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The role of talent management in developing technological competencies: The mediating role of information technology: An applied study on the Jordanian private universities

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Abstract---This study aimed to clarify the role of talent management in the development of technological competencies as the mediating role of information technology. The study population consisted of the Jordanian private universities, where the application was applied to a sample that included a group of (department manager, human resources manager, department head, and administrative employee). The researcher relied on the quantitative approach in collecting primary data by making a questionnaire, developing it and distributing it to the Jordanian private universities. The hypotheses were analyzed and tested using appropriate statistical methods and the use of the Statistical Package for Social Sciences (SPSS). The final sample amounted to (220) questionnaires. The study reached a set of results, the most important of which is that there is a statistically significant effect at the level of significance ($\alpha \geq 0.05$) for talent management in developing the technological competencies. One of the most important recommendations of the study is the keenness to use appropriate advertising media in identifying talented people.

Keywords---talent management, developing technological competencies, information technology, Jordanian private universities.

Introduction

With the increasing waves of globalization that the countries of the world witness in the recent era that is characterized by continuous change, talents has become a high-value human capital in light of the intensity of competition for

competencies, and the migration of competencies between countries has increased significantly (Al-Zayoud and Al-Omari, 2022). Moreover, with the emergence of the struggle of organizations and countries to attract and possess talents, and employ these talents to achieve its goals, countries began to develop strategies and methods for talent management (Abdullahi et al., 2022), linking this to the technological development plans in line with its future ambition. Also, these countries proposed mechanisms and systems necessary to provide the appropriate environment for management and development of those talents, with aim of preparing promising leaders capable of building the future and achieving the planned goals (Baradaran et al., 2022).

The experiences of developed countries such as Japan, Germany, China, Malaysia and others confirm that achieving talent management is one of the most important units that contribute to winning competition between universities (Al-Harbi, 2022) and achieving its goals. This can be achieved not only through the establishment of units for human talents in the organizational structure of the university and the formal interest in talents (Mujtaba and Mubarik, 2022) or even activating its role, but rather to work strategically to increase the preparation of talented people through education, training and development programs. This made talent management come at the forefront of the priorities of private universities, because of its important role in the success and continuity of the organizations (Wahba et al., 2021).

Effective use of technology requires the availability of skills among the employees, so universities seek to attract and attract talents and competencies, as the process of developing technological competencies is affected by the level of competencies that are attracted, (Masry-Herzalah and Dor-Haim, 2022). The more the skill level of talents progresses, the more the university's activities have developed. This is due to the productivity of people with advanced talents (Al-Hamzawi, 2017). It has become necessary for all university employees to possess basic technological skills. Technological competencies vary to basic knowledge of hardware and software, the basics of the Internet, e-mail, and writing skills. These competencies are recommended for all university employees (Absher, 2020). Technological competencies have become the main base that private universities seek to develop and develop, especially after the events of the Corona pandemic, which led to the disruption of many organizations as a result of their lack of readiness to perform business using technological tools and means, and the unwillingness of their personnel to work on these tools and means. Consequently, private universities seek to attract talents to maintain their readiness in light of the intense competitive environment. Therefore, it aimed to develop their business through the development of the technological competencies by means of information technology and attract them in order to form a team of technologically qualified people capable of dealing with the changes and developments in business or activities and functional tasks for all jobs. Therefore, this study aimed to indicate the impact of talent management on the development of technological competencies. Thus, the problem of the study can be formulated through the following main question:

Is there a role for talent management represented by its dimensions (talent identifying, attracting talents, developing talents, talent retention) on developing

technological competencies represented by its dimensions (technological knowledge, technological skill) as the mediating role of information technology in the Jordanian private universities?

Importance of the study

The importance of the study springs from addressing the variable of talent management in the development of technological competencies and its active role in business performance in light of the rapid developments and changes that the world is witnessing in the technological environment. This is achieved through information technology as a mediating variable, where technological competencies contribute to performing the duties, tasks and activities of jobs with high efficiency. The study also reaches some results and recommendations that will contribute to building new strategies to enhance and improve technological competencies through information technology, especially since all educational organizations and universities have turned to distance education after the Corona pandemic. Furthermore, the study will provide results and recommendations regarding talent management and how to attract and retain talents.

Study objectives

This study aims at identifying the level of talent management in the Jordanian private universities, by recognizing the level of the development of technological competencies, information technology, technological knowledge, and technological skill in the Jordanian private universities.

Study model

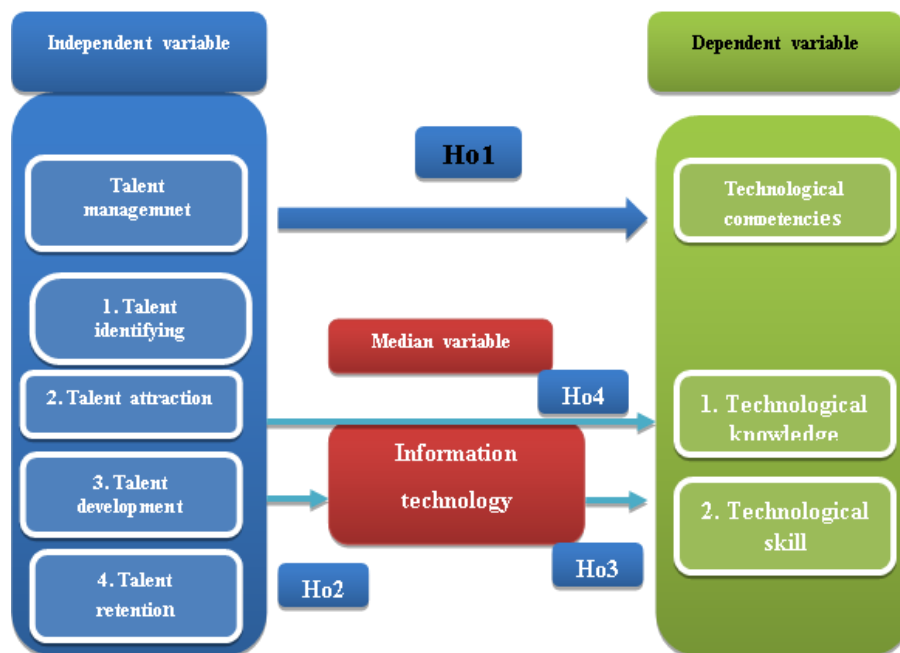


Figure no (1): Study model

Study hypotheses

The main study hypothesis (H01): There is no statistically significant effect at the level of significance ($\alpha \leq 0.05$) for talent management represented by its dimensions (talent identifying, talent attraction, talent development, talent retention) on developing technological competencies represented by its dimensions (technological knowledge, technological skill) in the Jordanian private universities.

To test this hypothesis, it was divided into the following sub-hypotheses:

H01.1: There is no statistically significant effect at the significance level ($\alpha \geq 0.05$) for talent identifying on the development of technological competencies represented by its dimensions (technological knowledge, technological skill) in the Jordanian private universities.

H01.2: There is no statistically significant effect at the level of significance ($\alpha \geq 0.05$) for talent attract in developing technological competencies represented by its dimensions (technological knowledge, technological skill) in the Jordanian private universities.

H01.3: There is no statistically significant effect at the significance level ($\alpha \geq 0.05$) for talent development in developing technological competencies represented by its dimensions (technological knowledge, technological skill) in the Jordanian private universities.

H01.4: There is no statistically significant effect at the significance level ($\alpha \geq 0.05$) for talent retain on the development of technological competencies represented by its dimensions (technological knowledge, technological skill) in the Jordanian private universities.

The main study hypothesis (H02): There is no statistically significant effect at the level of significance ($\alpha \geq 0.05$) for talent management represented by its dimensions (talent identifying, talent attraction, talent development, talent retention) on information technology in the Jordanian private universities.

The main hypothesis of the study (H03): There is no statistically significant effect at the level of significance ($\alpha \geq 0.05$) for information technology on the development of technological competencies represented by its dimensions (technological knowledge, technological skill) in the Jordanian private universities.

The main hypothesis of the study (H04): There is no statistically significant effect at the level of significance ($\alpha \geq 0.05$) for talent management represented by its dimensions (talent identifying, talent attraction, talent development, talent retention) on developing technological competencies represented by its dimensions (technological knowledge, technological skills) with the presence of information technology in the Jordanian private universities.

Theoretical framework and previous studies

Introduction

Talent management has become one of the modern topics that that attracted attention in recent times. It has become a rich field for many researchers and writers in the discipline of human resource management in various types of

organizations (Tantawi et al., 2021). Also, it is a new concept that requires rethinking the series of procedures that organizations follow in attracting talented individuals. The organizations are making great efforts in talent management, starting with identifying, attracting, developing and maintaining them, as the demand for talented individuals has increased (MAURYA ET AL., 2021).

The presence of talents in organizations contributes to the development of skill and technological knowledge in managing the management operations and implementing its duties and tasks to the fullest extent, where the information technology is present (LATUKHA ET AL., 2022). This in turn is reflected positively on the overall performance of the organization, which prompted the leading organizations to create a new job for talent management, which includes identifying, attracting and developing the administrative efficiency and succession planning (Al-Balshi, 2022).

Study variables

First: Talent management: It is a series of steps or a set of practices, functions and activities aimed at identifying, attracting, developing and talent retention. It is one of the human resource management processes, so it is strongly linked to the strategic objectives of private universities (Baradaran et al., 2022).

The researcher defines it procedurally: It is a set of procedures and practices that aim to manage talented individuals (competencies) in terms of identifying, attracting, training, developing and retaining them.

Talent management consists of a set of dimensions, which the researcher defines procedurally as follows:

1. Talent identifying: It is a process consisting of a set of tasks and activities aimed at identifying the talents required for a private university quantitatively and qualitatively. This can be achieved through identifying these talents on the basis of evaluating current and expected performance of the private universities, identifying the talent gap on the basis of which the deficit is filled, whether of internal or external talents, and identifying the appropriate, objective and modern criteria for measuring talents within the private university.
2. Talent attraction: Talent attraction is a process that consists of a series of actions aimed at attracting talents to a private university according to its needs. This includes the systems implemented by the private university to ensure the attracting and recruiting talented employees with high potentials.
3. Talent development: Talent development is a process that includes a set of methods to acquire talents, skills, capabilities and experience, which is a process of change for the university, its employees and its stakeholders. This can be obtained through using a planned and unplanned training, in order to achieve and maintain a competitive advantage for the university.
4. Talent retention: A process that includes a set of procedures, rewards, incentives, tools. It also provides opportunities for professional and personal growth that a private university uses to retain talented employees and empower them through career promotion or job enrichment.

Second: Technological competencies: It is the set of knowledge and technological skills that enable employees in private universities to use the technological environment of equipment, tools, applications and software related to work with high efficiency and skill that enable them to practice, use and activate them as needed at work (Al-Zayod and Al-Omari, 2022). The researcher defines it procedurally as: The set of skills, knowledge, capabilities and experience related to technological work that enable employees to perform their tasks through the use of the technological environment.

Third: Information Technology: The set of processes that are used in the production, storage, processing and distribution of information through electronic methods such as: the Internet, smart applications, and electronic computers. However, most research centers have agreed on three basic elements: electronics, computers, and communications (Debo and Al-Khatib, 2021). The researcher defines it procedurally as: A set of methods, procedures, processes, tools and systems that aim to preserve data and information electronically, store, organize, arrange and reuse it when needed.

Previous studies

The study of Tantawy et al. (2021) aimed to show the role of human talent management in the Egyptian public and private universities. Talent management refers to the process of developing and integrating new employees, retaining the existing ones, and attracting highly skilled workers to work in the organization. Talent management is concerned with continuing training and developing high performance to take on potential new roles, identifying knowledge gaps for employees, and implementing initiatives aimed at enhancing competencies among employees. Accordingly, there is a growing interest in talent management as one of the most important factors for organizational success. The study of Wahba et al. (2021) aimed to build a perception of the impact of talent management on the organizational performance: An applied study on the Natural Sciences and Technology Research Authority. The results of the study showed that there are statistically significant differences between the levels of talent management according to social status, as the percentage of married people is higher than that of unmarried people. There are also statistically significant differences between the levels of talent management according to the job level, as those at the level of (lower management) came at a higher rate than other levels. The results of the study showed that there are statistically significant differences between the levels of talent management according to the talent retention strategy. There are statistically significant differences between the levels of talent management according to the talent retention strategy. There are statistically significant differences between the levels of talent management according to the talent development strategy. There is an effect for each of the dimensions of talent management in achieving a competitive advantage in the organization. The study concluded that there is a positive correlation between management and its employees, as well as the absence of differences in the responses of the employees towards the reality of the organizational performance in the authority are attributed to the variables (gender, age, work experience, and years of experience). Moreover, Al-Balshi's study (2022) clarified the development of mechanisms to develop the requirements of the culture of small information technology projects

among university students in the context of the Fourth Industrial Revolution. The study concluded that the university should aim at teaching students to build and manage small information technology projects through the development of knowledge and awareness of it. It recommended that the university pay attention to educating students about the impact of the Fourth Industrial Revolution on small information technology projects.

McCain and Al-Filali, (2021) aimed at identifying the important role of the use of information and communication technology in conducting university work during the Corona pandemic. It also pointed out the important role. Through this technology various activities that take place at the university are evaluated, whether administrative, financial or educational. The study recommended the need to rely on the use of information and communication technology because of its major role in the conduct of university work, whether at times of the Corona pandemic or in the normal situation. The study of Al-Shura (2019) aimed to test the role of knowledge management in improving the technological skills of academics at Kafr El-Sheikh University: A field study. One of the most important results of the study was the need to conduct more training on how to use information bases and digital library on an ongoing basis. The study recommended encouraging the university on the electronic publication of research and studies in master's and doctoral degrees and promotion. Mahmoud et al., (2019) aimed at identifying the effectiveness of a training program based on some technological innovations and developing skills for using digital learning units. The study reached a set of results, the most important of which is the existence of a statistically significant difference between the mean scores of the research sample between the pre and post applications in favor of the post application.

The study of mining talents prioritization strategies from Australian university sector (2021) titled: What talent management process elements deliver the most value? reached a set of results most notably that among the three talent management plans, the talent attraction (TA) strategies built around the social aspects of the employee's life have the most power to attract top talents, rather than simply celebrate university excellence. This study concisely provides executives and researchers hours of reading time by selecting only the best and most relevant information and presenting it in a condensed, easy-to-understand format. Also, Sivathanu and Pillai's (2020) study aimed at conducting technology and talent analytics for talent management - a game-changer for organizational performance. The study reached a set of results, most important that the use of technology for talent management contributes to talent analytics and strategic human resource management. This study provides important insights for talent managers, HR technology marketers and technology developers. The study of Pillai and Sivathanu (2020) entitled: Adopting Artificial Intelligence (AI) for Talents Acquisition in IT / ITes Organizations found that cost-effectiveness, comparative advantage, support for senior management, readiness of human resources, competitive pressure and support of AI companies positively influence the adoption of AI technology for talent acquisition. There is another study by Lai et al. (2021) entitled: A structured approach to MPA to explore technological core competency, knowledge flow, and technology development through patent measurements for social networks. This study aimed to propose a methodology by integrating three approaches, namely technology internal core, external

knowledge flow, and industrial technology development to help companies improve the quality of decision-making for technology planning and enhance the efficiency of the R&D portfolio. This study presents a methodology based on the proposed integrated analysis method, which was constructed using patent indicators, central analysis of social networks, and master path analysis.

Eng et al.'s (2022) study aimed at presenting a visualization of the interaction between the transformational leadership, ingenuity, and the efficiency of wireless (IT) to enhance innovation capacity. The results show that transformational leaders strongly influence the development of ingenuity and foster radical innovation capability through wireless IT efficiency. Also, the results of this study indicate that supply chain integration through transformational leadership and wireless IT efficiency can reinforce simultaneous exploration and exploitation to enhance innovation. There is a study by Balogun et al. (2021) entitled: An investigation of digital technology competencies among ethnic construction students from black Asian minorities in the United Kingdom. This study aimed to investigate digital technology (DT) competencies, training and awareness among construction students from a black Asian minority (BAME) in the UK. The results indicate that BAME CUGS were often "very adept" at using baseline DT, such as what is required to complete a real-world assessment representing a real-life scenario. Furthermore, Naveed et al. (2022) introduced another study: Developing and verifying the basic technical competencies of the systems librarian. The results of the study indicated six basic technical areas that need to develop the competencies of systems librarians. They are basic computing, programming, web publishing, computer networks, cloud computing, database management systems and information systems. Another study conducted by Sulaiman et al. (2021) was titled: An integrated framework based on information and communication technology for smart facility management: An industrial perspective. The aim of the study is investigating of the effects and conceptualization of ICT application on the FM practice and further developing an integrated ICT-based framework for smart FM practices. To achieve the aim several promising ICTs for facility management were reviewed, including Building Information Modeling, Geographic Information Systems, unmanned aerial vehicles, and augmented reality. On this basis, a conceptual framework has been compiled, taking into account the benefits of each technology.

Study characteristics

By reviewing the previous Arabic and English studies, it became clear to the researcher that this study focused on the private university education sector, which is one of the most important sectors in Jordan. It is the true complement to public university education, which plays a key role in knowledge growth and intellectual and educational development and receives thousands of the university students at the local and regional level. This study dealt with promoting the development of technological competencies by clarifying the role of talent management through the mediating role of information technology, which is one of the important topics in light of the digital and cognitive development, especially in the recent epidemiological conditions. Moreover, the real role of technological competencies has emerged through information technology, which has largely addressed the process of the continuation of many organizations in their work in

light of the strict measures of the Corona pandemic. This study addressed the most important dimensions that talent management is based on in light of the urgent need for technological competencies and their development. Also, the study contributed to exploring the correlative and influencing relationships between the independent variables (talent management) and the dependent variable (technological competencies). This is achieved through the mediating variable (information technology) in order to reach new results of scientific value related to formulating a comprehensive framework for the dimensions of talent management influencing the development of technological competencies. This study developed its own model based on some relevant previous studies.

Methodology and study design

Study methodology

The quantitative approach (descriptive-analytical method) was used. The study model was developed, and the electronic questionnaire was prepared. The sample of the current study population consisted of private universities in Jordan (Jerash University, Philadelphia University, Irbid National University, Jadara University, Ajloun National University, Zarqa University), where the size of the population reached (540) items. This study was applied to a sample that included a group of (department manager, human resources manager, department head, administrative employee). The sample size represented according to Morgan's model was (225), by taking advantage of the size of the study population obtained by the researcher. The questionnaire was distributed electronically, which prompted the study sample members to answer all the questions that were formulated using the conditional questions system. This system does not allow the sample members to move to the following question before answering the current question, as shown in Table (3-1):

Table (3-1)

Number of distributed, retrieved and valid questionnaires in private universities

Private universities	No. of random sample members	No. of distributed of questionnaires	No. of retrieved of questionnaires	No. of valid of questionnaires	Percentage of resolutions valid for analysis
Total	225	225	215	202	89%

Data collection tools

The researcher relied on two sources to collect data to achieve the theoretical and practical objectives of the study:

1. Secondary data sources: Secondary data was obtained by reviewing the literature related to study variables from books, researches and articles published in refereed journals, periodicals, and dissertations published on the databases of Al-Ahliyya Amman University Library. Moreover, the information available on the scholar's website helped us in covering the theoretical framework, and clarifying the various aspects and main concepts of this study.

2. Primary data sources: The primary data was collected through a questionnaire that was designed and developed based on previous studies related to the topic of the research. We also depended on the opinions of a panel of referees in order to verify the validity of the paragraphs, their clarity, their relevance to the objectives of the current study, the linguistic integrity of their vocabulary, and their ability to measure the dimensions of the study variables. Their opinions, observations and points of view were taken into consideration to make the necessary modifications. The 5-Point Likert Scale (1, 2, 3, 4, 5) was also used, where the five scores represented the following answers, respectively: (strongly disagree, disagree, moderately agree, agree, strongly agree).

Validity of the study tool

The validity of the study was verified by reviewing the theoretical literature in previous studies, books, periodicals, articles published in refereed journals, scientific theses published on the university library databases, and information available on the scholar's website. This is used to determine the validity of the study tool (the questionnaire) ostensibly through the referee of its questions by university professors specialized in the fields of business administration, whose university ranks were distributed between (Associate Professor, Assistant Professor). In the light of their observations, some paragraphs of the questionnaire were reformulated.

Reliability of the study tool

To ensure the reliability of the study tool, the value of Cronbach's Alpha Coefficient was calculated to show the extent of the internal consistency of the study paragraphs and the quality of building the questionnaire paragraphs and the strength of its cohesion. Table (3-2) shows the reliability coefficient for the study scales. The alpha values ranged between (0.594) as the lowest value, and (0.929) as the highest value. This shows that all alpha values have exceeded the minimum acceptable percentage for the purposes of statistical analysis, except for the technological skill dimension, but the total value was high, as alpha is considered equal to or greater than (0.68) acceptable in the previous studies.

Table (3-2)
Values of Cronbach's reliability coefficient alpha for study scales

Variable	No. of paragraphs	Value of validity and reliability of Alpha Cronbach
Talent identifying	5	0.736
Talent attraction	5	0.929
Talents development	5	0.792
Talents retention	5	0.869
Independent variable: Talent management	20	0.915
Technology knowledge	4	0.899
Technology skill	4	0.594
Dependent variable: Technological	8	0.815

competencies		
The mediator variable: information technology	10	0.866
Total	38	0.952

It is clear from Table (3-2) that the values of Cronbach's alpha coefficient ranged between (0.594) as the lowest value and (0.929) as the highest value. The total value reached (0.952) with a total number of (38) paragraphs, which is a high value.

Analysis of the Results

Description of the characteristics of the study sample

Characteristics of the study sample by gender (gender variable): The researcher notes from Table (1-4) that males constitute the largest percentage of the study sample members (72.3%) compared to (27.7%) for females.

Table (4-1)
Distribution of study sample members according to gender variable

Variable	Category	Number	Percentage
Gender	Male	146	72.3
	Female	56	27.7
	Total	202	100%

Characteristics of the study sample according to the age variable: The researcher notes from Table (2-4) that age group from 30 to 40 years old constitute the largest proportion of the study sample members with a percentage of (58.4%), and the lowest percentage was for those over 50 years old, with a percentage of (2.0%).

Table (4-2)
Distribution of the study sample members according to the age variable

Variable	Category	Number	Percentage
Age	Less than 30	55	27.2
	From 30 to 40	118	58.4
	From 41 to 50	25	12.4
	Over 50	4	2.0
	Total	202	100%

Characteristics of the study sample according to the variable of university qualification: The researcher notes from Table (4-3) that those with a bachelor's degree make up the largest proportion of the study sample with a percentage of (45.5%), and the lowest percentage was for those with a doctorate degree at (3.5%).

Table (4-3)

Distribution of the study sample members according to the academic qualification variable

Variable	Category	Number	Percentage
Academic qualification	Technical education	35	17.3
	Bachelor	92	45.5
	Master	68	33.7
	PhD	7	3.5
	Total	202	100%

Characteristics of the study sample according to the variable number of years of experience: The researcher notes from Table (4-4) that those with years of experience from 11 to 14 years constitute the largest proportion of the study sample members with a percentage of (38.1%) and the lowest percentage was for those with 15 years of experience of 15 year and over with a percentage (12.9%).

Table (4-4)

Distribution of the study sample members according to the number of years of experience

Variable	Category	Number	Percentage
No. of years of experience	5 years or less	43	21.3
	From 6 to 10	56	27.7
	From 11 to 14	77	38.1
	15 and over	26	12.9
	Total	202	100%

Characteristics of the study sample according to the variable of the job title: The researcher notes from Table (4-5) that those whose job title is department head make up the largest proportion of the study sample members with a percentage of (32.2%), and the lowest percentage was of those whose job title was department manager with a rate of (14.9) %).

Table (4-5)

Distribution of the study sample members according to the job title variable

Variable	Category	Number	Percentage
Job Title	Department manager	30	14.9
	HR manager	43	21.3
	Department head	65	32.2
	Administrative officer	64	31.7
	Total	202	100%

Arithmetic means and standard deviation

Arithmetic means and standard deviation of the respondents' answers on the dimensions of talent management

Table (4-6)

Arithmetic means and standard deviations of the respondents' answers on the dimensions of talent management

Rank	Dimension	Arithmetic mean	Standard deviation	Relative importance
1	Talent identifying	3.74	0.787	High
2	Talent attraction	3.86	1.041	High
3	Talent development	3.79	0.732	High
4	Talent retention	3.95	0.763	High

Arithmetic means and standard deviation of the respondents' answers on the dimensions of technological competencies, as shown in Table (4-7)

Table (4-7)

Arithmetic means and standard deviations of the respondents' answers to the technological knowledge paragraphs

Rank	Paragraph	Arithmetic mean	Standard deviation	Relative importance
1	Technological knowledge	3.80	0.746	High
2	Technological skill	3.97	0.702	High

Arithmetic means and standard deviation of respondents' answers to information technology paragraphs

Table (8-8)

Arithmetic means and standard deviations of respondents' answers to information technology items

Rank	Paragraph	Arithmetic mean	Standard deviation	Relative importance
1	Information technology	4.07	0.759	High

Testing study hypotheses

Ho.1 The first main hypothesis: There is no statistically significant effect at the level of significance ($\alpha \leq 0.05$) for talent management represented by its dimensions (talent identifying, talent attraction, talent development, talent retention) on developing technological competencies represented by its dimensions

Table (4-10)
Results of Stepwise Multiple Regression to predict the level of technological competencies through talent management dimensions

Model no.	Model summary	Variance			
	R Correlation coefficient	R ² Correlation of determination	Degree of freedom	(F) value	Sig F statistical significant
1	0.706	0.498	1	198.697	0.000
2	0.749	0.560	2	126.886	0.000
3	0.759	0.576	3	89.748	0.000
4	0.765	0.765	4	69.422	0.000

Model number
 1. Talent identifying
 2. Talent identifying, talent attraction
 3. Talent identifying, talent attraction, talent development
 4. Talent identifying, talent attraction, talent development, talent retention

Looking at the results in Table (4-10), the dimensions of the independent variable “talent management” were as follows: Talent development ranked first and explained (49.8%) of the variance in the dependent variable “technological competencies”, while talent retention ranked second. This explained, with talent development, an amount of (56%) of the variance in the technological competencies. Talent identifying ranked third with talent development and talent retention, explaining an amount of (57.6%) of the variance in the technological competencies. Talent attraction ranked fourth with talent development, talent retention and talent identifying. This explained the amount of (58.5%) of the variation in technological competencies. Accordingly, the null hypothesis was rejected and the alternative hypothesis was accepted. This means that “there is a statistically significant effect at the level of significance ($\alpha \leq 0.05$) for manage talent management represented by its dimensions (talent identifying, talent attraction, talent development, talent retention) in developing technological competencies represented by its dimensions (technological knowledge and technological skill) in the Jordanian private universities. Table (4-11) shows the results of the coefficients analysis.

Table (4-11)
Results of multi-gradient linear regression coefficients to detect the effect of talent management in its dimensions on technological competencies

Model		Regression coefficients		
		(B) value	(T) value	Sig t statistical significance
1	Talent development	0.617	14.096	0.000
2	Talent development	0.397	6.788	0.000
	Talent retention	0.277	5.303	0.000
3	Talent development	0.379	6.546	0.000
	Talent retention	0.274	5.320	0.000

	Talent identifying	0.113	2.713	0.007
4	Talent development	0.254	3.030	0.003
	Talent retention	0.271	5.307	0.000
	Talent identifying	0.093	2.208	0.028
	Talent attraction	0.093	2.038	0.043

It is noted from Table (4-11) that the significance of all values of (B) at the calculated and different (T) levels in the four models ranged between (0.000 – 0.043) and all of them were less than (0.05) and they were significant at the level ($P < 0.05$). This confirms the significance of the coefficients. Based on the above, we cannot accept the first main null hypothesis and accept the alternative one, which states that there is a statistically significant effect at the level of significance ($\alpha \leq 0.05$) for the talent management represented by its dimensions (talent management represented by its dimensions (talent identifying, talent attraction, talent development, talent retention) on the technological competencies represented by its dimensions (technological knowledge, technological skill) in the Jordanian private universities.

Testing sub-hypotheses

Ho1.1 First sub-hypothesis: There is no statistically significant effect at the level of significance ($\alpha \leq 0.05$) for talent identifying on the development of technological competencies represented by its dimensions (technological knowledge, technological skill) in the Jordanian private universities.

To test this hypothesis, the Simple Regression test was used. Table (4-12) is illustrative.

Table (4-12)

Results of the simple linear regression test to detect the effect of talent identifying on the development of technological competencies represented in its dimensions

Dependent variable	Model summary ^b		Variance ^b				Regression coefficients ^a		
	RR	R	Coefficient of determin- Ation		Degree of freedom	(F) value	Sig F statistical significanc e	(B) value	(T) value
Independent variable	0.258 ^b	0.067	Regre- ssion	1	14.287	0.000 ^b	0.228	3.780	0.000
			Resid- ual	200					
			Total	201					

^a Independent variable (talent identifying)

^b Dependent variable is (technological competencies represented by its dimensions)

The results presented Table (4-12) showed that the value of the correlation coefficient (R) between the two variables (talent identifying and technological competencies represented by its dimensions) was (0.258), and the relationship between the two variables was direct. This elucidates that the dimension of talent

identifying positively affects the dependent variable "technological competencies". The value of the coefficient of determination (R^2) was (0.067), that is, (6.7%) of the change in talent management and technological competencies. The calculated value of (F) was (14.287) with a level of statistical significance (0.000) which is less than ($\alpha \leq 0.05$). This confirms the significance of the regression. Accordingly, the null hypothesis was rejected, and the alternative hypothesis was accepted. That is, there is a statistically significant effect at the level of significance ($\alpha \leq 0.05$) for talent identifying on the technological competencies represented by its dimensions (technological knowledge, technological skill) in the Jordanian private universities.

Ho1.2 Second sub-hypothesis: There is no statistically significant effect at the level of significance ($\alpha \leq 0.05$) for talent attraction on developing technological competencies represented by its dimensions (technological knowledge, technological skill) in the Jordanian private universities.

To test this hypothesis, the Simple Regression test was used, as shown in Table (4-13).

Table (4-13)

Results of the simple linear regression test to detect the effect of talent attraction on the development of technological competencies represented by its dimensions (technological knowledge, technological skill)

Dependent variable	Model summary ^b		Variance ^b				Regression coefficients ^a		
	RR R Correlation coefficient	R ² Coefficient of determin- ation	Degree of freedom		(F) value	Sig F statistical significance	(B) value	(T) value	Sig t statistical significance
Independent variable	0.662 ^b	0.439	Regre- ssion	1	156.272	0.000 ^b	0.364	12.50 1	0.000
			Resid- ual	200					
			Total	201					

^a Independent variable (talent attraction)

^b Dependent variable is (technological competencies)

Data in Table (4-13) demonstrates that the value of the correlation coefficient (R) between the two variables (talent attraction and technological competencies) was (0.662), and the relationship between the two variables was direct. This illustrates that the dimension of talent attraction positively affects the dependent variable "technological competencies". The value of the coefficient of determination (R^2) reached (0.439), i.e. (43.9%) of the change in talent management and technological competencies, while the calculated (F) value was (156.272) with a statistical significance level (0.000) which is less than ($\alpha \leq 0.05$). This confirms the significance of the regression. Consequently, the null hypothesis was rejected and the alternative hypothesis accepted, that is, there is a statistically significant effect at the level of significance ($\alpha \leq 0.05$) for talent attraction on the development of technological competencies represented by its dimensions (technological knowledge, technological skill) in the Jordanian private universities.

Ho1.3 Third sub-hypothesis: There is no statistically significant effect at the level of significance ($\alpha \leq 0.05$) for talents development on the development of technological competencies represented by its dimensions (technological knowledge, technological skill) in the Jordanian private universities.

To test this hypothesis, the Simple Regression test was used, and Table (4-14) illustrates this.

Table (4-14)
Results of the simple linear regression test to detect the effect of talent development on the development of technological competencies represented by its dimensions (technological knowledge, technological skill)

Dependent variable	Model summary ^b		Variance ^b				Regression coefficients ^a		
	RR Correlation coefficient	R ² Coefficient of determination	Degree of freedom		(F) value	Sig F statistical significance	(B) value	(T) value	Sig t statistical significance
Independent variable	0.706 ^b	0.498	Regr	1	198.697	0.000 ^b	0.617	14.096	0.000
			ssion	200					
			Total	201					

^a Independent variable (talent development)

^b Dependent variable is (technological competencies)

The results in table (4-14) demonstrate that the value of the correlation coefficient (R) between the two variables (talent development and technological competencies) was (0.706), and the relationship between the two variables was direct. This elucidates that the dimension of talents development positively affects the dependent variable "technological competencies". The value of the coefficient of determination (R²) was (0.498), which is (49.8%) of the change in talent management and technological competencies, while the calculated value of (F) was (198.697) with a level of statistical significance (0.000) which is less than ($\alpha \leq 0.05$). This affirms the significance of the regression.

Therefore, the null hypothesis was rejected, and the alternative hypothesis was accepted. That is, there is a statistically significant effect at the level of significance ($\alpha \leq 0.05$) for talent development on the development of technological competencies represented by its dimensions (technological knowledge, technological skill) in the Jordanian private universities.

Ho1.4 Fourth sub-hypothesis: There is no statistically significant effect at the level of significance ($\alpha \leq 0.05$) for talent retention on developing technological competencies represented by its dimensions (technological knowledge, technological skill) in the Jordanian private universities.

To test this hypothesis, the Simple Regression test was used, and Table (3-28) illustrates this.

Table (4-15)

Results of the simple linear regression test to detect the effect of talent retention on the development of technological competencies represented by its dimensions (technological knowledge, technological skill)

Dependent variable	Model summary ^b		Variance ^b				Regression coefficients ^a		
	RR Correlation coefficient	R ² Coefficient of determin- Ation	Degree of Freedom		(F) value	Sig F statistical significanc e	(B) value	(T) value	Sig t statistical significanc e
Independent variable	0.677 ^b	0.459	Regre- ssion	1	169.490	0.000 ^b	0.530	13.019	0.000
			Resid- ual	200					
			Total	201					

^a Independent variable (talent retention)

^b Dependent variable is (technological competencies)

The results in Table (4-15) illustrated that the value of the correlation coefficient (R) between the two variables (talent retention and technological competencies) was (0.677), and the relationship between the two variables was direct. This explains that the dimension of talent retention positively affects the dependent variable "technological competencies". The value of the coefficient of determination (R²) was (0.459), which is (45.9%) of the change in talent management and technological competencies, while the calculated value of (F) was (169.490), with a level of statistical significance (0.000) which is less than ($\alpha \leq 0.05$). This confirms the significance of the regression.

Based on the above-mentioned results, the null hypothesis was rejected and the alternative hypothesis was accepted. That is, there is a statistically significant effect at the level of significance ($\alpha \leq 0.05$) for the talent retention in the development of the technological competencies represented by its dimensions (technological knowledge, technological skill) in the Jordanian private universities.

Ho2. The second main hypothesis: There is no statistically significant effect at the level of significance ($\alpha \leq 0.05$) for talent management represented by its dimensions (talent identifying, talent attraction, talent development, talent retention) on the information technology in the Jordanian private universities.

The Simple Regression test was used to test this hypothesis, as shown in Table (4-16).

Table (4-16)
Results of the simple linear regression test to identify effect of talent management represented by its combined dimensions on information technology in the Jordanian private universities

Dependent variable	Model summary ^b		Variance ^b				Regression coefficients ^a		
	RR Correlation coefficient	R ² Coefficient of determin- Ation	Degree of freedom		(F) value	Sig F statistical significan ce	(B) value	(T) value	Sig t statistical significan ce
Independent variable	0.862 ^b	0.742	Regre- ssion	1	575.81 9	0.000 ^b	0.941	23.99 6	0.000
			Resid- ual	200					
			Total	201					

^a Independent variable (talent management represented by its dimensions)

^b Mediating variable (information technology)

The data in Table (4-17) illustrate that the value of the correlation coefficient (R) between the two variables (talent identifying and information technology represented by its dimensions) was (0.862), and the relationship between the two variables was direct. This explains that the dimension of talent identifying positively affects the mediating variable “information technology”. The value of the coefficient of determination (R²) was (0.742), which is (74.2%) of the change in talent management and information technology, while the calculated value of (F) was (575,819) with a level of statistical significance (0.000) which is less than ($\alpha \leq 0.05$). This confirms the significance of the regression. Based on the above, we cannot accept the second main null hypothesis and accept the alternative hypothesis, which states that there is a statistically significant effect at the level of significance ($\alpha \leq 0.05$) for the talent management represented by its combined dimensions (talent identifying, talent attraction, talent development, talent retention) in information technology in the Jordanian private universities.

Testing sub-hypotheses

Ho2.1 First sub-hypothesis: There is no statistically significant effect at the level of significance ($\alpha \leq 0.05$) for talent identifying on information technology in the Jordanian private universities.

In order to test this hypothesis, the Simple Regression test was used. Table (4-18) illustrates this.

Table (4-18)
Results of the simple linear regression test to detect the effect of talent identifying
on information technology

Dependent variable	Model summary ^b		Variance ^b				Regression coefficients ^a		
	RR Correlation coefficient	R ² Coefficient of determin- Ation	Degree of freedom		(F) value	Sig F statistical significance	(B) value	(T) value	Sig t statistical significance
Independent variable	0.814 ^b	0.663	Regre- ssion	1	392.89 2	0.000 ^b	0.812	19.82 2	0.000
			Resid- ual	200					
			Total	201					

^a Independent variable (talent identifying)

^b Mediating variable (information technology)

The results in Table (4-18) show that the value of the correlation coefficient (R) between the two variables (talents identifying and information technology) was (0.814), and the relationship between the two variables was direct. This explains that the dimension of talent identifying positively affects the mediating variable “information technology”. The value of the coefficient of determination (R²) was (0.663), which is (66.3%) of the change in the talent management and information technology, while the calculated (F) value was (392.892), with a level of statistical significance (0.000) which is less than ($\alpha \leq 0.05$). This confirms the significance of the regression.

As a result, the null hypothesis was rejected, and the alternative hypothesis was accepted, meaning that there is a statistically significant effect at the level of significance ($\alpha \leq 0.05$) for talent identifying in information technology in the Jordanian private universities.

Ho2.2 Second sub-hypothesis: There is no statistically significant effect at the level of significance ($\alpha \leq 0.05$) for talent attraction on the information technology in the Jordanian private universities

To test this hypothesis, the Simple Regression test (4-19) was used, as elucidated in Table (4-19).

Table (4-19)
Results of the simple linear regression test to detect the effect of talent attraction
on information technology

Dependent variable	Model summary ^b		Variance ^b			Regression coefficients ^a		
	RR Correlation Coefficient	R ² Coefficient of determination	Degree of Freedom	(F) value	Sig F statistical significance	(B) value	(T) value	Sig t statistical significance

Independent variable	0.943 ^b	0.890	Regression	1	1614.290	0.000 ^b	0.562	40.178	0.000
			Residual	200					
			Total	201					

^a Independent variable (talent attraction)

^b Mediating variable (information technology)

Inspecting Table (4-20) reveals that the value of the correlation coefficient (R) between the two variables (talent attracting and information technology) was (0.943), and the relationship between the two variables was direct. This illustrates that the dimension of talent attracting positively affects the mediating variable "information technology". The value of the coefficient of determination (R²) (0.890), that is, (89%) of the change in talent management and information technology, while the calculated (F) value was (1614, 290) with a level of statistical significance (0.000) which is less than ($\alpha \leq 0.05$). This confirms the significance of the regression.

Accordingly, the null hypothesis was rejected, and the alternative hypothesis was accepted, meaning that there is a statistically significant effect at the level of significance ($\alpha \leq 0.05$) for talent attraction in the information technology in the Jordanian private universities.

Ho2.3 Third sub-hypothesis: There is no statistically significant effect at the level of significance ($\alpha \leq 0.05$) for talent development on information technology in the Jordanian private universities.

To test this hypothesis, the Simple Regression test was used. This is shown in Table (4-21).

Table (4-21)
Results of the simple linear regression test to detect the effect of talent development on information technology

Dependent variable	Model summary ^b		Variance ^b			Regression coefficients ^a			
	RR R Correlation Coefficient	R ² Coefficient of determin- Ation	Degree of Freedom		(F) value	Sig F statistical significan ce	(B) value	(T) value	Sig t statistical significan ce
Independent variable	0.814 ^b	0.663	Regre- ssion	1	392.89 2	0.000 ^b	0.812	19.82 2	0.000
			Resid- ual	200					
			Total	201					

^a Independent variable (talent development)

^b Mediating variable (information technology)

It is clear from Table (4-21) that the value of the correlation coefficient (R) between the two variables (talent development and information technology) was (0.814),

and the relationship between the two variables was direct. This explains that the dimension of talent development positively affects the mediating variable “information technology.” The value of the coefficient of determination (R^2) was (0.663), which is (66.3%) of the change in talent management and information technology, while the calculated value of (F) was (392.892), with a level of statistical significance (0.000) which is less than ($\alpha \leq 0.05$). This confirms the significance of the regression.

Therefore, the null hypothesis was rejected, and the alternative hypothesis was accepted. This indicates that there is a statistically significant effect at the level of significance ($\alpha \leq 0.05$) for talent development in information technology in the Jordanian private universities.

Ho2.4 Fourth sub-hypothesis: There is no statistically significant effect at the level of significance ($\alpha \leq 0.05$) for talent retention on information technology in the Jordanian private universities.

To test this hypothesis, the Simple Regression test was used, and Table (4-22) illustrates this.

Table (4-22)
Results of the simple linear regression test to detect the effect of talent retention on information technology

Dependent variable	Model summary ^b		Variance ^b				Regression coefficients ^a		
	RR Correlation Coefficient	R ² Coefficient of determin- ation	Degree of Freedom		(F) value	Sig F statistical significan ce	(B) value	(T) value	Sig t statistical significan ce
Independent variable	0.612 ^b	0.375	Regre- ssion	1	119.82 9	0.000 ^b	0.546	10.94 7	0.000
			Resid- ual	200					
			Total	201					

^a Independent variable (talent retention)

^b Mediating variable (information technology)

The results in Table (4-23) showed that the value of the correlation coefficient (R) between the two variables (talent retention and information technology) was (0.612), and the relationship between the two variables was direct. This explains that the dimension of talent retention positively impacts the mediating variable “information technology”. The value of the coefficient of determination (R^2) was (0.375), which is (37.5%) of the change in the talent management and information technology, while the calculated value of (F) was (119.829), with a level of statistical significance (0.000) which is less than ($\alpha \leq 0.05$). This confirms the significance of the regression.

Based on these results, the null hypothesis was rejected, and the alternative hypothesis accepted. That is, there is a statistically significant effect at the level of

significance ($\alpha \leq 0.05$) for talent retention on information technology in the Jordanian private universities.

Ho.3 Third main hypothesis: There is no statistically significant effect at the level of significance ($\alpha \leq 0.05$) for the information technology on the development of technological competencies represented by its dimensions (technological knowledge, technological skill) in the Jordanian private universities.

To test this hypothesis, it was divided into two sub-hypotheses as follows:

Testing sub-hypotheses

Ho3.1 First sub-hypothesis: There is no statistically significant effect at the level of significance ($\alpha \leq 0.05$) for information technology on the technological knowledge in the Jordanian private universities

To test this hypothesis, the Simple Regression test was used, and Table (4-24) illustrates this.

Table (4-25)
Results of the simple linear regression test to detect the effect of information technology on technological knowledge in the Jordanian private universities

Dependent variable	Model summary ^b		Variance ^b				Regression coefficients ^a		
	RR Correlation Coefficient	R ² Coefficient of determin- ation	Degree of Freedom		(F) value	Sig F statistical significan ce	(B) value	(T) value	Sig t statistical significan ce
Independent variable	0.480 ^b	0.230	Regre- - ssion	1	59.894	0.000 ^b	0.567	7.739	0.000
			Resid- - ual	200					
			Total	201					

^a Mediating variable (information technology)

^b Dependent variable (technological knowledge)

Observing Table (4-25), the results clarified that the value of the correlation coefficient (R) between the two variables (information technology and technological knowledge) was (0.480), and the relationship between the two variables was direct. This explains that the mediating variable information technology positively affects the dimension of "technological knowledge" of the dependent variable. The value of the coefficient of determination (R²) was (0.230), which is (23%), while the calculated value of (F) reached (59.894) at a level of statistical significance (0.000) which is less than ($\alpha \leq 0.05$). This affirms the significance of the regression.

Accordingly, the null hypothesis was rejected and the alternative hypothesis was accepted, meaning that there is a statistically significant effect at the level of significance ($\alpha \leq 0.05$) for information technology on technological knowledge in the Jordanian private universities.

Ho3.2 Second sub-hypothesis: There is no statistically significant effect at the level of significance ($\alpha \leq 0.05$) for the information technology on the technological skill in the Jordanian private universities.

To test this hypothesis, the Simple Regression test was used, and Table (4-26) illustrates this.

Table (4-26)
Results of the simple linear regression test to detect the effect of information technology on technological skill in the Jordanian private universities

Dependent variable	Model summary ^b		Variance ^b				Regression coefficients ^a		
	RR Correlation Coefficient	R ² Coefficient of determin- Ation	Degree of Freedom		(F) value	Sig F statistical significan ce	(B) value	(T) value	Sig t statistical significan ce
Independent variable	0.571 ^b	0.327	Regre- ssion	1	96.956	0.000 ^b	0.501	9.847	0.000
			Resid- ual	200					
			Total	201					

^a Mediating variable (information technology)

^b Dependent variable (technological skill)

The results in Table (4-26) in showed that the value of the correlation coefficient (R) between the two variables (information technology, technological skill) was (0.571), and the relationship between the two variables was direct. This explains that the mediating variable information technology positively affects the "technological skill" dimension of the dependent variable. The value of the coefficient of determination (R²) was (0.327), that is, (32.7%), while the calculated (F) value was (96.959) at a level of statistical significance (0.000) which is less than ($\alpha \leq 0.05$). This asserts the significance of the regression.

Based on the above-mentioned results, the null hypothesis was rejected and the alternative hypothesis was accepted, meaning that there is a statistically significant effect at the level of significance ($\alpha \leq 0.05$) for information technology on the technological skill in the Jordanian private universities.

Ho.4 Fourth main hypothesis: There is no statistically significant effect at the level of significance ($\alpha \leq 0.05$) for talent management represented by its dimensions (talent identifying, talent attraction, talent development, talent retention) on developing technological competencies represented by its dimensions (technological knowledge, technological skill) with the presence of information technology in the Jordanian private universities.

To test this hypothesis, it was divided into four sub-hypotheses.

Testing sub-hypotheses

Ho4.1 First sub-hypothesis: There is no statistically significant effect at the level of significance ($\alpha \leq 0.05$) for talent identifying on the development of technological competencies represented by its dimensions (technological knowledge, technological skill) on the presence of information technology in the Jordanian private universities.

To test this hypothesis, the Simple Regression test was used, and Table (4-28) is illustrative.

Table (4-28)
Results of the simple linear regression test to detect the effect of talent identifying on developing technological competencies in the presence of information technology

Dependent variable	Model summary ^b		Variance ^b			
	RR	R Correlation Coefficient	R ² Coefficient of determination	Degree of Freedom		(F) value Sig F statistical significance
Independent variable	0.637 ^b	0.407	Regression	1	67.935	0.000 ^b
			Residual	200		
			Total	201		

^a Independent variable (talent identifying in the presence of information technology)

^b Dependent variable (technological competencies)

Looking at Table (4-28), it becomes clear that the value of the correlation coefficient (R) between the two variables (talent identifying and technological competencies in the presence of information technology) was (0.637), and the relationship between the two variables was direct. This explains that the dimension of talent identifying positively affects the dependent variable "technological competencies". The value of the coefficient of determination (R²) was (0.406), i.e. (40.6%) of the change in talent management and technological competencies in the presence of information technology, while the value of (F) calculated (67.935) with a level of statistical significance (0.000) which is less than ($\alpha \leq 0.05$). This confirms the significance of the regression.

Based on the above-mentioned results, the null hypothesis was rejected and the alternative hypothesis was accepted, that is, there is a statistically significant effect at the level of significance ($\alpha \leq 0.05$) for talent identifying on the development of technological competencies represented by its dimensions (technological knowledge, technological skill) in the presence of information technology in the Jordanian private universities.

Ho4.2 Second sub-hypothesis: There is no statistically significant effect at the level of significance ($\alpha \leq 0.05$) for talent attraction on developing technological

competencies represented by its dimensions (technological knowledge, technological skill) in the presence of information technology in the Jordanian private universities.

To test this hypothesis, the Simple Regression test was used, and Table (4-28) presents this.

Table (4-28)
Results of the simple linear regression test to detect the effect of talent attraction on developing technological competencies in the presence of information technology

Dependent variable	Model summary ^b		Variance ^b			
	RR Correlation Coefficient	R ² Coefficient of determination	Degree of Freedom		(F) value	Sig F statistical significance
Independent variable	0.664 ^b	0.441	Regression	1	78.422	0.000 ^b
			Residual	200		
			Total	201		

^a Independent variable (talent attraction)

^b Dependent variable (technological competencies)

The results in Table (4-28) showed that the value of the correlation coefficient (R) between the two variables (talent attraction and technological competencies in the presence of information technology) was (0.664), and the relationship between the two variables was direct. This explains that the dimension of talent attraction positively affects the dependent variable “technological competencies”. The value of the coefficient of determination (R²) was (0.441), which is (44.1%) of the change in the talent management and technological competencies in the presence of information technology, while the value of the calculated (F) reached (78, 422) with a level of statistical significance (0.000) which is less than ($\alpha \leq 0.05$). This confirms the significance of the regression.

Hence, the null hypothesis was rejected and the alternative hypothesis was accepted. This means that there is a statistically significant effect at the level of significance ($\alpha \leq 0.05$) for talent attraction on the development of technological competencies represented by its dimensions (technological knowledge, technological skill) in the presence of information technology in the Jordanian private universities.

Ho4.3 Third sub-hypothesis: There is no statistically significant effect at the level of significance ($\alpha \leq 0.05$) for talent development on developing technological competencies represented by its dimensions (technological knowledge and technological skill) in the presence of information technology in the Jordanian private universities.

To test this hypothesis, the Simple Regression test was used, as presented in Table (4-29).

Table (4-29)

Results of the simple linear regression test to detect the effect of talent development on developing technological competencies in the presence of information technology

Dependent variable	Model summary ^b		Variance ^b			
	RR Correlation Coefficient	R ² Coefficient of determination	Degree of Freedom		(F) value	Sig F statistical significance
Independent variable	0.708 ^b	0.502	Regression	1	100.27 4	0.000 ^b
			Residual	200		
			Total	201		

^a Independent variable (talent development in the presence of information technology)

^b Dependent variable (technological competencies)

A close inspection of Table (4-29) reveals that the value of the correlation coefficient (R) between the two variables (talent development and technological competencies in the presence of information technology) was (0.708), and the relationship between the two variables was direct. This illustrates that the dimension of talent development positively affects the dependent variable "technological competencies", and the value of the coefficient of determination (R²) was (0.502), i.e. (50.2%) of the change in the talent management and technological competencies in the presence of information technology. The value of calculated (F) was (100.274), with a statistical significance level (0.000) which is less than ($\alpha \leq 0.05$). This confirms the significance of the regression.

Thus, the null hypothesis was rejected and the alternative hypothesis was accepted, that is, there is a statistically significant effect at the level of significance ($\alpha \leq 0.05$) for talent development on the development of technological competencies represented by its dimensions (technological knowledge, technological skill) with the presence of information technology in the Jordanian private universities.

Ho4.4 Fourth sub-hypothesis: There is no statistically significant effect at the level of significance ($\alpha \leq 0.05$) for talent retention on the development of technological competencies represented by its dimensions (technological knowledge, technological skill) in the presence of information technology in the Jordanian private universities.

The Simple Regression test was used to test this hypothesis. Table (4-30) illustrates this.

Table (4-30)

Results of the simple linear regression test to detect the effect of talent retention on developing technological competencies in the presence of information technology

Dependent variable	Model summary ^b		Variance ^b			
	RR Correlation Coefficient	R Coefficient of determination	Degree of Freedom		(F) value	Sig F statistical significance
Independent variable	0.721 ^b	0.519	Regression	1	107.537	0.000 ^b
			Residual	200		
			Total	201		

^a Independent variable (talent retention in the presence of information technology)

^b Dependent variable (technological competencies)

Observing Table (4-40) showed that the value of the correlation coefficient (R) between the two variables (talent retention and technological competencies in the presence of information technology) was (0.721), and the relationship between the two variables was direct. This illustrates that the dimension of talent retention positively affects the dependent variable "technological competencies" in the presence of information technology. The value of the coefficient of determination (R²) was (0.519), that is, (51.9%) of the change in talent management and technological competencies, while the value of calculated (F) was (107.537) with a statistical significance level (0.000) which is less than ($\alpha \leq 0.05$). This confirms the significance of the regression.

As a result, the null hypothesis was rejected and the alternative hypothesis accepted. That is, there is a statistically significant effect at the level of significance ($\alpha \leq 0.05$) for talent retention in the development of technological competencies represented by its dimensions (technological knowledge, technological skill) with the presence of information technology in the Jordanian private universities.

Results

The study reached a set of recommendations, which are:

1. Private universities use specialists to predict their needs of talented people and attract them by all available means of advertising, identify them, find appropriate mechanisms for selecting talents, subject them to tests, and integrate them with the talents available to them.
2. Private universities focus on the presence of talented people at all administrative levels, giving them the opportunity for personal creativity, and providing the appropriate climate that contributes to developing their capabilities.
3. Private universities improve and provide technology to suit the talented people in the future, enrich them to occupy leadership positions in the

future, develop programs to preserve them, develop new plans and strategies that call for creativity, and retain talents by placing them in the right place.

4. The university has alternative plans in case the talents leave suddenly.
5. Private universities provide good technological capabilities for the employees that affect how to do business. The university encourages those employees to learn and acquire specialized technological skills.
6. The employees can employ ideas and apply them technologically in developing their work.
7. Workers have sufficient technological skill to do their work and to deal with sudden situations in an appropriate manner.
8. The university provides communication network services (communication, internal communication networks and external communication networks). It also provides data management services and supporting technology for operations (servers, high-level processing, performance monitoring).
9. The university undertakes an effective planning process for information technology operations and its continuous development.
10. The university seeks to keep pace with the latest innovations in the field of information technology. It provides a portfolio of applications (resource planning systems, active server pages, usable software units, and new technology).

Recommendations

The study recommended the following:

1. Make sure to use the appropriate advertising means in identifying talented people.
2. Work to improve the methods of selecting talented individuals.
3. Increased interest in analyzing the quality of talents possessed by a talented individual before his employment.
4. Work to reduce employee turnover.
5. Establishing material and moral incentives for talented individuals when presenting new ideas.
6. Work to improve managers' abilities to identify and choose alternatives in the planning process electronically.
7. Providing a clear vision about the contribution of information technology to achieving business value.

References

- Abdel Moez, Sarah Ahmed. (2020). "Technological skills in the way of working with groups," *The Scientific Journal of Social Work - Applied Studies and Research*, 11 (2), 157-171.
- Abdullahi, M.S., Raman, K. and Solarin, S.A. (2022), "Talent management practices on employee performance among academic staff of Malaysian private universities: employee engagement as a mediator", *Journal of Applied Research in Higher Education*, Vol. 14 No. 1, pp. 135-158.
- Absher, Mathani Hassan. (2020). "Technological skills of public relations employees in light of the shift towards a knowledge economy: A study on a

- sample of public relations practitioners in the United Arab Emirates", *The Arab Journal of Media and Child Culture*, (11), 115-83.
- Abu-Darwish, N.J., Al-Kasasbeh, M.M. and Al-Khasawneh, M.M. (2022), "The mediating role of cloud computing in the relationship between talent management and competitive advantages", *Competitiveness Review*, Vol. 32 No. 2, pp. 200-213.
- Al-Balshi, Muhammad Abd al-Salam Muhammad Mahmoud. (2022). Requirements for developing a culture of small information technology projects among university students in the context of the Fourth Industrial Revolution, *International Journal of Future Horizons*, 5(1), 253-313.
- Al-Harbi, Nada Moqbel Ayed. (2022). A proposed vision for developing talent management strategies in faculty development: a field study in the College of Education at King Khalid University, *The Educational Journal*, (94), 1474-1429.
- Al-Qershi, N.A., Thurasamy, R., Ali, G.A., Al-Rejal, H.A., Al-Ganad, A. and Frhan, E. (2022), "The effect of talent management and human capital on sustainable business performance: an empirical investigation in Malaysian hospitals", *International Journal of Ethics and Systems*, Vol. 38 No. 2, pp. 316-337.
- Al-Shoura, Amr Ibrahim Awad. (2019). "The Role of Knowledge Management in Improving the Technological Skills of Academics at Kafrelsheikh University: A Field Study", *Journal of Contemporary Business Studies*, (8), 438-478.
- Al-Zayoud, Abdul-Razzaq Muhammad and Al-Omari, Ghassan, Issa Ibrahim.(2022). "The Impact of Transformational and Authentic Leadership on Talent management for Telecom Companies in Jordan", *Amman Arab University Journal for Research - Management Research Series*, 7(1), 176-200 .
- Balogun, T.B., Awonuga, O.O. and Abowen-Dake, R. (2021), "Investigating digital technological competencies amongst black Asian minority ethnic construction students in the UK", *Journal of Engineering, Design and Technology*, Vol. ahead-of-print No. ahead-of-print.
- Baradaran, M.S., Yadollahi Farsi, J., Hejazi, S.R. and Akbari, M. (2022), "Competence at technology entrepreneurship: an interpretive view", *Journal of Economic and Administrative Sciences*, Vol. 38 No. 1, pp. 1-17.
- Debo, Ibtisam Tariq and Al-Khatib, Rabah Jameel. (2021). "The Impact of Information Technology on the Services Sector: Egypt as a Model for the Period 1990-2018", *Tikrit Journal of Administrative and Economic Sciences*, 17 (54), 237-249.
- Eng, T.-Y., Mohsen, K. and Wu, L.-C. (2022), "Wireless information technology competency and transformational leadership in supply chain management: implications for innovative capability", *Information Technology & People*, Vol. ahead-of-print No. ahead-of-print.
- Hamzawy, Suha. (2017). "The Role of Intellectual Capital in Developing Technological Knowledge: An Analytical Study", *Journal of Human Sciences*, (47), 536-521.
- Ibn Nasser, Zahra and Ali, Dubai. (2021). "The Role of Strategic Alliances in Transforming the Technological Competencies of Algerian Economic Institutions: A Case Study of Sonatrach", *Al-Bashaer Economic Journal*, 7(3), 368-350.
- Lai, K.-K., Chen, H.-C., Chang, Y.-H., Kumar, V. and Bhatt, P.C. (2021), "A structured MPA approach to explore technological core competence, knowledge

- flow, and technology development through social network patentometrics", *Journal of Knowledge Management*, Vol. 25 No. 2, pp. 402-432.
- Latukha, M., Michailova, S., Ott, D.L., Khasieva, D. and Kostyuk, D. (2022), "Gender, talent management and firm performance: MNCs' female-focused talent management practices in Russia", *Employee Relations*, Vol. 44 No. 4, pp. 850-869.
- Lenuwat, P. and Boon-itt, S. (2022), "Information technology management and service performance management capabilities: an empirical study of the service supply chain management process", *Journal of Advances in Management Research*, Vol. 19 No. 1, pp. 55-77.
- Luna-Arocas, R., Danvila-Del Valle, I. and Lara, F.J. (2020), "Talent management and organizational commitment: the partial mediating role of pay satisfaction", *Employee Relations*, Vol. 42 No. 4, pp. 863-881.
- Mahmoud, Abdel Razzaq Mokhtar and Mohamed, Mohamed Abdullah Ahmed and Ahmed, Mansour Abdel Fattah. (2019). "Technological innovations and the development of skills for using digital learning units", *Journal of Educational Sciences*, (38), 460-482.
- Masry-Herzalah, A. and Dor-Haim, P. (2022), "Teachers' technological competence and success in online teaching during the COVID-19 crisis: the moderating role of resistance to change", *International Journal of Educational Management*, Vol. 36 No. 1, pp. 1-13.
- Maurya, K.K., Agarwal, M. and Srivastava, D.K. (2021), "Perceived work-life balance and organizational talent management: mediating role of employer branding", *International Journal of Organization Theory & Behavior*, Vol. 24 No. 1, pp. 41-59.
- McCain, Nabil Shabain Abdo and Filali, Wafaa. (2021). "The role of using information and communication technology in the conduct of university work during the Corona pandemic", *Ibn Khaldoun Journal for Studies and Research*, 1 (3), 628-654.
- Mujtaba, M. and Mubarik, M.S. (2022), "Talent management and organizational sustainability: role of sustainable behaviour", *International Journal of Organizational Analysis*, Vol. 30 No. 2, pp. 389-407.
- Naveed, M.A., Siddique, N. and Mahmood, K. (2022), "Development and validation of core technology competencies for systems librarian", *Digital Library Perspectives*, Vol. 38 No. 2, pp. 189-204.
- Pillai, R. and Sivathanu, B. (2020), "Adoption of artificial intelligence (AI) for talents acquisition in IT/ITeS organizations", *Benchmarking: An International Journal*, Vol. 27 No. 9, pp. 2599-2629.
- Qaribi, Nasir al-Din and Khadawi, Mustafa Abdel-Qader. (2021). "The role of information technology in the development of e-learning": A reference to Algeria", 11(2), 897-916.
- Sivathanu, B. and Pillai, R. (2020), "Technology and talents analytics for talent management – a game changer for organizational performance", *International Journal of Organizational Analysis*, Vol. 28 No. 2, pp. 457-473.
- Sulaiman, M., Sulaiman, M., Liu, H., Binalhaj, M., Al-Kasasbeh, M. and Abudayyeh, O. (2021), "ICT-based integrated framework for smart facility management: an industry perspective", *Journal of Facilities Management*, Vol. 19 No. 5, pp. 652-680.
- Tantawi, Ahmed Mahmoud Ahmed and Awad, Engy Ahmed and Al-Hindawi, Mohamed Abdullah Mohamed. (2021). "The Role of Human Talent management

- in Egyptian Public and Private Universities", *Scientific Journal for Business and Environmental Studies*, 12(3), 472-494.
- Vardari, L., Bytyqi, Q. and Lumi, A. (2022), "The Impact of Information Technologies on Business During the COVID-19 Pandemic Outbreak", Grima, S., Özen, E. and Romănova, I. (Ed.) *Managing Risk and Decision Making in Times of Economic Distress, Part B (Contemporary Studies in Economic and Financial Analysis, Vol. 108B)*, Emerald Publishing Limited, Bingley, pp. 143-158.
- Vecchi, A., Della Piana, B., Feola, R. and Crudele, C. (2021), "Talent management processes and outcomes in a virtual organization", *Business Process Management Journal*, Vol. 27 No. 7, pp. 1937-1965.
- Wahba, Muhammad Al-Kilani, Ramzi Khairy and Al-Khouli, Sahar Abdel-Moneim Mahmoud. (2021). "The impact of talent management on organizational performance: an applied study on the Applied Science and Technology Research Authority", *The Scientific Journal of Business and Environmental Studies*, 12(1), 407-423.