Data and Metadata. 2025; 4:899 doi: 10.56294/dm2025899

ORIGINAL



The impact of digital marketing in achieving institutional excellence

El impacto del marketing digital en el logro de la excelencia institucional

Amer Muflih Alkufahy¹ ⊠

¹Jadara University. Irbid, Jordan.

Cite as: Alkufahy AM. The impact of digital marketing in achieving institutional excellence. Data and Metadata. 2025; 4:899 https://doi.org/10.56294/dm2025899

Submitted: 21-06-2024 Revised: 07-10-2024 Accepted: 17-04-2025 Published: 18-04-2025

Editor: Dr. Adrián Alejandro Vitón Castillo

Corresponding author: Amer Muflih Alkufahy ⊠

ABSTRACT

Introduction: digital marketing has emerged as a crucial topic in research Promotion and marketing Contemporary, addressing different factors across multiple fields. This study aims to investigate the relationship between digital marketing and institutional excellence, as well as the moderating role of digital marketing strategies in this relationship. Using a quantitative research approach, data was collected from business organizations in Jordan, with the participation of 189 Participant, from friends and my manager These companies, contributed to the sample.

Method: method was used Partial least squares structural equation modeling (PLS-SEM) In analytical procedures Main.

Results: when studying the impact of digital marketing on achieving institutional excellence in Jordan, it was found that there was a statistically significant effect between relying on digital marketing and achieving institutional excellence, Average Arithmetic (2,13) and deviation normative (0,86) On a big level (0,05). The value is high On a Likert scale in the first place (Free and natural help to appear in search to improve web searches and thus the continuous development of the products/services offered) And he reached Average Year (2,29) and standard deviation (0,889). In the last order (Online marketing database allows - digital content anytime, anywhere.) on average mathematics (2,01) and standard deviation (0,825).

Conclusion: this result confirms that there is a statistical significance for digital marketing in achieving institutional excellence. And there is a moderate positive correlation between digital marketing and achieving institutional excellence (r=0,640). The impact of digital marketing in achieving institutional excellence was equal to 41 %.

Keywords: Digital Marketing; Institutional Excellence; Institutional Excellence; Marketing; Companies; Jordan.

RESUMEN

Introducción: el marketing digital ha emergido como un tema crucial en la investigación Promoción y marketing contemporáneo, abordando diferentes factores a través de múltiples campos. Este estudio tiene como objetivo investigar la relación entre el marketing digital y la excelencia institucional, así como el papel moderador de las estrategias de marketing digital en esta relación. Utilizando un enfoque de investigación cuantitativa, los datos fueron recogidos de las organizaciones empresariales en Jordania, con la participación de 189 Participante, de amigos y mi gerente Estas empresas, contribuyeron a la muestra.

Método: se utilizó el método de mínimos cuadrados parciales modelización de ecuaciones estructurales (PLS-SEM) en los procedimientos analíticos principales.

Resultados: al estudiar el impacto del marketing digital en el logro de la excelencia institucional en Jordania,

© 2025; Los autores. Este es un artículo en acceso abierto, distribuido bajo los términos de una licencia Creative Commons (https://creativecommons.org/licenses/by/4.0) que permite el uso, distribución y reproducción en cualquier medio siempre que la obra original sea correctamente citada

se encontró que había un efecto estadísticamente significativo entre confiar en el marketing digital y el logro de la excelencia institucional, promedio aritmético (2,13) y la desviación normativa (0,86) En un gran nivel (0,05). El valor es alto En una escala de Likert en el primer lugar (Ayuda gratuita y natural para aparecer en la búsqueda para mejorar las búsquedas en la web y por lo tanto el desarrollo continuo de los productos / servicios ofrecidos) y alcanzó promedio pritmético (2,29) y desviación estándar (0,889). En el último orden (Base de datos de marketing online permite - contenido digital en cualquier momento y en cualquier lugar.) en matemáticas promedio (2,01) y desviación estándar (0,825).

Conclusión: estos resultados confirman que existe una significación estadística para el marketing digital en el logro de la excelencia institucional. Además, existe una correlación positiva moderada entre el marketing digital y el logro de la excelencia institucional (r=0,640). El impacto del marketing digital en el logro de la excelencia institucional fue igual al 41 %.

Palabras clave: Marketing Digital; Excelencia Instituciona; Excelencia Institucional; Marketing; Empresas; Jordania.

INTRODUCTION

At the beginning of the twenty-first century, organizations had to deal with a number of challenges, such as intense competition and constant technical improvements. (1) Nowadays, e-commerce is a crucial part of worldwide retail. The retail industry has seen significant changes since the advent of the Internet. Furthermore, the digitization of contemporary life has made it possible for clients worldwide to profit from internet transactions. (2) Organizations are always seeking methods to improve their efficiency, increase output, and reduce expenses related to supplies, labor, and infrastructure. (3)

Digital marketing opens new horizons in the world of marketing by targeting buyers, shoppers, and consumers directly and individually, and is considered one of the contemporary methods of providing bridges. Communication between seller and buyer to market goods and services and establish and develop relationships with customers. Based on the this; Marketing jobs have become a new concept and are taking a bigger shape It was effective with digital technology, but it did not exclude or deny traditional marketing theories. Rather, it was able to benefit from them in developing them and finding solutions to its problems and produced a new phenomenon called digital marketing.

And The marketing function is characterized by its multiple fields and mechanisms, and has become an urgent necessity in our current era as a result of the qualitative boom witnessed in the field of communication and communication. Hence, digital marketing has emerged as an important and urgent means in the business environment and technological development.

consumers and sellers connect in the virtual world on several websites to exchange products and services during the purchasing and selling of goods and services on the Internet. (4)

Research objectives: the current research paper aims to study the relationship between digital marketing and institutional excellence organizations, As well as role analysis Mediator For digital marketing strategies in this relationship. Therefore, the research question that will be addressed in this research work can be formulated as follows: What is the relationship between digital marketing and institutional excellence in business Jordanian organizations? what extent can digital marketing strategies support this relationship?

METHOD

The current research is a quantitative research. Since the study, this approach aims to address the sample's views on the relationship between digital marketing and institutional excellence and the moderating role of digital marketing strategies. The conceptual framework is shown in the figure 1. Sets of hypothesized research data. And The framework shows that independent construction (digital marketing with...five Subvariables) which are assumed to have a relationship and predict the dependent variable (institutional excellence). In addition, it is assumed that digital marketing strategies greatly support the relationship between digital marketing and institutional excellence. The study sample included various business organizations operating in Jordan. The study used a sampling method that is appropriate for the purpose of data collection and that facilitates reaching the target sample and collecting sufficient responses.⁽⁵⁾

The study increased the scope of participation by including relevant participants representing the research sample from different backgrounds to enrich the study findings. Using a survey questionnaire approach in collecting data and through a review of relevant literature, a research instrument was developed based on previous relevant studies. Furthermore, before distributing the questionnaire, a group of experts (scientists from Jordanian universities) conducted a review of the questionnaire to verify the validity of the measurement of the variables. The experts made a number of amendments and recommended changes that included adding

3 Alkufahy AM

new items and reviewing other items. The time frame for data collection was extended over several weeks, as a total of participants participated in the current analysis 189 Owners and managers of business Jordanian organizations.

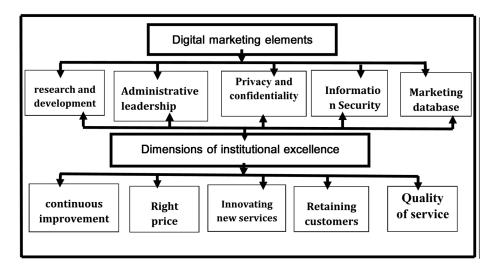


Figure 1. The relationship between digital marketing and institutional excellence

The independent research variable were measured (digital marketing) through five Subvariables are: Marketing database, information security, privacy and confidentiality, administrative leadership support, and research and development. All these subvariables were measured by items adopted and adapted from the relevant literature (e.gThe following studies:(Mobydeen, Ahmed, 2021; Mohammad, 2022) $^{(6)}$ using a five-point Likert scale rated as (1 = disagree Strongly, 2 = Disagree , 3 = neutral , 4 = OK , 5 = strongly agree), They are often coded uniquely for analysis purposes.

Using a partial least squares structural equation modeling (PLS-SEM) approach, the study conducted the main analysis procedures that include various statistical tests such as path coefficients, validity and reliability of the measurements. It is highly suggested that this approach be used in studies Administrative, Due to the many important tests and analytical procedures that can be introduced and provided in this method. (7)

The results of the study were presented using SmartPLS3 software Which is generally used in this type of studies. Provides an approach SEM-PLS Key Statistical Findings also help the research in providing good perspectives on the results of the study. Hence, this study used this method because of the ability to analyze these perspectives and process the data properly through sets of procedures.

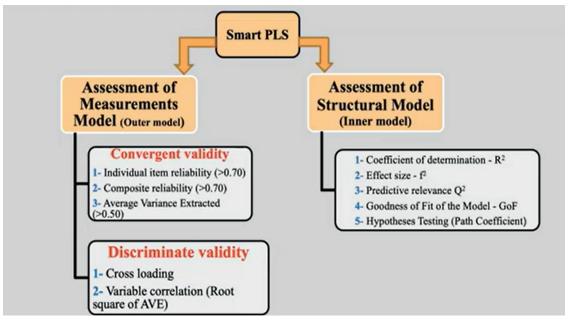


Figure 2. Shows the indicators to be measured

Figure 2 shows the most important indicators to be measured and the tests that must be performed, which are divided into two types of indicators:

- 1. Qualitative indicators such as validity, reliability, consistency and predictability.
- 2. Standard indicators: such as variance, degree of importance, standard deviation, and critical values of variance in the data.

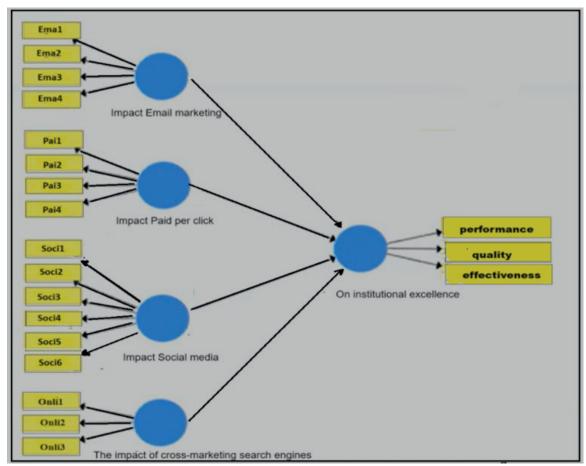


Figure 3. Illustrating building the model in the Smart Plus program

Figure 3 shows the model that was built using the Smart Plus program for statistical analysis, where the questions were divided into four groups. The first group is related to electronic marketing through the use of email, the second group is related to marketing through the use of the click feature, and the third group is related to the marketing feature through social networking sites. Social and the fourth group, which relates to marketing through the use of search engines, and each group consists of a set of questions. The first group consists of four questions, the second consists of four questions, the third consists of six questions, and the fourth consists of three questions to extract qualitative and standard indicators from the model.

The table 1 displays the results of this analysis analyzed convergent validity through AVE and CR. The results found good outputs for the measurement model and mostly achieved a satisfactory level. The results also indicated acceptable ranges Between less than 0.50 And less than 0.70 respectively for convergent validity. (8) The results of the measurement model also confirmed the stability and validity of the variables statement. This model is about four Indicators with low factor loadings (<0.70) but mostly good validity and reliability of the research variables (>0.50 and >0.70).

Figure 4 shows the results of the results of qualitative indicators such as consistency, validity, and distinctiveness, especially by using the Cronbach number, as the Cronbach number is equivalent to 0,7. Calculating the Cronbach coefficient for a set of data. The value of the Crenbach coefficient is greater than 0,7. This means that the data has a high degree of consistency and distinction. However, if the Cronbach number for the data is less than 0,7; this means that the data is inconsistent or that the consistency is low and the reliability of the questionnaire results is not great. It is also clear from the figure. The model has good qualitative indicators, as the Cronbach coefficient index was 0,876; the CR index was equal to 0,772; while the AVE index was equal to 0,774.

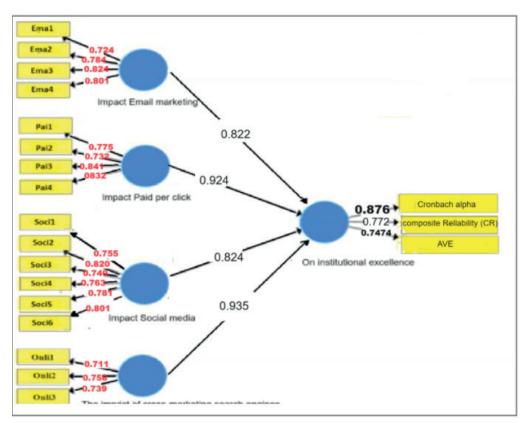


Figure 4. Shows validity, reliability, and consistency using the Smartwells program

Table 1. Results of this analysis analyzed convergent validity through AVE and CR							
Dimensions	Items	Mean	*SD	FL	Alpha	CR	AVE
	Ema1	0,674	0,021	0,061			
Impact Email marketing On	Ema2	0,657	0,024	0,064	0 022	0.703	0.711
institutional excellence	Ema3	0,701	0,030	0,07	0,822	0,783	0,711
	Ema4	0,625	0,025	0,065			
	Pai1	0,654	0,029	0,069			
Impact Paid per click	Pai2	0,687	0,037	0,077			
marketing On institutional excellence	Pai3	0,635	0,031	0,071			
CACCACATAC	Pai4	0,660	0,034	0,074	0,924	0,836	0,795
	Soci1	0,632	0,027	0,067			
	Soci2	0,725	0,028	0,068			
Impact Social media	Soci3	0,745	0,035	0,075			
marketing On institutional excellence	Soci4	0,704	0,039	0,079			
	Soci5	0,758	0,038	0,078			
	Soci6	0,811	0,037	0,077	0,824	0,712	0,776
The impact of cross-market	Onli1	0,824	0,012	0,052			
in search engines O	Onli2	0,740	0,011	0,051			
institutional excellence	Onli3	0,850	0,011	0,051	0,935	0,839	0,736
The total		0,710	0,027	0,067	0,876	0,772	0,774
*SD = standard deviation; FL = factor loadings.							

The study is also concerned with examining an issue of validity through another type of validity called discriminant validity which is generally used to evaluate how research constructs relate to or represent unique concepts. (9) Validity procedure that was implemented to verify this validity through the cross-loading approach. She also conducted the study The critical analyzes required are: Fornell-Larcker and Heterotrait-Monotrait

(HTMT), Which are important and indicate the relationships of the variables. The results shown in the table 2 were calculated and the table 3 by the square root of AVE and were explained in the clearly off-diagonal cells in which the correlations with the same were greater than with the correlations of other variables. Furthermore, the measurement model found good results for discriminant validity, and was therefore included in the study Another approach to HTMT As another analysis process used to evaluate this validity. I found the results shown in the table 3 HTMT achieved a good threshold of $(\ge 0,90)$. Therefore, this satisfies the required analysis of discriminant validity of the HTMT.

Table 2. Fornell-Larcker Criterion						
Variables	Ema	Pai	Soci	Onli		
Ema	0,721					
Pai	0,512	0,823				
Soci	0,521	0,491	0,762			
Onli	0,543	0,312	0,42	0,788		

As for table 2, it is a table of the relationship of each group of questions to the other groups so that the results of discriminant validity can be drawn. It was very natural for the executive validity between the group and itself to be the highest values. Therefore, we notice from the figure that the discriminant validity of the groups with themselves was the highest value, followed by the validity The discriminatory value was for shopping via social media platforms and using other electronic platforms, while the lowest value was related to the set of questions related to the click or click feature and shopping via email.

Table 3. Heterotrait-Monotrait (HTMT)						
Variables	Ema	Pai	Soci	Onli		
Ema1	0,521	0,112	0,345	0,151		
Ema2	0,554	0,11	0,351	0,134		
Ema3	0,516	0,102	0,287	0,112		
Ema4	0,54	0,142	0,338	0,124		
Pai1	0,113	0,652	0,124	0,11		
Pai2	0,21	0,568	0,135	0		
Pai3	0,114	0,648	0,245	0,14		
Pai4	0,151	0,698	0,351	-0,24		
Soci1	0,421	-0,05	0,601	0,12		
Soci2	0,452	0,22	0,578	0,102		
Soci3	0,489	0,251	0,665	0,1		
Soci4	0,452	0,288	0,648	0,124		
Soci5	0,487	0,251	0,587	0		
Soci6	0,399	0,286	0,654	0,01		
Onli1	0,321	0,198	0,078	0,499		
Onli2	0,335	0,12	0	0,511		
Onli3	0,364	0,134	0,014	0,546		

Table 3 shows the suitability of the questions in the four groups to obtain a result that confirms institutional excellence in marketing. In this test, all the questions are presented and their relationships with all the groups are presented. For example, if we choose a question from the first group and ask it in the second or third group and we calculate the results, does this happen? Is there a difference or not? Is there a fit between the data or not? From the results shown in the table, it is clear that there is a great fit between the data for shopping groups via social media platforms and shopping via electronic platforms, and a less fit between the shopping via email feature and shopping via the click feature. These results confirm what It was reached through a discrimination and validity table, as the results are the same, which indicates that the model is a good model and can be relied upon.

RESULTS

The next model is the structure model which is the second stage of PLS-SEM analysis. The process of

7 Alkufahy AM

evaluating the structural model includes the main The analysis used a bootstrapping approach as shown in figure 1 to obtain the results of direct effects as shown in table 4. The results found that the dimensions of digital marketing (Marketing database, information security, privacy and confidentiality, administrative leadership support, and research and development) had a significant impact on institutional excellence (P<0,05), and therefore the results support all the research hypotheses involved.

Table 4. Hypotheses Testing					
Hypoth	heses	Beta	t-value	p-value	Result
H1	Digital marketing. Achieving institutional excellence	0,30	4,25	<0,0001	Supported**
H2	Digital marketing. Dimensions of achieving institutional excellence	0,35	5,21	<0,0001	Supported**
R2 for achieving institutional excellence				0,801	
Q2 for achieving institutional excellence				0,25	

This analysis should be further examined within empirical studies through Statistical parameters Which is related to the variance and is called the coefficient of determination (R2) and the cross-validated repeatability (Q2) which They are essential for verification because they indicate the quality of the model and its prediction. The results of the structural model were interpreted 80 % of the variance in institutional excellence. Since the scores ranged from 0 to 1, the structural model data confirmed good explanatory power. (11) To verify the quality of the model regarding its prediction, the study also analyzed the predictive value of Q2 for the dependent variable, which exceeds the value of zero, and this confirms the analysis, and the result is shown in the table 4 which supports this assumption.

The current study examined digital marketing strategies as a mediator to predict the mechanism The relationship between Digital marketing and institutional excellence. An analysis has been performed moderation In this study through the PLS-SEM approach which provides Broker path transactions With the main analysis outputs. They present and give a clear decision about this type of analysis By t-value and p-value, Where they point to that Statistical analyzes used in most studies on whether to accept or reject the hypothesized moderating path. However, the results are shown in the table 5 Digital marketing strategies have positively and significantly supported the relationship between digital marketing and institutional excellence (p=<0,05). The results also revealed a role mediator For digital marketing strategies, this role confirmed its course. The impact of digital marketing strategies on this relationship has been confirmed by the results presented, which are consistent with the research objective and expand the growing interests to address this variable in recent studies.

Table 5. Moderation Analysis						
Hypot	theses	Beta	t-value	p-value	Result	
H3	Digital marketing. Weakness of institutional excellence	0,11	0,770	0,95	NOT Supported	

DISCUSSION

Confirm Business organizations in Jordan stress the importance of relying on Digital marketing To achieve Institutional excellence and this is possible to Business organizations respond effectively to market changes. On the other hand, the results confirmed the need to develop a marketing database, and this result indicates that the relationship between a marketing database and institutional excellence can vary based on consideration of the mediating role of digital marketing strategies. Our results are consistent about the effects Digital marketing on Institutional excellence With the body of literature and some previous studies (ex: Karam, Kitana, 2020; Mansoor, 2024),⁽¹²⁾ but it provided new research insights into Effect Digital marketing components In developing institutional excellence.

Moreover, the results indicated that information security, privacy, and confidentiality in marketing have a direct impact on institutional excellence in business organizations. Digital marketing strategies were recognized as a mediator in the relationship in question. Digital marketing strategies are still viewed as a marketing goal and institutional of the organization, but currently it has a complex aspect and becomes more efficient if organizations engage in more diverse activities For what it requires research and development. Accordingly, the results are consistent with the literature presented in this discussion and confirmed digital marketing strategies that can be measured This is the results As indicated in study of (Al-Abdi, 2024). (13) The success of digital marketing depends on Business organizations in Jordan are common on Marketing database development

and Administrative leadership support, and it has the results of this study supported the role of providing these digital marketing factors in supporting institutional excellence in business organizations, this consistent with previous studies (e.g.: Aldaabseh et al, 2023,).⁽¹⁴⁾

This research reviewed the literature on the interrelationship between application Digital marketing and Achieving institutional excellence in business organizations in Jordan, The main goal of the study is to reveal this topic that most researchers have addressed regarding the impact of digital marketing. At the same time, the study emphasizes the relevant literature that has received big focus. Hence, the scope of the research and the community support future research methods to provide more insights that can progress Best practicesto For digital marketing in business organizations, this consistent with previous studies (e.g.: Liu, 2022; Islami et al, 2020).⁽¹⁵⁾

As Adding a new variable (which is institutional excellence) To a state-of-the-art model for which there has never been an example would enhance the implications of the theory and model through greater understanding of the theory and its implementation in different settings. The study reached results that link some ideas to the theory of technology use within commercial activities. Despite the large number of studies that have examined and examined the impact of digital marketing on organizational aspects such as Institutional excellence However, this study is considered one of the new attempts To rely on Digital marketing is a factor that can lead to institutional excellence, This consistent with previous studies (e.g.: Alexandra, Szakal, 2023). (16) However, the study highlighted the great importance of developing a marketing database with Necessity of availability Information security, privacy and confidentiality in marketing, to respond to market opportunities in shade Administrative leadership support For digital marketing and the increasing reliance on research and development Catalog Survey data were collected 189 from Managers and owners of business organizations operating in Business organizations in Jordan.

This provided empirical support for the relationship Between digital marketing and institutional excellence In an environment Business Unconfirmed. While digital marketing has been widely discussed in the literature, to the best of the researcher's knowledge, this study is the first work that theoretically discusses several capabilities together to leverage the discussion in the context of digital marketing to increase. The ability to achieve institutional excellence to These are business organizations.

CONCLUSION

The research achieved the main stated objectives of the study and addressed the relationship between digital marketing and investigation institutional excellence organizations in Jordan with the mediating role of digital marketing strategies. The key study findings revealed all aspects of digital marketing that showed a significant impact on institutional excellence. Subsequent analysis also found that digital marketing strategies managed to apply digital marketing, which has a clear effect on institutional excellence. However, the importance of digital marketing strategies showed a significant positive value of the beta coefficient on institutional excellence. Accordingly, the study reached fundamental results, it is important for the management of business organizations and policy makers to look with great interest at this role through capabilities promotional and marketing provided by digital marketing to promote ability competitiveness for the organization in the market. As business organizations must go beyond strategies marketing in the usual way, to achieve institutional distinction building a good reputation and achieving competitiveness in the product promotion, services, financing, authorship contributions, conflict of interest.

REFERENCES

- 1. Alnawafleh, A., Qatawneh, N. A., Al-Maaitah, D. A. (2024). Strategies for success: A theoretical model for implementing business intelligence systems to enhance organizational performance, p56.
- 2. Al-Adwan, A. S., Alrousan, M. K., Yaseen, H., Alkufahy, A. M., Alsoud, M. (2022). Boosting online purchase intention in high-uncertainty-avoidance societies: A signaling theory approach. Journal of Open Innovation: Technology, Market, and Complexity, 8(3), p136.
- 3. Daabseh, T., Raqqad, R., Albayaydah, H., Alqarallah, R., Alhtibat, A., Alzboun, E., Aldamen, H. (2023). Linking between cloud computing and productivity: The mediating role of information integration. International Journal of Data and Network Science, 7(2), p957.
- 4. Daabseh, T. K. I. A., Aljarah, A. (2021). The relationship between online sale and customer value cocreation: The mediating role of e-satisfaction and e-trust. International Journal of Data and Network Science, 5(2), p97.
 - 5. Etikan, I., Bala, K. (2017). Sampling and sampling methods. Biometrics and Biostatistics International

9 Alkufahy AM

Journal, 5(6), p149.

- 6. Mobydeen, Omar, Ahmad, Waed (2021). The impact of digital marketing practices on the organizational performance in the mobile phone companies in Jordan, nova university of applied sciences series, p12.
- 7. Hair, J. F., Risher, J. J., Sarstedt, M., Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. European Business Review, 31(1), p29.
- 8. Fornell, C., Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. Journal of Marketing Research, 18(1), p40.
- 9. Henseler, J., Ringle, C. M., Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. Journal of the Academy of Marketing Science, 43(1), p115.
- 10. Kline, R. B. (2015). Principles and practice of structural equation modeling (4th ed.). Guilford publications, New York, London, p33.
- 11. mueli, G., Sarstedt, M., Hair, J. F., Cheah, J.-H., Ting, H., Vaithilingam, S., Ringle, C. M. (2019). Predictive model assessment in PLS-SEM: guidelines for using PLSpredict. European Journal of Marketing, 53(11), p2322.
- 12. Karam, Asaad Ali, Kitana, Abdelkarim, An Exploratory Study to Identify the Impact of Leadership Styles on Achieving Institutional Excellence in the Public Sector, United Arab Emirates, 2020.
- 13. Al-Abdi, Mansoor S. (2024). The Role of Digital Public Relations in Sustaining Institutional Excellence in AR- Rasheed Modern Schools, Yemen, vol 3 no 6, p245.
- 14. Aldaabseh, Tariq, Aljawarneh, Nader Mohammad, Alkufahy, Amer Muflih (2023). The Relationship Between Business Intelligence Capabilities and Business Outcomes of Small and Medium Sized Enterprises: The Moderating Role of Competitive Intelligence, Journal of System and Management Sciences, Vol. 13, No. 4, August, p547
- 15. Liu, Ying (2022). Effect of Digital Marketing Capabilities and Blockchain Technology on Organizational Performance and Psychology, Frontiers in Psychology journal, No. 12, p12.
- 16. Alexandra, Mocanu Ana, Szakal, A.C. (2023). Digital Marketing Strategies: A Comprehensive Literature Review, Bulletin of the Transilvania University of Brasov Series V Economic Sciences 16(65), p37-44.

FINANCING

No financing.

CONFLICT OF INTEREST

None.

AUTHORSHIP CONTRIBUTION

Conceptualization: Amer Muflih Alkufahy.

Data curation: Amer Muflih Alkufahy.

Formal analysis: Amer Muflih Alkufahy.

Acquisition of funds: Amer Muflih Alkufahy.

Research: Amer Muflih Alkufahy. Methodology: Amer Muflih Alkufahy.

Project management: Amer Muflih Alkufahy.

Resources: Amer Muflih Alkufahy. Software: Amer Muflih Alkufahy. Supervision: Amer Muflih Alkufahy. Validation: Amer Muflih Alkufahy. Display: Amer Muflih Alkufahy.

Drafting - original draft: Amer Muflih Alkufahy.

Writing - proofreading and editing: Amer Muflih Alkufahy.