

The Impact of Technology Transfer on Organizational Performance: The Moderating Role of Absorptive Capacity

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Abstract: This study aims to explore the impact of technology transfer on organizational performance. And aims to ascertain the impact of absorptive capacity as a mediating variable. The researcher used a descriptive analytical approach. Using a simple random sampling method to select a sample consists from several employees in top and middle administrators who work in Jordanian Communications companies (Zain, Orange and Umniah). The researcher designed a questionnaire. 250 questionnaires were distributed (online questionnaire) on the studied population, 216 questionnaires were received, and all were valid for analysis. With a response rate of (86.4%). Analyzing data via SPSS, the result indicated that technology transfer dimensions (Skills and experience and identification and development of technology) to gather have a significant impact on organizational performance dimensions to gather measured by the balanced scorecard (financial dimension, customer satisfaction, internal operations, and learning & growth). Also it was found that technology transfer has a significant impact on organizational performance mediated by the absorptive capacity. Based on the study's results, the researcher provided several suggestions.

Keywords: Technology Transfer, Organizational Performance, Absorptive Capacity, Jordanian Communication Companies

1. Introduction

The technological developments and modern technologies have been playing a significant role in developing organizational environments in various sectors. Today, there are numerous modern technologies which can be used in organization for obtaining knowledge. Thus, a modern term has emerged (Technology Transfer). Technology transfer contributes to facilitating the process of transferring information and knowledge between the employees in an organization. That shall contribute to improving organizational performance. All organization recognize the crucial role of technology transfer for all industry (communication, education, health,...) , technology transfer increased global competitiveness and help companies to manufacture new goods better and more quickly than before (Zamfir, 2020).

The integration of information technologies in the production and administrative processes is considered something vital for organizations. It shall contribute to improving the competitiveness of organizations in developing countries. It shall contribute to reducing the technology gaps that the latter organizations suffer from. It should be noted that technology transfer is something vital for achieving sustainable development in countries. Technology transfer plays a major role in enabling all the organizational levels to achieve growth and keep up with the technological development (Setiawan, 2019).

Organizations have been exerting effort to develop and transfer modern technologies. That is because organizations rely much on technologies to do tasks, carry out operations, perform well and comply with the relevant standards. (Sallan et al., 2024, Adeel et al., 2024).

Research Questions

In light of the research problem, the following questions will be addressed by this research:

1. What is the impact of technology transfers dimensions (Skills and experience, and identification and development of technology) on organizational performance of Jordanian Communications companies?



2. Does technology transfer affects organizational performance of Jordanian Communications companies mediated by absorptive capacity?

Objectives of the Research

The research paper aimed to:

- Identify the impact of technology transfer on organizational performance.
- Identify the mediating impact of the absorptive capacity on the relationship between technology transfer and organizational performance.
- Reach a conclusion and make suggestions in order to have a better understanding for the significance of technology transfer and its impact on organizational performance.

Research Model:

Based on the research problem, a hypothetical study model that illustrates the impact of independent variables on the dependent variable, with mediating impact of absorptive capacity can be explains in Figure (1):

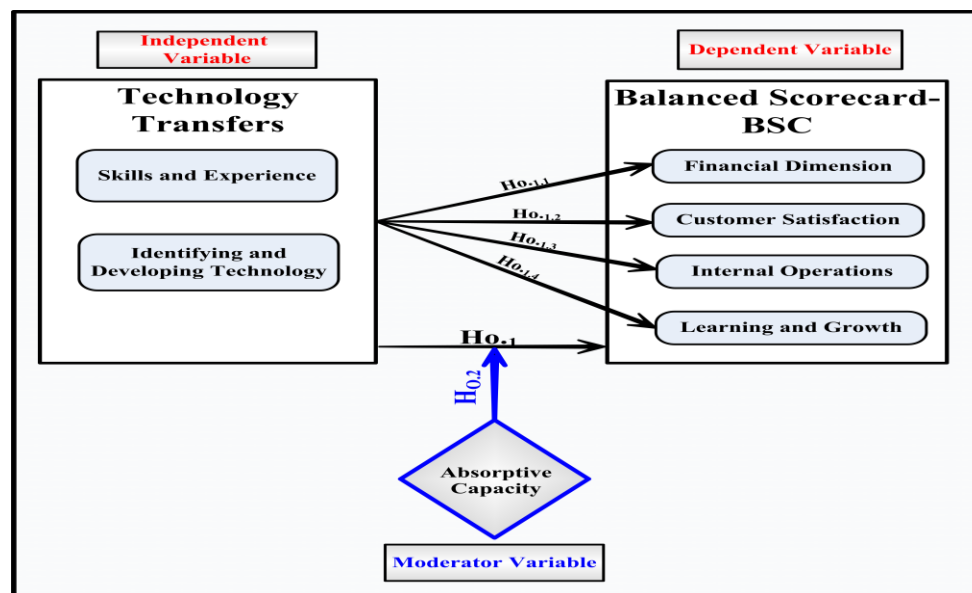


Figure (1): Study Model

The research model was developed based on the previous literature, (Xia et al., 2017; Rahma, 2015; De Wit et al., 2019), and with regard to the dependent variable and its dimensions the researcher adopted the study of (Al-Kawaz and Jafaji, 2019, and Farouq and Hussein, 2011).

Research hypotheses:

Based on the research problem and its objectives, the following hypotheses have been formulated:

The First main hypothesis:

H_{0.1}: there is no statistically significant impact at level ($\alpha \leq 0.05$) for the technology transfer (Skills and experience, Identifying and developing Technology) on the organizational performance.

This hypothesis is divided into the following- sub hypotheses:

H_{0.1.1}. there is no statistically significant impact at level ($\alpha \leq 0.05$) for the technology transfer (Skills and experience, Identifying and developing Technology) on the financial dimension.

H_{0.1.2}. there is no statistically significant impact at level ($\alpha \leq 0.05$) for the technology transfer (Skills and experience, Identifying and developing Technology) on the customer satisfaction.

H0.1.3. there is no statistically significant impact at level ($\alpha \leq 0.05$) for the technology transfer (Skills and experience, Identifying and developing Technology) on the internal operations.

H0.1.4. there is no statistically significant impact at level ($\alpha \leq 0.05$) for the technology transfer (Skills and experience, Identifying and developing Technology) on the growth and learning.

The Second main hypothesis:

Ho.2: There is no statistically significant impact at level ($\alpha \leq 0.05$) for the Technology Transfer on organizational performance for the Moderating Role of Absorptive Capacity

Research Methodology

The researcher employed a descriptive analytical approach for this study, which is appropriate well with its objectives.

To assess the impact of the independent variable (Technology Transfer) on the dependent variable (Organizational Performance), as well as the Moderating variable of absorptive capacity, a methodical data analysis approach was applied. Furthermore, a questionnaire was distributed to the target audience to address the research questions, evaluate the validity of the hypotheses.

Population and Sample:

The population of the study consisted all employees in the top and middle administrators who work in Jordanian Communications companies. There are three Jordanian Communications companies (Zain, Orange and Umniah) .The researcher distributed questioner to employees in the three Jordanian Communications companies according table (1).

Company	Job Position				
	Department Manager	Division Manager	Branch Manager	Department Head	Total
Zain	3	9	72	49	133
Orange	2	14	69	42	127
Umniah	2	11	55	39	107
Total	7	34	196	130	367

. There are **367** administrators in those companies according to the human research report. The researcher distributed online questionnaire using google forms to 250 individuals using simple random sample. 216 questionnaire forms were retrieved. All of them are valid for statistical analysis.

Data Sources

The researcher collected data from two sources

- **Secondary sources:** They involve books, articles, peer-reviewed journals, databases and electronic sources.

- **Primary source:** It's represented in the online questionnaire. The questionnaire was designed based on the relevant studies, using 5 set questionnaire Respondents were assured that the attained information will be used for the purpose of the study only and dealt with in complete confidentiality.

The researcher distributes a questionnaire to the target sample. Once the completed questionnaires were collected, the data were reviewed to ensure the accuracy and completeness of all entries. Subsequently, the data were entered into the SPSS (Statistical Package for the Social Sciences) software for analysis, which included calculating percentages, means, frequencies, regression, and standard deviations.

Instrument validity and Reliability

Internal consistency was assessed using Cronbach's alpha coefficient. A value greater than 0.70 indicates that the results are statistically acceptable, with values closer to 1 being preferable (Creswell and Creswell, 2022). The Cronbach's alpha values for each research variable are presented in Table 2 below.

Table (2): The Cronbach Alpha value for research variables

Variable	Cronbach coefficient	Number of items	Variable Type
Skills and experience	81.8%	5	Independent variable
Identifying and developing technology	83.4%	5	
Technology transfer	86.0%	10	
Financial dimension	80.3%	5	Dependent variable
Customer satisfaction	81.1%	5	
Internal operations	80.0%	5	
Learning and growth	81.0%	5	
BSC	88.2	20	
absorptive Capacity	83.1%	5	Moderate variable
Total index of study tool items	92.6%	35	

Based on table (2), the Cronbach alpha coefficient percentages are within the range of 80.0% - 88.2 we can approve that the tool is consistent.

2. Literature Review

Pultan et al. (2016) aimed to explore the factors that affect technology transfer. They aimed to explore the impact of such factors on quality management. They offers experiment-based data. They found that technology transfer shall contribute to raising the quality level and improving the total quality management. They found that technology transfer has a strong positive impact on performance quality.

The latter researchers aimed to explore the way in which the companies interact with the customers and improve their capacities in the field of technology and performance. They reached several results. For instance, they found that the absorptive capacity positively affect performance and enables the organization to develop new products and increase their profits. They found that that the absorptive capacity enables the organization to create strong relationships with customers. They recommend providing more attention to absorptive capacity, relationships with customers and capacity in the field of technology. Such attention shall positively affect organizational performance.

Jabbar and Mousa (2010) aimed to explore the impact of the resources and absorptive capacity of organizations and technology transfer on organizational performance. They found that technology transfer is greatly influenced by absorptive capacity. They found that technology transfer contributes to improving the organizational performance and promoting innovation. They recommend offering more opportunities to increase the effectiveness of administrative decisions, achieve strategic development and identify the available resources at industrial companies.

Farhngi et al. (2013) explore the impact of information technology on organizational structure and performance. They found that there information technology has direct and indirect impacts on organizational performance and system. They recommend using the relevant technological instrument to empower the employees in order to improve the organizational performance.

Bader (2023). As our reliance on technology grows, ensuring information security has become a critical necessity. The rapid advance of technology tools opens up incredible opportunities, but it also exposes users to evolving cyber threats and data risks. so, protecting information is not just about relying on advanced technology; it requires continuous learning and a proactive mindset to build a secure digital environment for everyone.

The study aimed to explore the impact of technology skills and absorptive capacity on the development of competencies in the field of technology. It aimed to explore the impact of those variables on organizational performance mediated by entrepreneurship. It was found that utilizing the potentials of the employees who have

technical expertise and developing the employees' competencies in the field of technology shall contribute to promoting a sense of entrepreneurship. It was found that the companies that utilize the technology-related knowledge have better potentials to form partnerships for increase the absorptive capacity.

Theoretical framework

Technology transfer is one of the essential components of competencies in the field of technology. It plays a major role in achieving industrial development during the 21st century (Appiah-Adu et al., 2016). It aims mainly at acquiring technologies in the aim of improving the competences of the employees at the organization and reducing the technology gap in the organizations that possess advanced technologies. It aims mainly at enabling organizations to develop new products with showing a higher performance efficiently level (Levin, 1993). Johnson et al. (1997) adds that technology transfer refers to the process of transferring technology from the source location (the one holding or owning the technology) to the location of the beneficiary (user). It is necessary to shed a light on the issues related to the use of technology by the end user. It is necessary to take into consideration the needs of the end user and the context in which the technology shall be used in. Addressing such issues shall affect the success of the technology transfer process. Salanță et al. (2018) defines the technology transfer process as the process through which knowledge is transferred from one organization to another organization that is capable of utilizing such knowledge for its favor or the for the favor of the local community. According to Mskus (2004), technology transfer isn't limited to the transmission of knowledge and information in the field of technology only. In fact, it also involves the ability of the end user to learn things about technology and understand the way of using of technology for carrying out production functions. According to Chenais (1986), technology transfer isn't limited to the transfer of the required technical knowledge for producing products. In fact, it also involves the transfer of knowledge for improving the capability to product products in an independent manner.

Description and analysis of the study variables

Skills and experience essential in technology transfer professionals face new challenges and opportunities, such as rapid technological changes, global competition, intellectual property rights, and ethical issues. So, they need to develop and enhance certain key skills and competencies. Such as: Communication skills, Technical skills, Business skills, Innovation skills, and Collaboration skills (Laudon and Laudon, 2014). The term skills and experience refers to the process of understanding the way to use technology by the organizations. (Lin, 2003).

Identification and development of technology: This term refers to the ability of the organization to determine the technologies it needs and ability to use them based on its performance and a set of standards (Okoro, 1992).

Absorptive capacity: It refers to a set of organizational procedures and operations which enable the organization to acquire and absorb knowledge and turn it into an organizational dynamic power (Zahra and George, 2002). Flatten et al. (2011). Figueiredo et al. (2026). defines the absorptive capacity as the ability of the organization to acquire and absorb valuable information and knowledge and implement them. Cohen and Levinthal (1990) defines the absorptive capacity as the ability the organization to search for external technologies and acquire and utilize them.

Financial dimension: It is one of the long-term goals of the organizations ((Kaplan and Norton, 1996). It is considered a conventional method for analyzing the organizational success of the organization. It provides financial indicators for the financial performance of the organization in order to enable the organization to meet its goals and improve the outcomes (Bose, 2007).

Customer satisfaction: The customer satisfaction measurements are determined based on the type of the targeted customers and the value that the organization gives to the customers (Niven, 2002). Managers determine the type of customers and markets to be targeted by the organization (Kaplan, & Norton, 1996).

Internal operations: They refer to all the internal activities and events that distinguish the organization from other organizations. Through such activities and events, the organization shall be capable to meet the needs of customers and goals of shareholders (Al-Ghalebi and Idrees, 2008).

Learning and growth: They are considered as the backbone of the aforementioned three variables. They are affected by the infrastructure of the organization. Organizations must have a good infrastructure to achieve long-term growth (Kaplan et al., 2004, p. 64). Learning and growth in organization are derived from three sources: individuals, regulations, and organizational procedures.

Research results

This part presents the results of testing the study's hypotheses. It aims to offer answers to the study's questions. It offers knowledge about the relationships between the study's variables.

Table (3) presents the distribution of data. The data in table (3) is provided to identify whether the data is normally distributed or not. The Skewness values are calculated. The Skewness values shown in table (3)

Table (3): Normal distribution of data

Variable s	Skills and experience	Technology identification and development	Technology transfer	Financial dimension	Customer satisfaction	Internal processes	Learning and growth	BSC	Absorptiv e capacity
Skewnes s	-0.139	0.019	-0.022	-0.131	0.077	-0.540	-0.434	-0.169	-0.510
Kurtosis	0.243	-0.951	-0.635	-0.410	-0.479	-0.190	-0.002	-0.287	0.640

Based on table (3), the data is normally distributed. That is because all the skewness values are based on the test data shown in Table (3), it is clear that the data distribution follows a normal distribution pattern, as the values of Skewness did not fall outside the range of ± 1 , and the Kurtosis value did not exceed ± 1.96 (Hair et al., 2018).

Multiple Linear Regression Test (Multicollinearity):

The Variance Inflation Factor (VIF), Tolerance, and Pearson correlation coefficient between the independent variables were extracted. After conducting the statistical analysis, it was found that the VIF value was 1.330, the Tolerance value was 0.752, and the Pearson correlation coefficient (r) was 0.498. These values are appropriate for conducting multiple linear regression analysis as they do not indicate a multicollinearity problem (Hair et al., 2018).

Table (4) the result of Autocorrelation Test for research hypothesis

Hypothesis	Ho.1	Ho1.1	Ho1.2	Ho1.3	Ho1.4	Ho.2
Calculated D-W Value	1.957	2.083	1.982	2.040	1.982	1.943
Result	There is no Autocorrelation problem					

Description and analysis of the study variables.

The description of the questionnaire items will primarily rely on the calculation of the mean and standard deviation for each item. To assess "the degree of critical success factors of social media," we have computed the standard deviation, mean, level for each dimension, and relative importance (Subedi, 2016). The results of these calculations are presented in Table (5).

Table (5)

Means and Standard Deviations for each dimension

Type of dimension	Variable	Mean	Standard deviation	Level
Independent	Skills and experience	4.01	0.542	High
	Identifying and developing Technology	4.07	0.554	High
	Technology transfer	4.04	0.474	High
Dependent	Financial dimension	3.93	0.573	High
	Customer satisfaction	3.96	0.533	High
	Internal processes	4.04	0.613	High
	Learning and growth	4.00	0.601	High
	BSC	3.98	0.430	High

Moderate	Absorptive Capacity	3.94	0.596	High
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Table (5) shows that the independent variable (technology transfer) achieved an arithmetic mean of (4.04) with a relative weight of (80.8%) and a high degree of relative importance, with a standard deviation of (0.542). It is evident that the dimension of skills and experience ranked second with an arithmetic mean of (4.01) and a standard deviation of (0.542). The dimension of technology identification and development ranked first with an arithmetic mean of (4.07) and a standard deviation of (0.554). From this, we can conclude that the level of relative importance of technology transfer in Jordanian telecommunications companies is considered high from the perspective of the study participants.

Table (5) also shows that the dependent variable (institutional performance BSC) achieved an arithmetic mean of (3.98) with a relative weight of (79.6%) and a high degree of importance from the perspective of the study sample, with a standard deviation of (0.430). The financial dimension ranked fourth with an arithmetic mean of (3.93) and a standard deviation of (0.573), while the customer satisfaction dimension ranked third with an arithmetic mean of (3.96) and a standard deviation of (0.533). The internal processes dimension ranked first with an arithmetic mean of (4.04) and a standard deviation of (0.613), and the learning and growth dimension ranked second among the institutional performance dimensions with an arithmetic mean of (4.00) and a standard deviation of (0.601). Based on this, we conclude that the level of relative importance of institutional performance according to the Balanced Scorecard (BSC) is high in Jordanian telecommunications companies.

Additionally, the adjusted variable (capacity) achieved an arithmetic mean of (3.94) with a relative weight of (78.8%) and a high degree of importance from the perspective of the study participants, with a standard deviation of (0.596).

Testing of hypotheses

In this section, we present the results of hypothesis testing. The first main hypothesis and the sub hypotheses were subjected to multiple linear regression analysis, while the second main hypothesis was subjected to hierarchical regression analysis. The following results were obtained:

3. Results of Testing the first main Hypothesis

Table(6) Result for first main hypothesis

T.Sig	T	Beta	Std. Error	B	Technology Transfer	dependent variable	F. sig	F	DF	Adj R ²	R ²	R
0.000	8.095		0.182	1.437	Constant	BSC	1.000	98.821	2	0.476	0.481	0.694
0.000	5.086	0.289	0.045	0.230	Skills and Experience				213			
0.000	8.832	0.503	0.044	0.390	identification and development of technology				215			

The table (6) shows that the correlation coefficient R = (69.4%), which indicates the existence of a relationship between technology transfer and organizational performance (BSC). The coefficient of determination, R² = 0.481, indicates that the two dimensions of technology transfer explain 48.1% of the variance in organizational performance. It also shows a statistically significant effect of technology transfer on organizational performance (BSC), as evidenced by the F.Sig value of 0.000, which is less than 0.05. It is observed that the two dimensions of technology transfer have contributed to the impact on organizational performance (BSC) in Jordanian telecommunications companies, as indicated by the T.Sig value, which is also less than 0.05. The Beta value shows that the dimension of "technology identification and development" had the highest impact, followed by the dimension of "skills and experience." Therefore, we accept the alternative hypothesis stating: "There is a statistically significant effect at the significance level ($\alpha \leq 0.05$) of technology transfer (skills and experience, and technology identification and development) on organizational performance (BSC) in Jordanian

The Results of testing the First Sub-Hypothesis

Table (7) the result of First Sub Hypothesis

T.Sig	T	Beta	Std. Error	B	Technology Transfer	dependent variable	F. sig	F	DF	Adj R ²	R ²	R
0.000	4.822		0.280	1.349	Constant	financial dimension	0.000	47.706	2	0.303	0.309	0.556
0.043	2.032	0.133	0.069	0.141	Skills and Experience				213			
0.000	7.274	0.478	0.068	0.494	identification and development of technology				215			

Table (7) shows that the correlation coefficient $R = (55.6\%)$, indicating a relationship between technology transfer and organizational performance as measured by the financial dimension. The coefficient of determination, $R^2 = 0.309$, indicates that the two dimensions of technology transfer explain 30.9% of the variance in organizational performance as measured by the financial dimension. It also shows a statistically significant effect of technology transfer on organizational performance as measured by the financial dimension, as indicated by the F.Sig value of 0.000, which is less than 0.05. It is observed that the two dimensions of technology transfer have contributed to the impact on organizational performance as measured by the financial dimension in Jordanian telecommunications companies, as indicated by the T.Sig value, which is also less than 0.05. The Beta value shows that the dimension of "technology identification and development" had the highest impact, followed by the dimension of "skills and experience." Therefore, we accept the alternative hypothesis stating: "There is a statistically significant effect at the significance level ($\alpha \leq 0.05$) of technology transfer (skills and experience, and technology identification and development) on organizational performance as measured by the financial dimension in Jordanian telecommunications companies."

Results of testing the Second Sub-Hypothesis

Table (8) Result of testing the second sub hypothesis

T.Sig	T	Beta	Std. Error	B	Technology Transfer	dependent variable	F. sig	F	DF	Adj R ²	R ²	R
0.000	6.882		0.278	1.915	Constant	customer satisfaction	0.000	28.544	2	0.204	0.211	0.460
0.014	2.465	0.173	0.069	0.170	Skills and Experience				213			
0.000	4.966	0.348	0.068	0.336	identification and development of technology				215			

Table (8) shows that the correlation coefficient $R = (46\%)$, indicating a relationship between technology transfer and organizational performance as measured by the customer satisfaction dimension. The coefficient of determination, $R^2 = 0.211$, indicates that the two dimensions of technology transfer explain 21.1% of the variance in organizational performance as measured by the customer satisfaction dimension. It also shows a statistically significant effect of technology transfer on organizational performance as measured by the customer satisfaction dimension, as indicated by the F.Sig value of 0.000, which is less than 0.05. It is observed that the two dimensions of technology transfer have contributed to the impact on organizational performance as measured by the customer satisfaction dimension in Jordanian telecommunications companies, as indicated by the T.Sig value, which is also less than 0.05. The Beta value shows that the dimension of "technology identification and development" had the highest impact, followed by the dimension of "skills and experience." Therefore, we accept the alternative hypothesis stating: "There is a statistically significant effect at the significance level ($\alpha \leq 0.05$) of technology transfer (skills and experience, and technology identification and development) on organizational performance as measured by the customer satisfaction dimension in Jordanian telecommunications companies."

Results of testing the Third Sub-Hypothesis

Table (9) Results of testing the Third Sub-Hypothesis

T.Sig	T	Beta	Std. Error	B	Technology Transfer	dependent variable	F. sig	F	DF	Adj R ²	R ²	R
0.000	4.663		0.313	1.459	Constant	Internal operations	0.000	34.347	2	0.237	0.244	0.494
0.000	4.222	0.290	0.078	0.328	Skills and Experience				213			
0.000	4.082	0.280	0.076	0.310	identification and development of technology				215			

Table (9) shows that the correlation coefficient $R = (49.4\%)$, indicating a relationship between technology transfer and organizational performance as measured by the internal processes dimension. The coefficient of determination, $R^2 = 0.244$, indicates that the two dimensions of technology transfer explain 24.4% of the variance in organizational performance as measured by the internal processes dimension. It also shows a statistically significant effect of technology transfer on organizational performance as measured by the internal processes dimension, as indicated by the F.Sig value of 0.000, which is less than 0.05. It is observed that the two dimensions of technology transfer have contributed to the impact on organizational performance as measured by the internal processes dimension in Jordanian telecommunications companies, as indicated by the T.Sig value, which is also less than 0.05. The Beta value shows that the dimension of "skills and experience" had the highest impact, followed by the dimension of "technology identification and development." Therefore, we accept the alternative hypothesis stating: "There is a statistically significant effect at the significance level ($\alpha \leq 0.05$) of technology transfer (skills and experience, and technology identification and development) on organizational performance as measured by the internal operation dimension in Jordanian telecommunications companies."

Results of testing the Forth Sub-Hypothesis

Table (10) Results of the Fourth Sub-Hypothesis:

T.Sig	T	Beta	Std. Error	B	Technology Transfer	dependent variable	F. sig	F	DF	Adj R ²	R ²	R
0.000	3.992		0.293	1.168	Constant	Learning and growth	0.000	48.257	2	0.305	0.312	0.558
0.000	3.847	0.252	0.073	0.279	Skills and Experience				213			
0.000	5.923	0.388	0.071	0.420	identification and development of technology				215			

Table (10) shows that the correlation coefficient $R = (55.8\%)$, indicating a relationship between technology transfer and organizational performance as measured by the learning and growth dimension. The coefficient of determination, $R^2 = 0.312$, indicates that the two dimensions of technology transfer explain 31.2% of the variance in organizational performance as measured by the learning and growth dimension. It also shows a statistically significant effect of technology transfer on organizational performance as measured by the learning and growth dimension, as indicated by the F.Sig value of 0.000, which is less than 0.05. It is observed that the two dimensions of technology transfer have contributed to the impact on organizational performance as measured by the learning and growth dimension in Jordanian telecommunications companies, as indicated by the T.Sig value, which is also less than 0.05. The Beta value shows that the dimension of "technology identification and development" had the highest impact, followed by the dimension of "skills and experience." Therefore, we accept the alternative hypothesis stating: "There is a statistically significant effect at the significance level ($\alpha \leq 0.05$) of technology transfer (skills and experience, and technology identification and development) on organizational performance as measured by the learning and growth dimension in Jordanian telecommunications companies."

Results of testing the Second Main Hypothesis

H₀₂: There is no statistically significant effect of the factors influencing Technology transfer at ($\alpha \leq 0.05$) on organizational performance for the modified role of absorptive capacity. This hypothesis was tested using the Hierarchical Regression test and its results from us are shown in table (11).

Table (11) Result for Second Main hypothesis

Independent Variable	Variables	Sample 1		Sample 2		Sample 3	
		T	Sig.	T	Sig.	T	Sig.
BSC	Technology transfer	13.797	0.000	10.922	0.000	3.977	0.000
	Absorptive capacity			4.508	0.000	2.836	0.005
	bilateral interaction					2.311	0.022
	R	0.686		0.719		0.727	
	ΔR			0.033		0.041	
	R ²	0.471		0.517		0.529	
	ΔR^2			0.046		0.058	
	Calculated (F) value	190.360		113.931		79.282	
	(F) (Sig)	0.000		0.000		0.000	

Table (11): Results of testing the impact of technology transfer on regulatory performance with absorptive capacity as a modified variable.

The table (11) indicates that in the first model, the impact of technology transfer on the dependent variable (BSC) was studied. It was found that technology transfer has a significant effect on institutional performance, as shown by the F value of (190.36), which is significant at the ($\alpha \leq 0.05$) level. This result is supported by the T value of (13.797), which is also significant at the ($\alpha \leq 0.05$) significance level. The first model shows that technology transfer explained 47.1% of the variance in (BSC) based on the (R²) value.

In the second model, the variable of absorptive capacity was introduced and added to study its effect on (BSC). It was found that absorptive capacity has a significant effect on (BSC), as evidenced by the F value of (113.931), which is significant at the ($\alpha \leq 0.05$) level. This result is supported by the T value of (4.508), which is also significant at the ($\alpha \leq 0.05$) level. The second model shows that the introduction of absorptive capacity led to a slight increase in the (R²) value, which was (3.3%), when comparing the first model to the second model.

In the third model, the second-order interaction term between technology transfer and absorptive capacity was introduced. It was found that this second-order interaction term had a significant effect on the dependent variable (BSC), as indicated by the F value of (79.282) and the T value of (2.311), both of which are significant at the ($\alpha \leq 0.05$) level. The coefficient of determination (R²) also showed a slight increase of (5.8%) when comparing the first model to the third model.

Therefore, it can be concluded that the variable of absorptive capacity modified the effect of technology transfer on institutional performance (BSC). This supports the acceptance of the second main hypothesis, as a statistically significant effect of technology transfer on institutional performance was found at the ($\alpha \leq 0.05$) level, with absorptive capacity acting as a moderating role in Jordanian telecommunications companies

Results related to testing the study's hypothesis

1. Technology transfer significantly influences organizational performance in Jordanian communications companies. The independent variables, including skills and experience, as well as the identification and development of technology, have a notable impact on organizational performance in these companies. This finding aligns with the results of Widjaja et al. (2020), who identified a positive relationship between technology and organizational performance. Similarly, Bolatan et al. (2016) found that technology transfer enhances organizational performance, particularly in terms of improving performance quality.

2. Technology transfer significantly affects organizational performance in Jordanian communications companies, with the financial dimension serving as a mediator.
3. Technology transfer significantly influences organizational performance in Jordanian communications companies, with customer satisfaction acting as a mediating factor.
4. Technology transfer significantly impacts organizational performance in Jordanian communications companies, with internal operations mediating the relationship.
5. Technology transfer significantly affects organizational performance in Jordanian communications companies, with learning and growth serving as a mediating factor.

Those results are consistent with the ones reached by Farhngi et al. (2013). The latter researchers found that technology has direct and indirect impacts on the organizational performance and system. Those results are consistent with the ones reached by Yaseen (2012). The latter researcher found that technology transfer contributes to creating close economic system. Those results are consistent with the ones reached by Rahmeh (2015). The latter researcher found that technology transfer is affected by several factors. He found that technology transfer contributes to achieving ongoing development and showing creativity.

6) The absorptive capacity affects the relationship that is between technology transfer and organizational performance in the Jordanian Communications companies. Thus, the second hypothesis is accepted. That means that technology transfer has a statistically significant impact -at the statistical significance of ($\alpha \leq 0.05$) on organizational performance in Jordanian Communications companies mediated by absorptive capacity. The latter result is in agreement with the one reached by Jabar and Soosay (2010). The latter researchers found that technology transfer is highly affected by the absorptive capacity in companies. They found that technology transfer contributes to improving performance and promoting innovation. The latter result is in agreement with the one reached by Tzokas et al. (2015). The latter researchers found that absorptive capacity has several positive impacts, such as: developing new products, raising the organizational performance and profits when acquiring modern technologies. García-Morales et al. (2014), Al-madadha and Bader, (2021), found that the organizations must have the ability to acquire and comprehend knowledge and products outputs that can be advertised. They add that organization must develop their absorptive capacity in order to acquire modern technologies. They found that the organizations that benefit from the technology-based knowledge shall be more capable to show cooperation and develop in order to increase their absorptive capacity.

Recommendations

In light of the result of the study, the study made a series of recommendations, here are the most important:

-Providing more attention to the implementation of modern technologies in the Jordanian Communications companies.

-Providing more attention to the development of human capital in an ongoing manner. That should be done through providing human capital with training courses about the use of modern technologies.

-Attracting and retaining specialists who are capable of using modern technologies effectively. The researcher recommend eliminating all the obstacles that may hinder those specialists while working.

-Creating more Jordanian Communications companies. The researcher recommend holding conferences about technology transfer.

-Holding meetings by employees at Jordanian Communications companies with employees at other Communications companies in other countries in order to exchange knowledge in the field of technology. The researcher recommend creating partnerships by Jordanian Communications companies with companies in the private and public sectors to facilitate the process of having technology transferred to them.

-Providing more attention to the technological infrastructure in order to facilitate the process of technology transfer.

-Using strategies and methods that contribute to improving performance by Jordanian Communications companies.

-Utilizing the absorptive capacity of the competencies in the field of technology to transform them into a productive power.

4. Conclusion

This study holds significant importance for several reasons. It provides valuable insights for decision-makers, offering results that can help Jordanian communications companies acquire the latest technologies to enhance their performance and achieve a competitive edge.

The researcher discovered that all the variables in the study were deemed highly important, which explains why the respondents considered these variables as crucial factors.

The following points summarize the findings derived from testing the study's hypotheses and model. The study's model highlights the relationship between technology transfer and organizational performance.

1) The influential factors have a direct impact on skills and experience. Therefore, organizational management must continuously conduct studies and research to acquire the latest technologies, which will contribute to enhancing organizational performance. Organizations should focus on identifying the technologies to be integrated into their internal environments. Additionally, they must develop training programs and plans to localize these new technologies and ensure proper understanding of how to use them.

2) The influential factors have a direct impact on the identification and development of technology. This can be attributed to the fact that Jordanian communications companies possess the knowledge and skills necessary to identify technologies that align with their needs. Additionally, these companies employ highly qualified staff capable of transferring and acquiring knowledge in the field of technology. Such employees are also adept at effectively utilizing technologies for production purposes. This outcome may be further explained by the fact that these companies provide training to employees on how to use the transferred technologies.

3) The influential factors also have a direct impact on the financial dimension. This can be attributed to the fact that Jordanian communications companies are committed to optimizing the use of available financial resources and capabilities. They focus on reducing costs while maintaining the same level of quality. Furthermore, these companies aim to improve their financial performance.

4) The factors influencing customer satisfaction have a direct impact on it, which explains why Jordanian telecommunications companies are focused on delivering the highest quality products and services. These companies are also striving to expand into new markets and regions.

5) The factors that influence customer satisfaction have a direct effect on it. This outcome can be attributed to the fact that Jordanian telecommunications companies prioritize offering high-quality services and products. These companies are also focused on entering new markets.

6) The influential factors have a direct impact on internal operations. This result can be explained by the ongoing efforts of Jordanian telecommunications companies to improve their products in order to meet the needs of their customers. It can also be attributed to their aim to streamline workplace procedures and stay up-to-date with the latest technologies. Additionally, it reflects the clarity of job descriptions and employee responsibilities within these companies. 7) The influential factors have a direct impact on learning and growth. The latter result may be attributed to the fact that the Jordanian Communications companies seek improving their search, and development processes in order to keep up with the latest developments that are made to the workplace environment. It may be attributed to the fact that the Jordanian Communications companies seek creating a culture that is based on learning and exchanging knowledge.

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