al(2019) .                          |
|                           |                                                                                        | Hosseinpour Shahriari and Farrokhi(2016)    |
|                           | Development of functional skills                                                       | Gupta et al(2021) .                         |
|                           | Cultural                                                                               | Kheder and Shami Zanjani (2019)             |
|                           | Leadership of organizational learning and innovation                                   | Led by Dehkordi and colleagues (2021)       |
|                           | Decisive and pragmatic leadership                                                      | Kane et al(2019) .                          |
|                           | Setting ambitious and challenging goals                                                | Mofart and Swaminathan (2018)               |
|                           | Inspiration and motivation for all people                                              | Mofart and Swaminathan (2018)               |
| Digital attitude          | Establishing persuasive communication in line with the goals of digital transformation | Mofart and Swaminathan (2018)               |
|                           | Senior management support                                                              | Gupta et al(2021) .                         |
|                           | Digital leadership                                                                     | Baslova et al(2022) .                       |
|                           | Leadership                                                                             | Kheder and Shami Zanjani (2019)             |
|                           | Technology                                                                             | Kheder and Shami Zanjani (2019)             |
|                           | Convincing people for digital transformation in the organization                       | Mofart and Swaminathan (2018)               |
|                           | Understanding digital technology                                                       | Kane et al(2019) .                          |
|                           | Show opportunities and challenges in an attractive way to create positive energy       | Bongiorno et al(2018) .                     |
|                           | Forward visioning                                                                      | Kane et al(2019) .                          |
|                           | Digital innovation                                                                     | Baslova et al(2022) .                       |
| Job factors               | Digital skills                                                                         | Ankhjav et al(2021) .                       |
|                           | Positive learning orientation                                                          | Crawford and Butler(2021)                   |
|                           | Job motivation                                                                         | Babaei et al. (2017), Kaufman et al(2021) . |
|                           | Cognitive                                                                              | Khawaja Ali Jahan Tighi and Abdullahi(2019) |
|                           | Attitudinal                                                                            | Khawaja Ali Jahan Tighi and Abdullahi(2019) |
| Organizational factors    | Job                                                                                    | Kheder and Shami Zanjani (2019)             |
|                           | Strategic alignment                                                                    | Nicholas et al(2021) .                      |
|                           | Cultivating positive organizational practices                                          | van den Berg et al(2020) .                  |
|                           | Brand                                                                                  | Kheder and Shami Zanjani (2019)             |
|                           | The physical environment                                                               | Kheder and Shami Zanjani (2019)             |

| Communication factors | Organizational atmosphere                                                                               | Babaei et al(2017) .                                           |
|-----------------------|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
|                       | Participation                                                                                           | Hosseinpour Shahriari and Farrokhi(2016)                       |
|                       | Being a team and teamwork                                                                               | Hosseinpour Shahriari and Farrokhi (2016), Kane et al . (2019) |
|                       | Connections                                                                                             | Hosseinpour Shahriari and Farrokhi(2016)                       |
|                       | Digital interaction with customers                                                                      | Baslova et al. (2022), Lindh et al(2021) .                     |
|                       | Digital Customer Experience Management                                                                  | Baslova et al(2022) .                                          |
|                       | self-concept                                                                                            | Kaviani et al(2019) .                                          |
|                       | Consciousness                                                                                           | Crawford and Butler(2021)                                      |
|                       | Human resource relations skills                                                                         | Ankhjav et al(2021) .                                          |
|                       | Stakeholder relationship management                                                                     | van den Berg et al(2020) .                                     |
|                       | Establishing a proper balance between control and innovation by emphasizing the promotion of innovation | Bongiorno et al(2018) .                                        |

Next, the interview technique was used to collect experts' opinions. In this regard, according to the theoretical framework of the study, questions were asked to the experts as follows:

What is your definition of competence?

What competencies are considered for employees in the digital age?

What skills should employees have in the digital age?

In your opinion, what are the individual digital competencies?

In your opinion, what are the technical and specialized skills of digital?

In your opinion, what are the digital organizational competencies?

After raising the questions, the experts raised the following indicators in response to the questions.

**Table 3:** Indicators extracted from the interview

| Indicator                                                       | Interviewee code |
|-----------------------------------------------------------------|------------------|
| latent talents of people in terms of behavior (soft competence) | I2.I8.I9.I6      |
| People's expertise (competency set)                             | I3.I5            |
| Talents that turn into expertise and professionalism            | I7               |
| Communication skills                                            | I4.I9.I13.I8     |
| Introversion                                                    | I16.I8           |
| Proper understanding of virtual space and applications          | I17.I15          |
| Having ideas for improvement and progress                       | I20.I19.I11      |
| Mastery of technical tools related to the job                   | I3.I4.I5         |
| Ability to work with computers and smart phones                 | I6.I1            |
| Self Confidence                                                 | I12.I7.I19       |
| Leadership and acceptance of teamwork                           | I13              |
| the sense of being seen by people (being understood)            | I15.I16.I2       |
| Predictable characteristics of people                           | I12.I11          |
| Emotional Intelligence                                          | I10.I6.I18.I13   |
| High flexibility                                                | I20.I8.I14       |
| Ability to analyze events                                       | I7.I5.I6         |
| Distinguishing right from wrong                                 | I9.I8.I16        |

|                                               |             |
|-----------------------------------------------|-------------|
| Identifying the causes of events              | I17.I20     |
| The power of critical thinking                | I3.I13.I15  |
| Mastery of world languages                    | I16.I15.I7  |
| Has a systemic approach                       | I18.I20     |
| Knowing new tools and moving towards learning | I3.I2       |
| Foresight                                     | I1.I9.I15   |
| risk taking                                   | I14         |
| Ability to persuade people                    | I9          |
| Motivate others                               | I20.I14.I15 |
| A forward-looking view                        | I12.I9      |
| Programming and coding ability                | I8          |
| up to date                                    | I11.I15     |
| ready for change                              | I3.I8.I16   |

As it can be seen, 30 codes were extracted from interviews with experts. In order to achieve the final and integrated model, the codes extracted from the text analysis process as well as the interviews were provided to the experts in the form of a Delphi questionnaire being asked to refine the codes. In this regard, codes that scored less than 4 were excluded from the Delphi round. Also, many codes were modified by experts.

In the first round of Delphi, 36 indicators scored less than 4. As a result, these indicators were not included in the second round of Delphi, and one indicator was modified from the experts' point of view. In the second round of Delphi, no indicators were eliminated and all indicators scored above 4. To ensure the finalization of the indicators, the Delphi process was repeated in the third round. Finally, relying on the opinions of experts, the final codes were categorized and presented in the form of the table below.

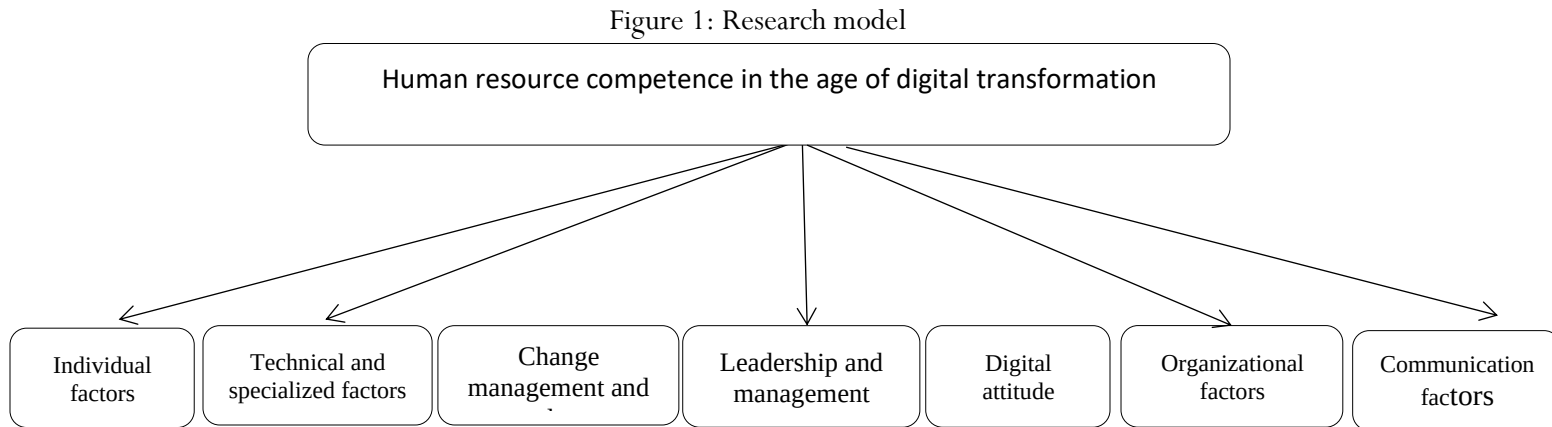
**Table 4:** Codes extracted from the Delphi process

| Component                     | Indicator                                                       | Source                                              | Interviewee code |
|-------------------------------|-----------------------------------------------------------------|-----------------------------------------------------|------------------|
| Individual factor             | risk taking                                                     |                                                     | I14              |
|                               | Predictable characteristics of people                           |                                                     | I12.I11          |
|                               | latent talents of people in terms of behavior (soft competence) |                                                     | .I8.I9.I6        |
|                               | Ability to analyze events                                       |                                                     | I7I5.I6          |
|                               | Self Confidence                                                 |                                                     | I12.I7.I19       |
|                               | social intelligence                                             | Led by Dehkordi and colleagues (2021)               |                  |
|                               | Psychological Empowerment                                       | Babaei et al(2017) .                                |                  |
|                               | The power of critical thinking                                  |                                                     | I3.I13.I15       |
|                               | Emotional Intelligence                                          | Led by Dehkordi et al. (2021), Babaei et al .(2018) | I10.I6.I18.I13   |
|                               | Creativity                                                      | Babaei et al. (2017), Crawford and Butler(2021)     |                  |
|                               | Technical and specialized factors                               | Distinguishing right from wrong                     | I9.I8.I16        |
|                               | Mastery of technical tools related to the job                   |                                                     | I3.I4.I5         |
|                               | Talents that turn into expertise and professionalism            |                                                     | I7               |
|                               | Mastery of world languages                                      |                                                     |                  |
|                               | Programming and coding ability                                  |                                                     | I8               |
| Change management and culture | Entrepreneurial skills                                          | Ankhjav et al(2021) .                               |                  |
|                               | User-centricity and cultural insight                            | Led by Dehkordi and colleagues (2021)               |                  |
|                               | systematic approach                                             |                                                     | I18.I20          |
|                               | up to date                                                      |                                                     | I11.I15          |

|                           |  |                                                                                        |                                                                |              |
|---------------------------|--|----------------------------------------------------------------------------------------|----------------------------------------------------------------|--------------|
|                           |  | Agility                                                                                | Crawford and Butler (2021), Linde et al(2021) .                |              |
|                           |  | Continuous learning                                                                    | van den Bergh et al. (2020), Krafur and Butler(2021)           |              |
|                           |  | ready for change                                                                       | Kane et al(2019) .                                             | 13.18.116    |
|                           |  | Flexibility                                                                            | Hosseinpour Shahriari and Farrokhi(2016)                       | 120.18.114   |
|                           |  | Development of functional skills                                                       | Gupta et al(2021) .                                            |              |
| Leadership management and |  | Decisive and pragmatic leadership                                                      | Kane et al(2019) .                                             |              |
|                           |  | Setting ambitious and challenging goals                                                | Mofart and Swaminathan(2018)                                   |              |
|                           |  | Inspiration and motivation for all people                                              | Mofart and Swaminathan(2018)                                   |              |
|                           |  | Establishing persuasive communication in line with the goals of digital transformation | Mofart and Swaminathan(2018)                                   |              |
|                           |  | Senior management support                                                              | Gupta et al(2021) .                                            |              |
|                           |  | Digital leadership                                                                     | Baslova et al(2022) .                                          |              |
|                           |  |                                                                                        |                                                                |              |
| Digital attitude          |  | Proper understanding of virtual space and applications                                 |                                                                | 117.115      |
|                           |  | Commitment to digitization                                                             | Gupta et al(2021) .                                            |              |
|                           |  | Technological intelligence                                                             | Led by Dehkordi and colleagues(2021)                           |              |
|                           |  | Ability to work with computers and smart phones                                        |                                                                | 16.11        |
|                           |  | Convincing people for digital transformation in the organization                       | Mofart and Swaminathan(2018)                                   |              |
|                           |  | Knowing new tools and moving towards learning                                          | Kane et al(2019) .                                             | 13.12        |
|                           |  | Show opportunities and challenges in an attractive way to create positive energy       | Bongiorno et al(2018) .                                        |              |
|                           |  | Digital innovation                                                                     | Baslova et al(2022) .                                          |              |
|                           |  | Digital skills                                                                         | Ankhjav et al(2021) .                                          |              |
| Organizational factors    |  | Having ideas for improvement and progress                                              |                                                                | 120.119.111  |
|                           |  | A forward-looking view                                                                 | Kane et al(2019) .                                             |              |
|                           |  | the sense of being seen by people (being understood)                                   |                                                                | 115.116.12   |
|                           |  | Organizational culture for process digitization                                        | Gupta et al . (2021)                                           |              |
|                           |  | Cultivating positive organizational practices                                          | van den Berg et al . (2020)                                    |              |
|                           |  | Brand improvement                                                                      | Kheder and Shami Zanjani(2019)                                 |              |
|                           |  | The physical environment                                                               | Kheder and Shami Zanjani(2019)                                 |              |
|                           |  | Organizational atmosphere                                                              | Babaei et al(2017) .                                           |              |
| Communication factors     |  | participation                                                                          | Hosseinpour Shahriari and Farrokhi(2016)                       |              |
|                           |  | Leadership and acceptance of teamwork                                                  | Hosseinpour Shahriari and Farrokhi (2016), Kane et al . (2019) | 113          |
|                           |  | Ability to persuade people                                                             |                                                                | 19           |
|                           |  | Motivate others                                                                        |                                                                | 120.114.115  |
|                           |  | Digital interaction with customers                                                     | Baslova et al. (2022), Lindh et al . (2021)                    |              |
|                           |  | Communication skills                                                                   | Ankhjav et al(2021) .                                          | 14.19.113.18 |
|                           |  | Stakeholder relationship management                                                    | van den Berg et al(2020) .                                     |              |



Based on the surveys, the study model is as follows:



To check the final model, a model assessment questionnaire was prepared to determine the degree of fit of the model in the form of a five-level spectrum and provided to 30 experts in this field. Then, the collected data was evaluated using the one-sample t-test, the results of which can be seen in the following table:

**Table 5:** T-test results of a sample to determine the degree of suitability of the proposed model to present the final model

| Expected mean = 3 |                   |                                                                                             |                    |       |       |      |       |
|-------------------|-------------------|---------------------------------------------------------------------------------------------|--------------------|-------|-------|------|-------|
| Row               | Questions         | Average                                                                                     | standard deviation | t     | df    | Sig. |       |
| 1                 | adaptation        | Are concepts generated from the reviewed data?                                              | 3.68               | 1.251 | 9.45  | 29   | 0.000 |
| 2                 | comprehensibility | Are the concepts recognized and linked together in a systematic way?                        | 3.84               | 1.225 | 11.90 | 29   | 0.000 |
| 3                 |                   | Are the categories well formulated?                                                         | 3.66               | 1.338 | 8.62  | 29   | 0.000 |
| 4                 | generalizability  | Has the theory been explained in such a way that it takes into account changing conditions? | 3.8                | 1.257 | 11.05 | 29   | 0.000 |
| 5                 |                   | Are the macro conditions that may affect the studied phenomenon explained?                  | 3.7                | 1.185 | 10.27 | 29   | 0.000 |
| 6                 | Control           | Do the theoretical findings seem important?                                                 | 3.64               | 0.885 | 12.64 | 29   | 0.000 |

The results of the above table show:

### Adaptation

In matching the model, the calculated t statistic (9.45) is significant at the 0.01 level. The comparison of the average of this part of the model (3.68) with the expected average shows that the adaptation of the model is valid according to experts having been confirmed with 99% confidence.

### Comprehensibility

In the understanding of the model, the calculated t statistic (11.82) is significant at the 0.01 level. Comparing the average of this part of the model (3.75) with the expected average shows that the model's

comprehensibility is valid from the point of view of experts and it has been confirmed with 99% confidence. Regarding comprehension questions, the t statistic calculated for both questions is significant at the 0.01 level and the average observed in each of these two questions is higher than the expected average (3); Therefore, according to experts, it is considered part of the understanding of the model.

### Generalizability

In the generalizability of the model, the calculated t statistic (11.82) is significant at the 0.01 level. Comparing the average of this component of the model (3.75) with the expected average shows that the generalizability of the model is valid according to experts and it has been confirmed with 99% confidence. Regarding generalizability questions, the t statistic calculated for both questions is significant at the 0.01 level and the average observed in each of these two questions is higher than the expected average (3); Therefore, according to experts, it is considered part of the generalization ability of the model.

### Control

In model control, the calculated t statistic (12.64) is significant at the 0.01 level. Comparing the average of this part of the model (3.64) with the expected average shows that the controllability of the model is valid according to experts and it has been confirmed with 99% confidence. Regarding the control questions, the t statistic calculated for both questions is significant at the 0.01 level and the average observed in each of these two questions is higher than the expected average (3); Therefore, according to experts, it is considered part of model control.

## 4. Discussion

As it was observed, the current study was conducted with the aim of designing the human resource competency model in the age of digital transformation. In this regard, based on the literature review, a model was presented. Based on the results obtained, human resource competence in the age of digital transformation has 7 components as follows:

**Individual factors:** risk-taking, predictable characteristics of people, hidden talents of people in terms of behavior (soft competence), ability to analyze events, self-confidence, social intelligence, psychological empowerment, critical thinking power, emotional intelligence and creativity. Managing and monitoring the digital transformation of an organization requires new management methods, new capabilities and competencies for leadership. An organization can successfully establish digital governance at the organization level if it can create a forward-looking, comprehensive and innovative plan for survival in the digital era in the organization. A digital transformation ruler determines, directs and monitors the organization's digital transformation actions according to the duties and competencies needed to influence this responsibility, and aligns the direction of activities with the organization's overall goals. The presence of digital governance will prevent the wastage of resources and increase the effect of digital transformation measures. The responsibilities of digital transformation are so diverse and complex that a senior manager who also has other responsibilities cannot be expected to fulfill them. For example, the main task of the chief information officer is to manage information technology operations and upgrade the platforms and system infrastructure in the organization; But digital transformation does not only mean the digitization of the organization's resources, but its result should be seen in profitability and innovation in organizational products. Also, the skills needed by a digital transformation officer are different from those of IT managers. In this regard, the leadership of Dehkordi et al. (1400) in their study pointed to emotional intelligence and social intelligence as an important characteristic of a digital leader. Also, Babaei et al. (2017) consider psychological empowerment as an important factor in the competence of digital managers.

**Technical and specialized factors:** distinguishing right and wrong, mastery of job-related technical tools, talents that turn into expertise and professionalism, mastery of world languages, programming and coding

skills, and entrepreneurial skills. Managers active in digital fields often need to be aware of trends and innovations in this field. Many experts in the field of evaluating the status of digital managers emphasize their skills for accurate and 24-hour business management. Today, many digital managers have little control over the state of their business in practice. The reason for this is the use of tools with artificial intelligence. Monitoring the status of sales, marketing and coordinating with market needs takes a lot of time. The use of digital tools with artificial intelligence significantly saves the time and money of digital managers. For this very reason, most digital managers no longer pay attention to details in the field of business. In this regard, Ankhjav et al. (2021) pointed to entrepreneurial skills as a specialized feature in senior managers.

**Change and culture management:** user-centeredness and cultural insight, systems approach, up-to-dateness, agility, continuous learning, readiness for change, flexibility and development of functional skills. A chief digital officer will only be useful in an organization that has a serious commitment to digital transformation, and the various costs that come with it. Before appointing this organizational post, it is necessary to ensure the coordination and integrity of the entire organization. Due to the change in the structure of the organization, the chain of command will undergo a change with the beginning of the digital journey. Willingness to innovate in the field of business is the most important characteristic of digital managers. They are always looking for new ways to do business. This will cause a lot of problems for them. Searching for new conditions and positions is one of the most important characteristics of such managers. Many traditional managers, after finding ways to operate and organize business, do not seek to change them. This will bring many problems for the future of any business. When there is no change, the possibility of attracting the attention of the target audience will also disappear. The need to be aware of new business conditions is important for every digital manager. The reason for this is the rapid changes in the digital world, compared to traditional businesses, so any stagnation and lack of innovation in the field of digital businesses will mean the end of business success. Crafor and Butler (2021), Linde et al. (2021) in a similar study, introduced agility as one of the most important characteristics of digital senior managers. Van den Berg et al. (2020), Krafur and Butler (2021) also mentioned continuous learning. Kane et al. (2019) also mentioned readiness for change. Hosseinpour Shahriari and Farrokhi (2016) also mentioned flexibility.

**Leadership and Management:** Decisive and pragmatic leadership, setting ambitious and challenging goals, inspiring and motivating all people, persuasive communication in line with digital transformation goals, senior management support and digital leadership. Today, the professional leadership and sustainability of organizations depends on the existence of managers and specialists who have different degrees of competencies that are constantly changing due to the successive technological advances required for all types of organizations. One of the main reasons for the failure of digital transformation projects is the lack of clear governance of this phenomenon in the organization. Many believe that the "Chief Digital Manager" is an effective answer to this organizational need and the existence of this role has a significant impact on the success of such projects. In the digital age, the chief information officer is expected to participate in the strategic areas of the organization's decisions and devote more time to investigating innovations and value creation for the organization. But the management of information technology resources of the organization is so broad that one cannot expect an organizational official (such as the chief information officer) to be responsible for the digital transformation of the organization in view of the digital age. Due to the inability of the chief information officer (or any other chief officer) to lead the digital transformation in the organization, the CEO should choose a new person for this purpose. There is no uniform definition for a chief digital officer in an organization. A chief digital officer is generally a business strategist which has a detailed understanding of the effects of digital technologies at the organization level. "Hafek and colleagues" consider the chief digital officer responsible for the transformation of the organization through digital technologies. He is responsible for the application of digital technologies in issues that flow from inside the organization to outside it (such as products and services). In general, he is responsible for operationalizing the organization's digital strategy. In

this regard, Kane et al. (2019) focused on assertive leadership for digital managers in their study. Meffert and Swaminathan (2018) pointed out factors such as setting ambitious and challenging goals, inspiring and motivating all people, and establishing persuasive communication in line with the goals of digital transformation. Gupta et al. (2021) also emphasized the support of the top manager.

**Digital attitude:** proper understanding of virtual space and practical applications, commitment to digitization, technological intelligence, skill in working with computers and smart phones, persuading people for digital transformation in the organization, recognizing new tools and moving towards learning, presenting opportunities and challenges in an attractive way to create positive energy, digital innovation and digital skills. Digital entrepreneurs and managers never think about the final result of their work. They consider long-term goals as well as short-term goals, so their main priority is to achieve success in relation to short-term goals. The main advantage of this will be to reduce the constant pressure on work teams. The interesting thing is that when the work pressure on company members decreases, their work quality will increase significantly. This means the possibility of having a better impact on employees and pursuing short-term goals. Designing short-term goals is often more difficult than designing long-term goals. The reason for this is the need to coordinate short-term goals with long-term goals. If businesses do not pay attention to this important point, all their business activities and efforts will remain fruitless. This is very important from the point of view of digital entrepreneurs. That's why often Sometimes they design short-term goals with great precision. In this way, achieving long-term goals is achieved indirectly and as a result of pursuing short-term goals. In this regard, Gupta et al. (2021) referred to the commitment to digitization. Dehkordi et al. (1400) also emphasized technological intelligence. Meffert and Swaminathan (2018) also emphasized on persuading people for digital transformation in the organization. In a similar study, Kane et al. (2019) pointed to the recognition of new tools and moving towards learning. Bongiorno et al. (2018) also mentioned presenting opportunities and challenges in an attractive way to create positive energy.

**Organizational factors:** having ideas for improvement and progress, a forward-looking view, a sense of people being seen (being understood), organizational culture for digitizing the process, fostering positive organizational practices, improving the brand name, physical environment and organizational atmosphere. Maybe at first, many business owners, upon hearing the term digital transformation or digitalization, find this mentality that they are only going to use new technologies, software and processes that are more efficient than traditional methods in their business. But the fact is that digitalization is a new and innovative solution that actually targets the core of the business. When an organization or a manager decides to lead their business towards digital transformation, they should remember that there are going to transform many thoughts, processes, actions, values, goals, etc. using a suitable digital thinking, which will ultimately have a direct impact on work output, cost, time, and relationships with its customers. In this regard, Kane et al. (2019) emphasized a forward-looking perspective. Also, Gupta et al. (2021) mentioned organizational culture for process digitalization. Van den Berg et al. (2020) also mentioned the cultivation of positive organizational practices. Kheder and Shami Zanjani (2019) also pointed out the improvement of brand name and organizational atmosphere in their study.

**Communication factors:** participation, leadership and acceptance of teamwork, ability to persuade people, motivate others, digital interaction with customers, communication skills and management of relations with stakeholders. Forming work teams is one of the most important points for businesses. Digital managers always have a high skill to mix the right employees and create the right teams. Often, traditional managers emphasize the same skills of team members. This results in the formation of a homogeneous team of employees. Entrepreneurs and digital managers are at the opposite end. They constantly pay attention to the need to diversify the skills of team members in an effort to influence the target audience. This leads to the formation of teams with significant differences in terms of skills. Every successful work team must have

diverse skills. The traditional view in this direction is to attract employees with a wide range of skills in different fields. Today, work teams are mostly composed of people with specialized and diverse skills. The advantage of this is the possibility of managing tasks separately and with high expertise. In this regard, Hosseinpour Shahriari and Farrokhi (2016), Kane et al. (2019) pointed out leadership and acceptance of teamwork. Baslova et al. (2022), Linde et al. (2021) also emphasize digital interaction with the customer. Ankhjav et al. (2021) also emphasized communication skills in their study. Van den Berg et al. (2020) also proposed managing relations with stakeholders in this regard.

## Acknowledgments

In this research, the ethical standards including obtaining informed consent, guaranteeing privacy, confidentiality, etc. are observed, and the participants are hereby thanked.

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