

The impact of Technology Orientation on Organizational Performance: An applied study on The Tourism Companies and Hotel Operators in Egypt

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Abstract

This study aims to identify the impact of technology orientation and relevant items on the overall organizational performance, such as (correct and timely data and information, ERP; Enterprise Resource Planning system, computer aided design tools and control systems and automation of tools), by application to The Tourism Companies and Hotel Operators in Egypt.

Keywords: The Tourism Companies – Hotel Operations - Technology Orientation - Organizational Performance.

Introduction:

Tourism and hotels organizations manage to improve their performance by developing and implementing the strategies of their businesses by utilizing the market opportunities while investing the available resources and capabilities to capitalize them (Hilman and Kaliappen,2014) A firm's strategy influences its structure, activities, investment, relation to the market, and business performance. Strategy can be utilized as a problem solving tool that at the same time creates new capabilities and improves performance (Theodosiou et al .2012).

Theoretical Framework

Technology/ Technology orientation

Technology orientation is defined as a firm's tendency to introduce or use new technologies, products, or innovations (Litvin et al.,2004). It suggests that customer value and the long-term success of the organization depends on the technological solutions, products, services or processes (Chen et al,2015). Consequently, the technology oriented organization aspires to acquiring the latest technologies to be applied to develop new products, services or supporting applications. Hence, technology orientation contributes to the improvement of both the product and business performance (Zhou et al,2005) .

Technology Orientation in Organization:

The strategic management of technology can be considered as one of the most crucial issues in literature (Molinero,2012) because "a company can use technology to create a competitive advantage by attracting new customers, or changing the rules of competition in the industry (Sheridan, 2002). The technological choices of a firm determine its technological strategy in terms of the accumulation and deployment of its technological resources and capabilities. In addition, creating, developing and applying technology are crucial for the success of Travel agencies. Whereas the focus of technology in low technology organizations is primarily to utilize and expand technology innovation, technology in high technology tourism is one of the critical factors for determining the future success of Travel agencies (Zhou et al,2015). The selection of technology focuses not merely on the choice of specific technologies but also on the potential for technology integration. The extent to which the technology is adapted or altered so as to suit the needs of the organization also determines the level of operating efficiency attained by the organization. In fact, The Tourism Companies using very similar technologies might differ in the level of efficiency depending on the technology strategy followed after the initial adoption of technology (Dehning and Richardson,2002).

Technology and Tourism industry

Organizations today manage to integrate more new technologies to gain the competitive advantage over others in terms of productivity and services. Technology sustains the remarkable changes in processes like marketing, production and human development. It also helps making the accurate decision, time and money saving etc. and the same is based these days on scientific basis and analysis, it plays a major role in conducting financial analysis and control (Kenneth et al,2012). The tourism processes changed significantly with the introduction of technology. In the past, all the tourism operations were carried out by manpower, but now computers and technology integrated with every industry and turning to automation has become a competitive advantage. Automation enables The Tourism Companies to mass produce products at outstanding speeds and with great repeatability and quality. Automation has become a determining factor in whether or not a company will compete within the tourism industry(Kenneth et al,2012). In addition, it reduces the waste in the used materials, saves workweeks for labor. Moreover, automated systems typically perform the tourism process with less variability than human workers who claim that high-quality is the outcome of their good workmanship, as automation results in greater control and consistency of product quality. Also, increased process control makes more efficient use of materials. Although automation is constantly setting the standards for the industry and has many advantages, there are also some negative aspects about automation (Evans and Simkin,2009).

Technology and Hotel operations

Many researchers stated that the accommodation industry has been one of the fastest growing industries using websites to communicate with their consumers. Positive and negative feelings after the experience of hospitality services and purchasing creates an inner tension in the form of communication with others (Deraniyagala,2001).

In addition, many researchers revealed that companies could communicate with their customers to get feedback from them (Chen et al,2015).In today's competitive world, the web pages and social media offer an effective, unconventional method for managers in hospitality industry to communicate and engage with their guests and customers, the basis for building strong customer relationships. The reason of this can be attributed to the fact that booking directly from the hotel websites creates price advantages to consumers compared to other distribution channels (Rastogi,2013). There is a prevalent adoption of social media in the hotel industry. As hotels operate in a competitive and dynamic environment, it is important for hotels to utilize online customer review information effectively in order to better understand their customers, improve hotel performance and compete with other hotels. A large percentage of customers rely on the online user-generated reviews to make online purchase decisions for hotels, higher than any other product category. Furthermore, hotel managers could act upon online customer reviews to change their marketing strategies and improve their services (Molinillo et al,2016).

Organizational Performance:

The concept of organizational performance is very common in the academic literature, however, it has no precise definition and researcher did not agree upon one universally accepted definition of it. In the '50s organizational performance was defined as the extent to which organizations, viewed as a social system fulfilled their objectives (Tian et al,2016). Performance evaluation during this time was focused on work, people and organizational structure, later organizations managed to evaluate their performance through their ability to exploit the surrounding environment for accessing and using the limited resources (Inversini and Masiero, 2014). Then, by the end of the last century, it is realized that the identification of organizational objectives is more complex than initially considered due to the rapid progress in technology, automation and surrounding environment as a whole. Managers managed to understand that an organization is successful if it fulfilled more objectives (effectiveness) with lesser resources (efficiency). Thus, organizational theories that followed supported the idea of an organization that achieves its performance objectives based on the constraints imposed by the limited resources (Godkin et al,2002). In this context, profit became one of the many indicators of performance.

Problem Statement

Therefore the aim of this study is to reach a construct of technology orientation: Acquiring new technologies (i.e. IT and Operational technology), that possess technology orientation strategy and technology capability, accordingly to study the impact on The Tourism Companies and Hotel Operators in Egypt and their performance.

The problem addressed in the study, is the need for a better understanding of the role that technology orientation plays in determining organization performance; Recent years have seen the growth of the importance of customer reviews on shaping competition and customers purchase patterns in the tourism and hospitality industry.

The study focuses on a central question: What is the impact of technology orientation dimensions (IT and Operational Technology) on the Egyptian Tourism Companies and hotel properties and their performance?

An IT system can be defined as an engine that accepts data flows as an input to deliver a new data flow but does not interfere with the physical world; examples of relevant IT systems include ERP (Enterprise Resource Planning) systems or CRM (Customer Relationship Management) applications, in addition to the IT infrastructure capabilities, OT (Operational Technology) is: the set of devices and processes that act in real time on physical operational systems.

Research objective

The objective of the study is to:

- Measure the impact of technology orientation on organizational performance in The Tourism Companies and hotels operations Egypt.

Hypothesis

- **Ho1:** There is no significant impact of IT Network Infrastructure on organizational performance of The Tourism Companies and hotels operations in Egypt.
- **Ho2:** There is no significant impact of IT Applications on organizational performance of The Tourism Companies and hotels operations in Egypt.
- **Ho3:** There is no significant impact of OT (Operational Technology) Applications on the organizational performance of The Tourism Companies and hotels operations in Egypt.

7.0 Methodology

The study used the descriptive analytical approach to reflect the phenomenon under investigation quantitatively and qualitatively. It describes and analyses the phenomenon. In addition, it reveals the relationships between its various dimensions to interpret and access general conclusions that may contribute to, improve and develop the reality. In order to determine the impact of Technology Orientation and Corresponding items on the Organizational Performance - An applied study on The Tourism Companies and hotels operations in Egypt, the study used two major sources of information that can be classified as follows:- **The secondary sources:** the study used books, relevant references, periodicals, reports, articles, previous researches and studies that dealt with the subject of the study. In addition to various internet sites.

Primary sources: The a questionnaire as a tool of research that is prepared specifically for this reason.

Limitations

This study is limited to:

- The Tourism Companies in the Cairo, Egypt.
- Hotels operations (five stars hotels) in Cairo, Egypt.
- The collection of data is mainly based on questionnaires - which are carried out in February and mar 2018

The Study Population and Sample:

The Study Sample:

It consisted of those having intermediate or higher qualification, read and write English fluently, use technology in performing his or her work in The Tourism Companies and hotels under investigation. It consisted of (500) employees in The Tourism Companies and hotels in Egypt. Some (413) forms were returned and thereby the return of forms ratio is 82.6%, which proves the interest of respondents and their seriousness in the field of research. Some (41) forms were excluded as they were unfit for analysis. Thus, the number of forms to be analyzed is (372) forms.

Study Tool:

The questionnaire was divided into (4) fields and (28) statements as follows: **First** field: discusses that the IT Network Infrastructure and it consists of (8) statements. **Second** field: discusses the IT Applications) and it consists of (8) statements. **Third** field: discusses the Operational Technology Applications and it consists of (6) statements. **Fourth** field: discusses the organizational performance and it consists of (6) statements.

Statistical Methodology used in the research:

The data were processed statistically using the Statistical Package for Social Sciences (SPSS).

Validity and Reliability of the study tool:

The Structural validity:

Table (1): Correlation coefficient and significance level for each field with the total score of the questionnaire statements

Filed	Content of the Field	correlation coefficient	level of significance
First	IT Network Infrastructure	.865**	.000
Second	IT Applications	.835**	.000
Third	Operational Technology Applications	.826**	.000
Fourth	Organizational Performance	.745**	.000

*The correlation is statistically significant for the level of significance ($\alpha = 0.05$)

**The correlation is statistically significant for the level of significance ($\alpha = 0.01$)

Table (1) shows that the correlation coefficients ranged between (0.745) and (0.865) at a level of significance of ($\alpha = 0.01$).

Reliability of the study tool:

Conducted Reliability steps on the survey sample by applying cronbach's alpha coefficient as follows:

Cronbach's alpha coefficient method:

Table (2): Reliability coefficients for the studied dimensions using Cronbach's alpha coefficient method.

Filed	Content of the Field	Number of statements	Cronbach alpha coefficient
First	IT Network Infrastructure	8	0.806
Second	IT Applications	8	0.857
Third	Operational Technology Applications	6	0.875
Fourth	Organizational Performance	6	0.863
	Total	28	.931

Table (2) shows that reliability coefficients are high (Between (0.867) and (0.967)).

Results:

Analyzing the statements of the IT Network Infrastructure field:

Table (3): Analyzing the statements of the first field (IT Network Infrastructure)

Statements	mean	standard deviation	Relative weight	Arrange
IT provides the organization employees with the latest technology in computers	3.48	1.04	69.68	7
The organization computer Networks are always available and reliable	3.74	.92	74.84	4
The voice communication with all company' sites are always available and reliable	3.69	.99	73.87	5
The E-Mail Service is always available and reliable	4.10	.84	82.10	1
The internet connection is always available and reliable with high performance	3.48	1.06	69.68	8
The level of information Security is high	3.87	1.08	77.42	2
The data storage capacity is sufficient	3.86	1.01	77.26	3
The company considers that IT implementation is an investment; not an expense	3.63	1.02	72.74	6
All Statements	3.73	.76	74.70	

Table (3) shows the responses of the sample to the extent of the first field (IT Network Infrastructure);

The described impact is significant as: Correlation between IT Infrastructure and The Tourism Companies and hotels organizational performance was high.

Analyzing the statements of the IT Applications field:

Table (4): Analyzing the statements of the second field (IT Applications)

Statements	mean	standard deviation	Relative weight	Arrange
The company is up to date in adopting IT Applications	3.55	1.08	71.13	7
IT Applications of the company facilitate user friendly interface and well integrated	3.75	.81	75.00	4
IT Applications of the company provide users with the complete information that is needed	3.66	.84	73.39	5
The information provided by the IT Applications of the company is accurate and reliable	3.79	.84	75.81	1
Employees have sufficient understanding of IT Applications	3.32	.93	66.45	8
IT Applications of the company are aligned with company processes and objectives	3.61	.87	72.26	6
IT Applications of the company have increased the performance of employees	3.77	.89	75.48	3
IT Applications of the company have enhanced the business functions and processes	3.79	.84	75.81	2
All Statements	3.65	.70	73.17	

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Table (4) shows the responses of the sample to the extent of the second field (IT Applications); The described impact is significant as: Correlation between IT application systems and The Tourism Companies and hotels organizational performance was high.

Analyzing the statements of the Operational Technology Applications field:

Table (5): Analyzing the statements of the third field (Operational Technology Applications)

Statements	mean	standard deviation	Relative weight	Arrange
Company's policy is to adopt up-to-date technologies	3.82	.94	76.45	2
Company purchases and uses technologies to position itself ahead of competitors	3.85	.97	77.10	1
Company is often to be first to try new methods of technologies	3.60	1.04	72.10	6
Company frequently improves internal processes such as speed, reliability, automation and digitalization	3.78	1.01	75.65	3
Company allocates resources for investments in latest technologies and future forecasted technological changes (e.g. Robotics and industrial IT)	3.61	.99	72.26	5
Up-to-date technologies are linked to- exploring and utilizing opportunities for: a new or developed product, process or service.	3.66	.97	73.39	4
All Statements	3.72	.85	74.49	

Table (5) shows the responses of the sample to the extent of the third field (Operational Technology Applications); The described impact is significant as: Correlation between Operational technology implemented in The Tourism Companies and hotels organizational performance was high.

Analyzing the statements of the Organizational Performance field:

Table (6): Analyzing the statements of the fourth field (Organizational Performance)

Statements	mean	standard deviation	Relative weight	Arrange
Technology orientation has improved the internal control in the company, and stakeholders performance	3.76	.81	75.32	6
Technology orientation has contributed to company's quality of products, services and programs	3.82	.80	76.45	4
Technology orientation has enhanced organization's reputation in the industrial field, customer satisfaction and contributed to market value added	4.06	.77	81.29	1
Technology orientation has improved operational performance (productivity: accomplished projects/ products/ services)	3.92	.80	78.55	3
Technology orientation has contributed to company's financial performance (profitability: net profit, income growth) in the past three years.	3.81	.92	76.29	5
Technology orientation has improved company's overall performance in the past three years	3.99	.80	79.84	2
All Statements	3.89	.62	77.96	

Table (6) shows the responses of the sample on the extent of fourth field (Organizational Performance); The described impact is significant as: The technology (Information technology and Operational technology) is an important elements for organizations to enhance their performance. And it improves the flow of the work and positively – the employees' performance.

Hypotheses tests and Findings:

hypothesis (H01): "There is no significant impact of IT Network Infrastructure on the organizational performance of The Tourism Companies and hotels in Egypt".

To test the impact of IT Network Infrastructure on the organizational performance of The Tourism Companies and hotels in Egypt, simple linear regression analysis is used:

Table (7) ANOVA^a Test to test the proposed simple linear regression model for the IT Network Infrastructure and organizational performance

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	39.67	1	39.67	136.63	.000 ^p
Residual	107.44	370	.29		
Total	147.11	371			

a. Dependent Variable: Organizational Performance

b. Predictors: (Constant), IT Network Infrastructure

Findings: Table (7) shows that: the proposed multi linear regression model has a strong statistical significance, as (F) value is (136.63) that is statistically significant at $\alpha=0.001$. It confirms the very high exploratory

power of the model of simple linear regression statistically. In addition, there is a statistical significant relationship between the independent variable (IT Network Infrastructure) and the dependent variable (Organizational Performance).

Therefore for (**Hypothesis H01**), we reject the hypothesis stipulating that:

H01: "There is no significant impact of IT Network Infrastructure on the organizational performance of The Tourism Companies and hotels in Egypt".

And accept the hypothesis stipulating that:

H11: "There is a significant impact of IT Network Infrastructure on organizational performance .

hypothesis (H02): "There is no significant impact of IT Applications on the Organizational Performance .

To test the impact of IT Applications on the Organizational Performance simple linear regression analysis is used:

Table (8) ANOVA^a Test to test the proposed simple linear regression model for the IT Applications and organizational performance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	60.77	1	60.77	260.46	.000 ^b
	Residual	86.33	370	.233		
	Total	147.11	371			

a. Dependent Variable: Organizational Performance

b. Predictors: (Constant), IT Applications

Findings: Table (8) shows that: the proposed Simple linear regression model has a strong statistical significance, as (F) value is (260.46) that is statistically significant at $\alpha=0.001$. It confirms the very high exploratory power of the model of simple linear regression statistically. In addition, there is a statistical significant relationship between the independent variable (IT Network Infrastructure) and the dependent variable (Organizational Performance).

Therefore for (**Hypothesis H02**), we reject the hypothesis stipulating that:

H02: "There is no significant impact of IT Applications on the organizational performance of The Tourism Companies and hotels in Egypt ".

And accept the hypothesis stipulating that:

H12: "There is a significant impact of IT Applications on the organizational performance .

The hypothesis (H03): "There is no significant impact of Operational Technology Applications on the Organizational Performance of The Tourism Companies and hotels in Egypt".

To test the impact of Operational Technology Applications on the Organizational Performance simple linear regression analysis is used:

Table (9) ANOVA^a Test to test the proposed simple linear regression model for the Operational Technology Applications and organizational performance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	74.52	1	74.52	379.81	.000 ^b
	Residual	72.59	370	.196		
	Total	147.11	371			

a. Dependent Variable: Organizational Performance

b. Predictors: (Constant), Operational Technology Applications

Findings: Table (9) shows that: the proposed multi linear regression model has a strong statistical significance, as (F) value is (379.81) that is statistically significant at $\alpha=0.001$. It confirms the very high exploratory power of the model of simple linear regression statistically. In addition, there is a statistical significant relationship between the independent variable (Operational Technology Applications) and the dependent variable (Organizational Performance).

Therefore for (**Hypothesis H03**), we reject the hypothesis stipulating that:

H03: "There is no significant impact of Operational Technology Applications on the organizational performance .

And accept the hypothesis stipulating that:

H13: "There is a significant impact of Operational Technology Applications on organizational performance.

Findings:

- Technology (Information technology and Operational technology) is an important elements for organizations to enhance their performance. And it improves the flow of the work and positively – the employees' performance.
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- A significant impact of technology (Information technology and Operational technology) on overall organizational performance in The Tourism Companies and hotels in Egypt; has been described and proved .
- The Tourism Companies and hotels in Egypt have either the develop incremental technologies or adopt advanced technologies through licensing or through joint ventures with foreign Tourism Companies that entered the local market with their new and/ or advanced technologies; to suit the local market demands.

Conclusion

- Technology (Information technology and Operational technology) Leads to the development of internal control which supports the innovative competencies to improve the work flow.
- Technology oriented are acquiring new technologies and applying the latest innovations to develop new products and services or support existing applications.
- Technology oriented improves operational performance to increase productivity, accomplishes products and customer services with market added value and thus leads to customer satisfaction and high reputation.
- Adoption of technologies is a key for The Tourism Companies and hotels to improve performance, and services that allow, reach new customers and increase market share .
- The Tourism Companies and Hotels are able to display greater ability to innovate, respond more successfully to environment changes and to develop skills that enable gaining competitive advantage via improved performance.

Recommendations

- 1) Top management should pay more attention to technological changes.
- 2) The perception of top management towards "Information and operational technology should be changed from just a cost into investment on medium and long term,
- 3) All the stakeholders in the organization should be involved in the planning stage to avoid "resistance to change", it is a genuine role of the top management to show the visible advantages of the technology orientation and its related items.

تأثير التوجه التكنولوجي في الأداء المؤسسي (دراسة تطبيقية على شركات السياحة والفنادق في مصر)

هاني أحمد على خطاب - سالي فتحي السيد

في ظل البيئة الحالية التي تشهد تغيرات سريعة ومتلاحقة في جميع المجالات، يجب أن تضع أي صناعة في اعتبارها المتطلبات المختلفة لعملائها حتى تتمكن من مواكبة هذه التغيرات. سواء أكانت في شكل تزايد المنافسة أو التغير في دوافع واتجاهات العملاء أو التطور التكنولوجي المستمر. هدفت هذه الدراسة إلى تحديد تأثير التوجه التكنولوجي وما يتعلق به في الأداء التنظيمي ككل، مثل (البيانات والمعلومات الصحيحة في الوقت المناسب، (ERP) نظام تخطيط موارد المؤسسات، وأدوات التصميم بمساعدة الحاسب الآلي وأنظمة التحكم والتشغيل الآلي للأدوات المميكنة). وذلك بالتطبيق على شركات السياحة والفنادق في مصر ومن أهم النتائج التي توصلت إليها الدراسة: أن هناك تأثيراً ذو دلالة إحصائية للبنية التحتية لتكنولوجيا المعلومات في أداء شركات السياحة والفنادق، مما يتطلب أن تولي الإدارة العليا - في هذه المؤسسات المزيد من الاهتمام بالتغيرات التكنولوجية.

References

- Chen, Y., Yang, S., and Wang, Z. (2015). Service cooperation and marketing strategies of infomediary and online retailer with eWOM effect. *Information Technology and Management*, 1-10.
- Dehning, T. L. and Richardson, J.D. (2002) Strategic Management and planning. *Management journal*, 15,23-26.
- Deraniyagala, S.(2001).Adaptive Technology Strategies and Technical Efficiency: Evidence from the Sri Lankan Agricultural Machinery Industry. *Journal of International Development*, 13, 59-71.
- Evans, G. E. and M. G. Simkin (2009). "What best predicts computer proficiency?" *Communications in the ACM Vol.32(No.11): 1322-1328*.
- Godkin Lynn Sean valentine,GordonMosely,and Lawrence Silver (2002). " Marketing Orientation and Organizational Learning in Mexican Small Business:The Role of Consulting Support ", *International Journal Of Management* . March 2002, Vol.19.
- Inversini, A., and Masiero, L. (2014). Selling rooms online: the use of social media and online travel agents. *International Journal of Contemporary Hospitality Management*,26(2), 272-292.
- Kenneth C, Laudon, and JaneP.Laudon (2012). "Management Information System", 8 th Ed. Prentice, New Jersey.
- Litvin, S.W., Blose, J.E. and Laird, S.T. (2004). Tourist use of restaurant web-pages: Is the internet a critical marketing tool? *Journal of Vacation Marketing*, 11(2), 155-161.
- Molinillo, S., Ximénez-de-Sandoval, J. L., Fernández-Morales, A. and Coca-Stefaniak, A. (2016). "Hotel Assessment through Social Media.
- (1) Molinero, C. (2012). What is technology? Retrieved on 10/10/2017 from <http://prezi.com/hktxqvq10z-v/what-is-technology/>.
- Rastogi, P. N. (2013). "Knowledge management and intellectual capital – the new virtuous reality of competitiveness." *Human Systems Management* 19(1):39-49.
- Sheridan, T. (2002). *Humans and Automation*; Wiley: New York, NY, USA.
- Tian, X., He, W., Tao. R. and Akula, V. (2016). "Mining Online Hotel Reviews: Case study in China". *Americas Conference on Information Systems*, San Diego
- Zhou, K. Z., Yim, C. K. B. and Tse, D. K. (2015) The Effects of Strategic Orientations on Technology and Market-Based Breakthrough Innovations. *Journal of Marketing*, 69, 42-60.