

E-learning's influence on organizational excellence in UAE universities: Exploring the moderating role of demographic variables

Hisham O. Mbaidin^{a,b*}

^aBusiness intelligence and data analytics department, Business School, Mutah University, Jordan

^bEconomic and Management Department, Economic and Management College, Alqasimia University, Sharjah, United Arab Emirates

CHRONICLE

Article history:

Received: July 2, 2023

Received in revised format: July 26, 2023

Accepted: August 29, 2023

Available online: August 29, 2023

Keywords:

E-learning

Organizational Excellence

UAE universities

Innovation

ABSTRACT

This study employs a quantitative approach to investigate the relationship between E-learning and Organizational Excellence in UAE universities. The study focuses on 250 senior and middle administrators from public universities selected through a convenience sampling method. The advanced statistical tools SPSS and AMOS were used to analyze the research data through Structural Equation Modeling (SEM). The findings reveal the impact of e-learning dimensions—Technical Knowledge and Management Willingness—on Organizational Excellence. Additionally, the study delves into moderation effects, revealing that Gender, Age, Educational Level, and Experience play pivotal roles in influencing perceptions of e-learning among senior and middle administrators at UAE public universities. This research contributes to the understanding of how e-learning impacts Organizational Excellence within the UAE university landscape while also highlighting the crucial moderating roles of demographic variables. These findings offer valuable insights for educational institutions aiming to optimize e-learning strategies and enhance organizational performance.

© 2024 by the authors; licensee Growing Science, Canada.

1. Introduction

Globally, technology has gained recognition as a primary catalyst for enhancing and revamping educational methods in universities (Ho et al., 2020). This emphasis on technology by governments is evident in significant initiatives and substantial financial allocations aimed at constructing and upgrading information and communication technology (ICT) infrastructure within academic institutions (Sharma et al., 2011). Among the diverse technologies that influence education, the Internet has emerged as the tool that has most effectively enabled the evolution of teaching and learning in recent times (Moubayed et al., 2018). Through interconnected technologies and wireless communication, educators and students now possess the capability to engage beyond the confines of the conventional classroom facilitated by e-learning (Regmi & Jones, 2020). This potential has empowered instructors to harness the adaptability of online learning to cater to the requirements of numerous students across all educational tiers, especially those who are situated in circumstances that hinder their engagement in traditional settings (Gentile et al., 2020).

E-learning introduces novel learning possibilities and instigates profound transformations in educational methodologies (Wei et al., 2021). For instance, the conventional paradigm of education no longer aligns with the contemporary era of lifelong learning, wherein the dynamics between educators and learners are undergoing shifts (Antony & Bhattacharyya, 2010). Consequently, e-learning has emerged as one of the most appropriate alternatives. Moreover, e-learning has frequently proven to be invaluable in scenarios where alternative instructional approaches are unavailable (Islam et al., 2021; Guri-Rosenblit, 2018)

* Corresponding author.

E-mail address: H.mbaideen@mutah.edu.jo (H. O. Mbaidin)

ISSN 2561-8156 (Online) - ISSN 2561-8148 (Print)

© 2024 by the authors; licensee Growing Science, Canada.

doi: 10.5267/j.ijdns.2023.8.024

Traditional classroom instruction has historically followed a teacher-centric approach in which educators wield central authority over class content, spanning subjects, educational resources, progression, and discussions (Olum et al., 2020). Nonetheless, in contemporary pedagogical paradigms, the significance of communication and interaction in learning voyages has emerged as a pivotal factor (Ansong et al., 2017). In this context, e-learning assumes a critical role, possessing the capacity and responsibility to heighten the educational caliber and institutional eminence (Huynh, 2017; Teo et al., 2014).

Universities, whether public or private, endeavor to attain peak performance and distinction. Concentrating on factors such as performance metrics, student contentment, effective leadership, strategic prioritization, procedural management, factual basis, staff advancement and engagement, learning strategies, innovation cultivation, creativity, and social responsibility constitutes the fundamental tenets of organizational excellence (Al-Dhaafri & Alosani, 2021). The pursuit of organizational excellence entails formulating and executing strategies that align with an institution's vision and contextual landscape (Venkatesh et al., 2020). This involves the ongoing preservation of these plans and their continuous evaluation, utilizing methods that encompass total quality control, incessant refinement, and institutional learning (Lavrov et al., 2017; Naveed et al., 2017).

Attaining excellence is a strategic imperative for universities, enabling them to realize their objectives by securing elevated quality standards and a competitive edge (Mohamed et al., 2018). The concept of excellence necessitates universities to meticulously assess their outcomes, pinpoint specific avenues for enhancement, establish a competitive stance within the market vis-à-vis rivals, and foster a stable operational milieu (Ershadi & Dehdazzi, 2019). The adoption of organizational excellence bolsters operational efficacy and promotes the attainment of sought-after outcomes (Al-Adaileh et al., 2022; Al-Eida, 2021). Leveraging the capabilities of information has emerged as a prime avenue for achieving excellence within universities. Singa et al. (2020) assert that the integration of information technology into university operations significantly bolsters performance metrics and fosters the development of noteworthy professional eminence.

Within universities, the Information Technology (IT) capacity is a paramount organizational capability with significant implications (Cardozo et al., 2019). IT capabilities play a pivotal role in facilitating the collection, timely, and accurate analysis of information and knowledge for institutions (Qahtani et al. 2023; Rehman et al., 2020). The university's IT infrastructure serves as a vital digital platform, enhancing the breadth and depth of knowledge and operational processes and bolstering the capacity to acquire, integrate, and apply knowledge (Popescu et al., 2019). From a technology-based perspective, universities boasting a comprehensive and diverse technological foundation are better positioned to assimilate novel information and potential shifts within the educational landscape. Consequently, this enhances their capability to discern opportunities and technological avenues for digital innovation remotely (Yanfika et al., 2020). Numerous scholars have concentrated their efforts on unraveling the mechanism through which information technology processes influence a university's competitive edge and augment its organizational excellence (Dahunsi et al., 2021; Elfaki et al., 2019).

Given the significance of technology in higher education, the objective of this study is to conduct a thorough investigation of how e-learning affects organizational excellence at UAE universities along with the moderating role of demographic factors.

2. The Organizational Excellence

Educational institutions are constantly striving for success, survival, and improvement, which prompts them to continuously develop, enhance, and adjust their strategies and products and utilize renewable educational tools and resources (Al-Jedaiah & Albdareen, 2020). Modern educational institution management aims to optimize the use of knowledge, science, and available resources to achieve success and continuity (Arbab & Mahdi, 2018). Organizational excellence has garnered significant attention from researchers in today's globalized world (Hussain et al. 2023; Alsulami, 2019). This shift is due to the fact that the era of knowledge and information has transcended traditional job specifications, favoring excellence and diverse knowledge in both leaders and subordinates (Aldalimy et al., 2019). Organizational excellence can be described as a state of creative management and exceptional performance that involves the execution of various organizational processes such as production, marketing, and finance. This leads to achievements that surpass competitors and satisfy stakeholders (Khatir et al., 2017). It can also be understood as achieving administrative and functional excellence by harnessing untapped potential in employees and the organization, marked by strong leadership, empowerment, and growth for improved performance (Mehta et al., 2019; Syakur, 2019).

The significance of organizational excellence lies in its role in enhancing educational institutions' efficiency, effectiveness, and overall mechanisms. This positively impacts the quality of the education provided (Mohamed et al., 2018) and contributes to the ongoing success of universities (Miuro, 2018). Organizational excellence further aids in the better management of operations and resources, attracting exceptional students and faculty (Al Shobakib et al., 2017). It promotes outstanding leadership, an efficient workforce, and a culture of excellence, leading to high performance, creativity, and innovation (Al Yami 2019). Organizational excellence promotes the adoption of best practices and tools for quality measurement, self-assessment, and continuous improvement (Aldalimy et al., 2019). It encompasses the principles, standards, and methods that facilitate long-term success (Naser & Al Shobaki, 2017; Almaiah & Alyoussef, 2019). As a vital aspect of administrative development, organizational excellence necessitates the enhancement of employee skills and capabilities within educational institutions (Al Yami, 2019).

This research adopted the following model based on the literature review:

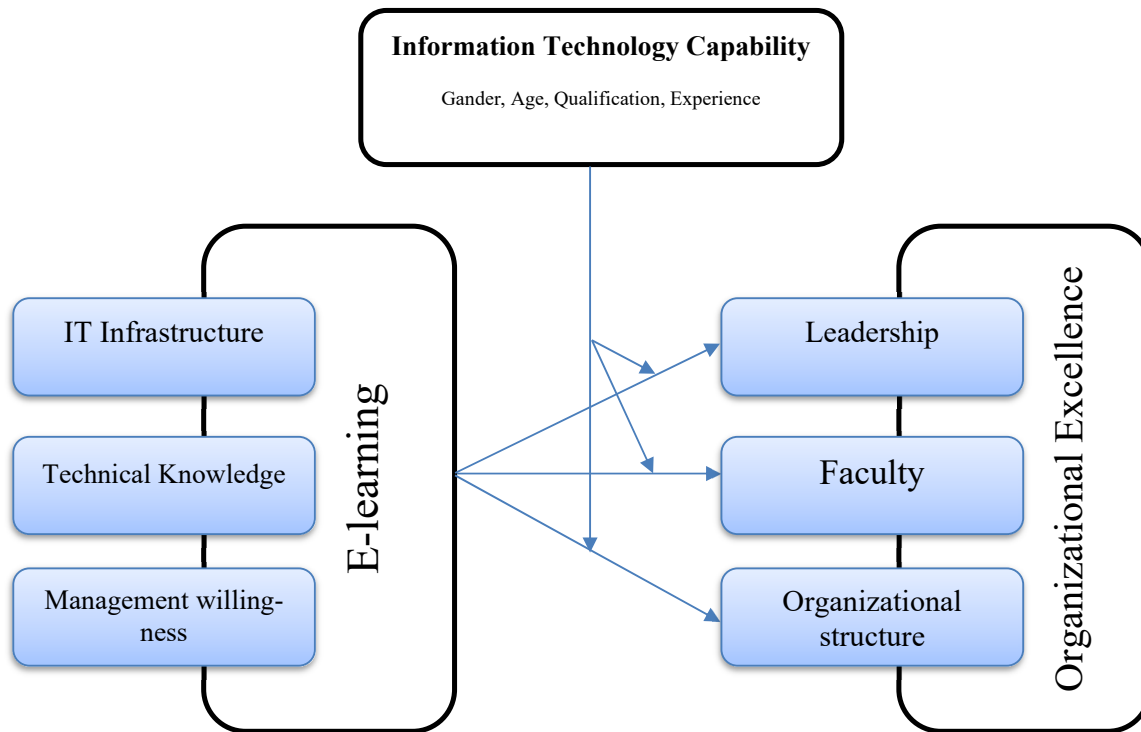


Fig. 1. Conceptual Framework

3. Research Methodology

This study employs a quantitative approach to delve into the relationship between e-learning and organizational excellence within the context of United Arab Emirates (UAE) universities. The primary target population for this research was employees working across various universities in the UAE. Specifically, this study focuses on a sample of 250 senior and middle administrators within public universities in the UAE. The sample was selected using a convenience sampling approach. This approach allows for practical data collection from accessible participants. The survey was built using the Google form platform and distributed to respondents via email. The survey's items were assessed on a five-point Likert scale. The survey was divided into two parts: the first section included demographic factors (such as gender, age, education, and experience), while the second part included 24 questions in total about the dependent and independent variables.

3.1 Data Analysis Tool

The research data were analyzed using the Statistical Package for Social Science (SPSS) and Structural Equation Modeling (SEM) with the AMOS software. Three steps were performed during analysis. The first step involved a descriptive study of the respondents' demographic profile data. The reliability and validity of the constructs were assessed during the second stage of the analysis. Reliability and validity are essential to guarantee the consistency and stability of the study constructs, and the final step of the analysis focuses on hypothesis testing and primary research outcomes, according to Hair et al. (2017). The conclusions of this investigation helped confirm or reject the hypotheses. Through the use of SEM, a thorough investigation of both direct and indirect effects has been made possible, allowing for a deeper comprehension of intricate interactions at work (Sarstedt et al. 2022).

4. Results

4.1 Descriptive Analysis

From Table 1, it is evident that the proportion of males in the sample was 81.2%, whereas females accounted for 18.8%. Regarding age distribution, participants aged "Less than 35 Years old" constituted 9.1%, those aged "35-45 Years old" represented 54.9%, participants aged "45-55 Years old" comprised 24.1%, and those aged "More than 55 Years old" accounted

for 11.9%. Analyzing the education level, it is noteworthy that individuals with a “master’s degree” constituted 65.2% of the sample, whereas those holding a “Doctorate Degree” made up the remaining 34.8%. In terms of Experience, the breakdown indicates that respondents with “Less than 1 year” of experience constituted 2.0%, while those with “1 – 3 years” of experience represented 2.4%. Participants with “3 – 5 years” of experience constituted 13.2%, and the majority, accounting for 82.4%, possessed “More than 5 years” of experience. Table 1 summarizes these results.

Table 1
Demographic characteristics for the study sample

Demographic	Groups	Sample	
		Frequency	Percentage
Gender	Male	203	81.2%
	Female	47	18.8%
Age	Less than 35 Years old	23	9.1
	35-45 Years old	137	54.9
	45-55 Years old	60	24.1
	More than 55 Years old	30	11.9
Educational Level	Master’s Degree	163	65.2%
	Doctorate Degree	87	34.8%
Years of Experience	Less than 1 year	5	2.0%
	1-3 years	6	2.4%
	3-5 years	33	13.2%
	More than 5 years	206	82.4%
	Total	250	100.0%

4.2 Instruments Validity

Cronbach's alpha is a reliability coefficient that assesses the internal consistency of a set of items or variables within a specific construct that should exceed 0.60 (Hair et al.2017). In this context, the table shows Cronbach’s alpha values for both the independent variable, "E-Learning," and the dependent variable, "Organizational Excellence," along with their respective subcomponents. However, the total Cronbach's alpha value for "E-Learning" is 0.873, which indicates a strong level of internal consistency and reliability among the items. For “E-Learning” dimensions (IT Infrastructure, Technical Knowledge, Management Willingness) were 0.944, 0.856, and 0.856, respectively. Furthermore, the total Cronbach's alpha value for “Organizational Excellence” is 0.892 which reflects a solid level of internal consistency among the items that collectively evaluate the concept of Organizational Excellence within the study. Further down the table, the sub-components of “Organizational Excellence” are presented, including “Leadership Excellence”, “Faculty Excellence”, and “Organizational Structure Excellence”. The calculated Cronbach's alpha values for these subcomponents were 0.771, 0.838, and 0.838, respectively. These values indicate that the items within these sub-components consistently measured their respective aspects of Organizational Excellence. Table 2 provides a comprehensive overview of the Cronbach's alphas.

Table 2
Cronbach's alpha for the study fields

Field	Value of (α)
Independent Variables: E-Learning	
IT Infrastructure	0.873
Technical Knowledge	0.944
Management willingness	0.856
Dependent Variable: Organizational excellence	
Leadership excellence	0.892
Faculty excellence	0.771
Organizational structure excellence	0.838

5. Hypothesis Testing

To analyze the data and explore the potential impact of E-learning on organizational excellence within UAE universities, a multiple regression analysis was employed. The procedure is detailed as follows:

Hypothesis 1: *E-learning dimensions (IT Infrastructure, Staff capabilities, Management willingness) have no significant impact on the Organizational excellence dimensions (Leadership excellence, Faculty excellence, Organizational structure excellence) in public universities in the UAE.*

Table 3
Multiple Regression Results

Independent variable	B	T	Sig*
IT Infrastructure	.022	.367	.714
Technical Knowledge	.270	3.143	.002
Management willingness	.607	8.098	.000

Dependent variable: Organizational excellence F-value = 61.886 (0.000) $R^2 = 0.430$

Table 3 illustrates the impact of e-learning and its constituent variables (Technical Knowledge, and management willingness) on organizational excellence. The results depicted in the table reveal a noteworthy and significant influence of e-learning and its variables on the dimensions of organizational excellence within public universities in the UAE. This significance is indicated by a recorded p-value of (0.000), which is below the commonly accepted threshold of (0.05). Furthermore, the coefficient of determination (R²) has a value of (0.430), indicating that approximately 43.0% of the variability observed in organizational excellence can be elucidated by e-learning and its associated variables in the context of public universities within the UAE. This highlights the substantial role that e-learning and its components play in enhancing organizational excellence.

In terms of (F), the calculated value was (61.886). This parameter signifies the influence of e-learning, particularly technical knowledge, and willingness to manage, on organizational excellence within public universities in the UAE. The observed impact indicates that e-learning, with its specific focus on Technical Knowledge and Management willingness, contributes significantly to the variations observed in organizational excellence.

Hypothesis 2: *There is no significant differences of E-learning among Senior and middle administrations due to the variable of (Gender, Age, Educational level, and Experience) in public universities in the UAE.*

Table 4

The results of testing the second hypothesis

Moderating Variable	Estimate	S.E.	C.R.	P (Sig)
Gender	0.382	0.079	4.652	***
Age	0.523	0.077	6.573	***
Educational level	0.648	0.016	38.895	***
Experience	0.234	0.022	10.284	***

The results depicted in Table 4 show that Gender, Age, Educational level, and experience serve as significant moderating variables, influencing the differences in e-learning perceptions among senior and middle administrators within public universities in the UAE. The statistical significance of these findings underscores the importance of these variables in understanding the varying perspectives of e-learning within this academic context.

6. Discussion

The study sought to understand how e-learning affected organizational excellence. The findings indicate that institutional excellence in public universities in the United Arab Emirates is significantly impacted by e-learning dimensions (technical knowledge and management willingness). These findings support earlier findings by (Sáiz-Manzanares et al. 2019; Somyürek et al. 2020; Ho et al. 2020). Given that e-learning allows all stakeholders to complete their jobs effectively and quickly, it makes sense that it has a favorable impact on the university's, organizational structure's, and students' ability to attain excellence. As a result of the UAE universities' strong technical orientation, it is only natural that they strive to integrate technology into every aspect of their administrative and pedagogical procedures to stand out among other universities on a global scale.

Universities frequently find it necessary to adapt to alterations in the external environment and the heightened competitive nature of the market. These external shifts have a comprehensive impact on all facets of the university, with particular emphasis on the human element. The expansion and growth of rival institutions on local and global scales, coupled with the emergence of abundant investment and growth prospects, compels universities to pivot towards innovative technological remedies. The success achieved by universities and the attainment of organizational excellence are closely intertwined with their ability to evolve their technological capacities and integrate novel elements that engender profound modifications in both administrative and educational methodologies (Dawabsheh et al., 2013).

The results indicate that e-learning had a positive impact on improving the implementation of information technology capabilities in universities. Differences were also found in students' behaviors during the research and development processes. One possible explanation is that the educational platforms that universities adopt in e-learning with a learning methodology based on scientific research and critical thinking enable students to move towards research, exploration, and development of their own science (Beard & Humphrey, 2014). This leads to the conclusion that achieving organizational excellence requires focusing on the use of modern technology in administrative and educational practices to develop a large research base that attracts students from all over the world and provides research that contributes to finding solutions and alternatives to the problems facing countries. This finding supports the results of several studies (Ahoorani & Banihashemi, 2019; AL-Abrow et al., 2011). Accordingly, there is always a need to use technology in learning because of its role in enabling senior management and decision-makers to achieve a great competitive advantage and a high reputation at the local and global levels.

7. Implication of the study

Our research makes notable contributions to the existing body of literature in two key dimensions. As universities increasingly turn to information technology as a means of enhancing both educational quality and organizational excellence, scholars in the field of information systems advocate for comprehensive investigations into the application of information technology

within educational and managerial contexts in universities (Wei et al., 2021). However, previous studies have primarily concentrated on the broader influence of e-learning on education in a general sense, without specifically delving into the distinct impact of e-learning on various dimensions within universities, particularly from organizational and administrative perspectives. This study underscores the significance of e-learning as a pivotal tool for elevating a university's reputation and enhancing its organizational excellence.

Additionally, our findings demonstrate that information technology capability represents organizational competence. Our study revealed the positive and substantial effects of information technology capability in improving both e-learning effectiveness and overall organizational excellence. This discovery effectively bridges the gap between distance learning and IT proficiency. Robust IT capability contributes to the enrichment of online learning experiences for universities, enabling them to attain excellence in their administrative and organizational procedures. In the realm of building educational technology capabilities, the integration of varied e-learning facets with the experience of IT capabilities becomes paramount. Universities that possess extensive educational technology capabilities are positioned to seamlessly integrate e-learning across diverse domains, thus augmenting quality assurance standards.

Moreover, this study has profound implications for management practice. This underscores that the strategic application of e-learning and the university's IT capabilities profoundly influence the achievement of remarkable and sustainable performance (Lee et al., 2019). This underscores the criticality of investment and development in robust IT capabilities within university infrastructure. For instance, universities would benefit from recruiting adept IT managers who can proficiently oversee three pivotal dimensions: IT infrastructure capacity, R&D laboratories, and the ability to expand IT initiatives. Attaining performance excellence and customer satisfaction hinges upon these competencies.

Finally, our findings establish a direct relationship between the magnitude of information technology capacity and the extent of e-learning adoption within universities. Hence, top-tier university management must prioritize the enhancement of the IT infrastructure to facilitate more effective e-learning implementation.

8. Conclusion

This study tested a simple prototype to measure the impact of e-learning on the institutional and organizational excellence of public universities in the United Arab Emirates. Apart from empirically establishing that technology and excellence are two different constructs, this study demonstrates that organizational excellence can be attained by creating a relationship between e-learning factors and various IT capabilities, in addition to empirically demonstrating that technology and excellence are two distinct constructs. on using technology in their administrative and educational strategies and that the university cannot become the best by only increasing the level of the e-learning variable to its existing level .

For the successful implementation of e-learning and the achievement of organizational excellence, these issues require attention from those who formulate the architecture of excellence and modern and emerging technology; otherwise, the implementation of e-learning will fail in universities. Technology in this case refers not only to the actual software and hardware features of the platform but also to how well the technology has been adapted to the best teaching practices. The results indicate that if technology is available but not used, it reduces satisfaction, and therefore, organizational excellence. Our findings fill a gap in the literature on e-learning and information technology infrastructure as a process and offer possibilities for future visions for universities to enhance their organizational excellence on this topic. and creates opportunities for rational thinking

References

- Ahoorani, N., & Banihashemi, S. A. (2011). Information technology infrastructures and knowledge management: Towards organizational excellence. *Computer and information science*, 4(5), 20 .
- Al Shobakib, M. J., Abu Amuna, Y. M., & Abu Naser, S. S. (2017). Organizational Excellence in Palestinian Universities of Gaza Strip. *International Journal of Information Technology and Electrical Engineering*, 6(4), 20-30.
- Al Yami, A. (2019). The quality of work-life and relation to organizational excellence at King Khalid University of the faculty members' point of view/Business School Case study. <https://doi.org/10.33095/jeas.v25i116.1788> .
- AL-Abrow, H., Abdullah, H., & Atshan, N. (2019). Effect of organisational integrity and leadership behaviour on organisational excellence: Mediator role of work engagement. *International Journal of Organizational Analysis*, 27(4), 972-985. <http://dx.doi.org/10.1108/IJOA-08-2018-1518> .
- Al-adaileh, R., Alsmairat, M., Momani, A., & Svoboda, P. (2022). Predicting the use of social media business models: The mediating role of organizational e-readiness. *International Journal of Data and Network Science*, 6(4), 1447-1458.
- Aldalimy, M. J. H., Al-Sharifi, A. K. H., & Bannay, D. F. (2019). Strategic Alignment Role in Achieving the Organizational Excellence through Organizational Dexterity. *Journal of Southwest Jiaotong University*, 54(6). <https://doi.org/10.35741/issn.0258-2724.54.6.41> .
- Al-Dhaafri, H., & Alosani, M. S. (2021). Role of leadership, strategic planning and entrepreneurial organizational culture towards achieving organizational excellence: evidence from public sector using SEM. *Measuring Business Excellence*. <http://dx.doi.org/10.1108/MBE-02-2021-0021>.

- Al-Eida, S. N. (2020). The Impact of Ambidextrous Leadership on Organizational Excellence: An Applied Study in Small and Medium Enterprises in Qatar. *International Journal of Business and Management*, 15(9), 163.
- Al-Jedaiah, M. N., & Albdareen, R. (2020). The effect of strategic human resources management (SHRM) on organizational excellence. *Problems and Perspectives in Management*, 18(4), 49. [http://dx.doi.org/10.21511/ppm.18\(4\).2020.05](http://dx.doi.org/10.21511/ppm.18(4).2020.05) .
- Almaiah, M. A., & Alyoussef, I. Y. (2019). Analysis of the effect of course design, course content support, course assessment and instructor characteristics on the actual use of E-learning system. *Ieee Access*, 7, 171907-171922. <https://doi.org/10.1109/ACCESS.2019.2956349> .
- Alsulami, A. N. (2019). The impact of the application of e-management on organizational excellence: Case study on King Abdulaziz University. *Indian Journal of Science and Technology*, 12, 18. <http://dx10.17485/ijst/2019/v12i18/144598>, May 2019 .
- Ansong, E., Boateng, R., Boateng, S. L., & Anderson, A. B. (2017). The nature of E-learning adoption by stakeholders of a university in Africa. *E-Learning and Digital Media*, 14(4), 226-243. <http://dx.doi.org/10.1177/2042753017731235> .
- Antony, J. P., & Bhattacharyya, S. (2010). Measuring organizational performance and organizational excellence of SMEs– Part 2: an empirical study on SMEs in India. *Measuring business excellence*, 14(3), 42-52. <https://doi.org/10.1108/13683041011074209> .
- Arbab, A. M. H., & Abaker, M. O. S. M. (2018). Human resources management practices and organizational excellence in public organizations. *Polish Journal of Management Studies*, 18(2), 9-21. <http://dx.doi.org/10.17512/pjms.2018.18.2.01> .
- Beard, D. F., & Humphrey, R. L. (2014). Alignment of university information technology resources with the Malcolm Baldrige results criteria for performance excellence in education: A balanced scorecard approach. *Journal of Education for Business*, 89(7), 382-388. <http://dx.doi.org/10.1080/08832323.2014.916649> .
- Cardozo, C. T., Kronmeyer, O. R., & Vaccaro, G. L. R. (2019). Keep innovating: Absorptive capacity and the performance of Brazilian information technology companies. *Revista de Administração Contemporânea*, 23, 499-519. <https://doi.org/10.1590/1982-7849rac2019180221>
- Dahunsi, F., Aderinwale, O., Adesida, A., Alayande, A., Ojo, J., Falola, O., & Dahunsi, O. (2021). Development Of A Space Technology Capacity Building Initiative At The Federal University Of Technology, Akure, Nigeria. *Futa Journal Of Engineering And Engineering Technology*, 15(1), 38-52. <https://doi.org/10.51459/futajeet.2021.15.1.267> .
- Elfaki, N. K., Abdulraheem, I., & Abdulrahim, R. (2019). Impact of e-learning vs traditional learning on student's performance and attitude. *International Journal of Medical Research & Health Sciences*, 8(10), 76-82 .
- Ershadi, M. J., & Eskandari Dehdazzi, R. (2019). Investigating the role of strategic thinking in establishing organizational excellence model: A moderating role of organizational forgetting. *The TQM Journal*, 31(4), 620-640. <http://dx.doi.org/10.1108/TQM-05-2018-0062> .
- Gentile, T. A. R., Reina, R., De Nito, E., Bizjak, D., & Canonico, P. (2020). E-learning design and entrepreneurship in three European universities. *International Journal of Entrepreneurial Behavior & Research*, 26(7), 1547-1566. <https://doi.org/10.1108/IJEBR-06-2019-0407>
- Guri-Rosenblit, S. (2018). E-teaching in higher education: An essential prerequisite for e-learning. <http://hdl.handle.net/10045/77434> .
- Hair Jr, J. F., Sarstedt, M., Ringle, C. M., & Gudergan, S. P. (2017). Advanced issues in partial least squares structural equation modeling. saGe publications.
- Ho, N. T. T., Sivapalan, S., Pham, H. H., Nguyen, L. T. M., Van Pham, A. T., & Dinh, H. V. (2020). Students' adoption of e-learning in emergency situation: the case of a Vietnamese university during COVID-19. *Interactive Technology and Smart Education*. <http://dx.doi.org/10.1108/ITSE-08-2020-0164> .
- Hussain, M., Zhu, W., Zhang, W., & Abidi, S. M. R. (2018). Student engagement predictions in an e-learning system and their impact on student course assessment scores. *Computational intelligence and neuroscience*, 2018. <https://doi.org/10.1155/2018/634718> .
- Huynh, R. (2017). The role of E-learning in medical education. *Academic Medicine*, 92(4), 430-430.
- Islam, M. A., Nur, S., & Talukder, M. S. (2021). E-learning in the time of COVID-19: Lived experiences of three university teachers from two countries. *E-learning and Digital Media*, 18(6), 557-580. <https://doi.org/10.1177/20427530211022924> .
- Lavrov, E., Pasko, N., Tolbatov, A., & Barchenko, N. (2017, July). Development of adaptation technologies to man-operator in distributed E-learning systems. In *2017 2nd International Conference on Advanced Information and Communication Technologies (AICT)* (pp. 88-91). IEEE. <https://doi.org/10.1109/AIACT.2017.8020072> .
- Lee, J., Song, H. D., & Hong, A. J. (2019). Exploring factors, and indicators for measuring students' sustainable engagement in e-learning. *Sustainability*, 11(4), 985. <https://doi.org/10.3390/su11040985> .
- Mehta, A., Morris, N. P., Swinnerton, B., & Homer, M. (2019). The influence of values on E-learning adoption. *Computers & Education*, 141, 103617. <https://doi.org/10.1016/j.compedu.2019.103617> .
- Miuro, F. (2018). An Exploratory Factor Analysis for Validation of a Measurement of Organizational Excellence Construct among Universities in the Central Region of Uganda. *Interdisciplinary Journal Of Education (IJE)*, 1(1), 49-61. <https://doi.org/10.53449/ije.v1i1.37> .
- Mohamed, M. S., Khalifa, G. S., Nusari, M., Ameen, A., Al-Shibami, A. H., & Abuelhassan, A. E. (2018). Effect of organizational excellence and employee performance on organizational productivity within healthcare sector in the UAE. *Journal of Engineering and Applied Sciences*, 13(15), 6199-6210.
- Moubayed, A., Injadat, M., Nassif, A. B., Lutfiyya, H., & Shami, A. (2018). E-learning: Challenges and research opportunities using machine learning & data analytics. *IEEE Access*, 6, 39117-39138. <https://doi.org/10.1109/ACCESS.2018.2851790> .

- Naser, S. S. A., & Al Shobaki, M. J. (2017). Organizational excellence and the extent of its clarity in the Palestinian universities from the perspective of academic staff. *International Journal of Information Technology and Electrical Engineering*, 6(2), 47-59.
- Naveed, Q. N., Muhammed, A., Sanober, S., Qureshi, M. R. N., & Shah, A. (2017). Barriers Effecting Successful Implementation of E-Learning in Saudi Arabian Universities. *International Journal of Emerging Technologies in Learning*, 12(6). <https://doi.org/10.3991/ijet.v12i06.7003>.
- Olum, R., Atulinda, L., Kigozi, E., Nassozi, D. R., Mulekwa, A., Bongomin, F., & Kiguli, S. (2020). Medical education and E-learning during COVID-19 pandemic: awareness, attitudes, preferences, and barriers among undergraduate medicine and nursing students at Makerere University, Uganda. *Journal of Medical Education and Curricular Development*, 7, <https://doi.org/10.1177/2382120520973212>.
- Popescu, D. I., Ceptureanu, S. I., Alexandru, A., & Ceptureanu, E. G. (2019). Relationships between Knowledge Absorptive Capacity, Innovation Performance and Information Technology. Case Study: e Romanian Creative Industries SMEs. *Studies in Informatics and Control*, 28(4), 463-475. <https://doi.org/10.24846/v28i4y201910>.
- Qahtani, E. H. A., & Alsmairat, M. A. (2023). Assisting artificial intelligence adoption drivers in human resources management: a mediation model. *Acta logistica*, 10(1), 141-150.
- Regmi, K., & Jones, L. (2020). A systematic review of the factors—enablers and barriers—affecting e-learning in health sciences education. *BMC medical education*, 20(1), 1-18. <https://doi.org/10.1186/s12909-020-02007-6>.
- Rehman, N., Razaq, S., Farooq, A., Zohaib, N. M., & Nazri, M. (2020). Information technology and firm performance: mediation role of absorptive capacity and corporate entrepreneurship in manufacturing SMEs. *Technology Analysis & Strategic Management*, 32(9), 1049-1065. <https://doi.org/10.1080/09537325.2020.1740192>.
- Sáiz-Manzanares, M. C., García Osorio, C. I., Díez-Pastor, J. F., & Martín Antón, L. J. (2019). Will personalized e-Learning increase deep learning in higher education?. *Information Discovery and Delivery*, 47(1), 53-63. <http://dx.doi.org/10.1108/IDD-08-2018-0039>.
- Sharma, K., Pandit, P., & Pandit, P. (2011). Critical success factors in crafting strategic architecture for e-learning at HP University. *International Journal of Educational Management*, 25(5), 423-452. <http://dx.doi.org/10.1108/09513541111146350>.
- Singsa, A., Pamornmast, C., & Sriyakul, T. (2020). The Impact of the Leadership, Organizational Excellence and the Enterprise Resource Planning on the Organizational Performance: A Case of SMEs in Thailand. *Asian Administration & Management Review*, 3(2).
- Somyürek, S., Brusilovsky, P., Çebi, A., Akhüseyinoğlu, K., & Güyer, T. (2020). How do students perceive their own and their peers' progress in e-learning?. *The International Journal of Information and Learning Technology*, 38(1), 49-74. <https://doi.org/10.1108/IJILT-05-2020-0073>.
- Syakur, A. (2019). Application of E-Learning As a Method In Educational Model to Increase The TOEFL Score In Higher Education. *Journal of Development Research*, 3(2), 111-116. <https://doi.org/10.28926/jdr.v3i2.88>.
- Teo, T., Ruangrit, N., Khlaisang, J., Thammetar, T., & Sunphakitjumnong, K. (2014). Exploring e-learning acceptance among university students in Thailand: A national survey. *Journal of Educational Computing Research*, 50(4), 489-506. <http://dx.doi.org/10.2190/EC.50.4.c>.
- Valipour Khatir, M., Azar, A., & Amini, M. R. (2017). Developing performance based budgeting model: organizational excellence approach. *Management Research in Iran*, 21(2), 179-198.
- Venkatesh, S., Rao, Y. K., Nagaraja, H., Woolley, T., Alele, F. O., & Malau-Aduli, B. S. (2020). Factors influencing medical students' experiences and satisfaction with blended integrated E-learning. *Medical Principles and Practice*, 29(4), 396-402. <https://doi.org/10.1159/000505210>.
- Wei, S., Xu, D., & Liu, H. (2022). The effects of information technology capability and knowledge base on digital innovation: the moderating role of institutional environments. *European Journal of Innovation Management*, 25(3), 720-740. <https://doi.org/10.1108/EJIM-08-2020-0324>.
- Yanfika, H., Yanfika, H., Martin, Y., Martin, Y., Mutolib, A., Mutolib, A., ... & Rahmat, A. (2020). Capacity Level of Extension Worker and Institutional Support in Developing the Capability of Extension Worker to use Information Technology. *Capacity Level of Extension Worker and Institutional Support in Developing the Capability of Extension Worker to use Information Technology*, 9(5), 1545-1551. <https://doi.org/10.35940/ijitee.E2576.039520>.

