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The Impact of Business Intelligence on Improving Administrative Performance in Some Private Jordanian Universities in the Northern Region

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Abstract

This study aimed to clarify the impact of business intelligence applications on improving the performance of administrators working in private Jordanian universities located in the northern region. The study relied on the descriptive analytical approach, using the questionnaire tool to reach the study objectives, in addition to relying on previous theoretical literature and prior studies. The study found a statistically significant effect at the significance level ($0.05 \geq \alpha$) for business intelligence applications with their combined dimensions (data warehouse, data mining, direct analytical processing, information review techniques) on improving the performance of administrators in Jordanian private universities in the northern region (rejecting the first main null hypothesis). Additionally, each of the data warehouse, data mining, direct analytical processing, and information review techniques individually has a statistically significant effect at the significance level ($0.05 \geq \alpha$) on the performance of administrators in Jordanian private universities in the northern region (rejecting the four sub-null hypotheses). The study recommended the necessity of attracting senior management in Jordanian private universities in the northern region to individuals with skills in using business intelligence, and developing the capabilities of their employees by holding training workshops or through job rotation, as well as making periodic improvements to business intelligence systems. Furthermore, Jordanian private universities should benefit from the experiences of other local, governmental, and international universities in the field of applying business intelligence, which positively reflects on achieving their goals and developing their services efficiently and effectively.

Keywords: Business Intelligence, Data Mining, Direct Analytical Processing, Data Warehouse, Information Visualization Techniques, Managerial Performance, Private Universities in the Northern Region.

1. Introduction

With the developments in the field of technology and digital transformation, there are challenges facing institutions and companies in various sectors to keep pace with these developments and changes. One of these challenges is that it has become necessary for employees in these companies and institutions to be efficient and have sufficient skills to use technology and harness it for the benefit of the institution or company in which they work (Al-Bataineh et al., 2021). Since the development process is continuous and is not limited by time or place, development at all levels has become inevitable, especially in the era of the information technology revolution. Because administrative development is considered the cornerstone of the rest of the aspects, it was necessary to pay attention to administrative development and try to keep pace with all changes that would raise the efficiency of administrative work, and adopt strategies that seek to do so. Therefore, it was necessary for business intelligence to enter this aspect due to its great importance in helping senior management manage and develop its administrative affairs and help it make strategic decisions (Al-Omari and Aqili, 2020; Al-Akwa, 2023).

The most important thing that institutions and companies must have to build a business intelligence structure is to take a set of steps to determine the appropriate tool to use. First, the needs of the company or institution must be determined, and then work on searching for the appropriate tool for these needs, and a budget must be made for the company or institution so that it can know if it is able to acquire that tool, and then ensure that it can be used by employees easily and smoothly, and after that, a test is conducted for the chosen tool (Al-Bataineh et al., 2020). Given the great importance of business intelligence in improving the work of these institutions and its importance in the process of making strategic decisions, and the possibility of using business intelligence to predict market needs and changes in the tastes of the target group by the institution, and since universities are considered one of the most important institutions in the state, and the outputs of these universities play a major role in the development of countries, we had to explain the importance of business intelligence in these institutions, and the extent of its impact on improving the performance of administrators in private Jordanian universities.

2. Problem Statement

Private universities in Jordan face multiple challenges in improving administrative performance and ensuring the provision of high-quality services. With the rapid technological advancement and the increase in the volume of available data, it has become necessary to adopt business intelligence techniques to enhance administrative efficiency and effectiveness. Current literature indicates the importance of business intelligence in improving administrative performance, as the study by Al-Masry and Tafesh (2020) showed that the use of a data warehouse enhances the effectiveness of data management and leads to more accurate decisions. Also, the study by Chelik (2023) showed that data mining can provide deep insights into administrative performance from real-time data analysis, which enhances their ability to respond quickly to challenges. Moreover, information visualization techniques play a vital role in improving the clarity and accessibility of data.

Despite these benefits, there is still a gap in understanding the impact of different BI dimensions on administrative performance in Jordanian private universities. While studies have addressed some aspects of BI technologies separately, such as data warehouses and data mining, research that examines the effects of the four BI dimensions (data warehouse, data mining, direct analytical processing, and information visualization techniques) in an integrated manner on administrative performance is scarce. For example, a study indicated that(Abu-AlSondos, 2023)There is a gap in business intelligence applications that requires consideration of usage and maintenance time, while a study showed that(Tripathi et al., 2023)Lack of sufficient information about the impact of business intelligence systems leads to difficulties in dealing with unexpected events.

Accordingly, this study seeks to bridge the knowledge gap by analyzing the impact of the four dimensions of business intelligence (data warehouse, data mining, direct analytical processing, and information visualization techniques) in an integrated manner on the performance of administrators in Jordanian private universities. The study aims to provide practical recommendations to improve the use of these technologies in a way that enhances administrative performance and raises the level of services provided, which helps universities face current and future challenges more efficiently and effectively.

3. Research Hypotheses

H01. There is no statistically significant effect at the significance level (0.05).≥ α) for business intelligence applications as a whole (data warehouse, data mining, direct analytical processing, information review techniques) to improve the performance of administrators in Jordanian private universities in the northern region.

The following sub-hypotheses branch out from this theory:

H01-1There is no statistically significant effect at the significance level (0.05).≥ α) for the data warehouse on the performance of administrators in Jordanian private universities in the northern region.

H01-2There is no statistically significant effect at the significance level (0.05).≥ α) To mine data on the performance of administrators in Jordanian private universities in the northern region.

H01-3There is no statistically significant effect at the significance level (0.05).≥ α) For direct analytical treatment of the performance of administrators in Jordanian private universities in the northern region.

H01-4There is no statistically significant effect at the significance level (0.05).≥ α) Data review techniques on the performance of administrators in Jordanian private universities in the northern region.

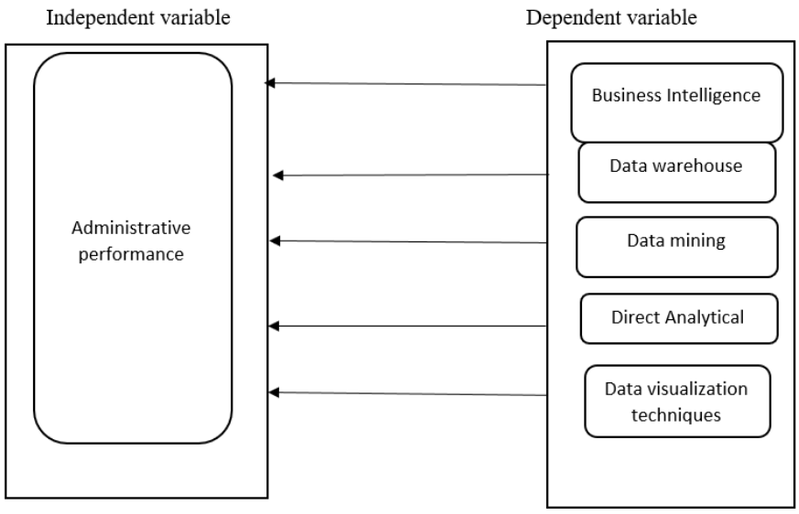

Figure 1.

3.1. What is Business Intelligence?

The concept of business intelligence came to be associated with the information age, and it has been focused on recently due to the huge developments in information technology and information technologies. What can be noted here is that the term business intelligence was used for the first time in the fifties, where it was used by the companyIBMFor the manufacture of computers and software, and was proposed by the researcherHans Peter LuhnIn 1985, he proposed an idea to develop a system that would disseminate information within the organization and through which data would be processed for use in decision-making in the organization.

Bayes (2016) defined business intelligence as a tool used at all administrative levels: strategic, tactical, and operational. It contributes to the analysis of data obtained from internal and external sources, which is processed to obtain information that contributes to accomplishing the tasks of the three administrative levels mentioned above. Both of them indicated thatTaylor(2019) andWalker(2017) Business intelligence includes various types of structured and unstructured data (i.e. processed data and data that has not been processed and converted into

information) and Internet of Things data, all of which support decision-making systems and contribute to the speed and accuracy of the organization's immediate decision-making. Wardia (2021) defined it as a set of processes and technologies that convert data into information that can be used in decision-making and strategic planning. Saleh (2022) defined business intelligence as a system that includes information specific to the organization, where the organization uses tools to collect and store data, and then works to analyze it to obtain information by presenting it in smart ways to support decision-making systems and decision-makers, and trying to obtain accurate and fast information.

3.2. Business Intelligence Tools

Although previous studies on business intelligence and its tools have mentioned many business intelligence tools, these tools were chosen because they represent the cornerstones of business intelligence and cover all stages of the data life cycle from collection and storage to analysis and presentation. Each tool plays an important role in improving the decision-making process and supporting administrators in educational institutions. The data warehouse provides a unified central database that facilitates access to and consistent analysis of data. Data mining enables the discovery of hidden patterns and relationships in data, which helps in predicting and making informed decisions. Direct analytical processing provides multidimensional analysis tools that allow a deep understanding of data from different angles (Saadi and Logani, 2022). Information visualization techniques contribute to simplifying data and presenting it visually in an easy-to-understand manner and making quick and accurate decisions. By using these tools together, a significant improvement in the performance of administrators can be achieved by providing accurate and immediate insights that help address challenges and exploit opportunities effectively in Jordanian private universities in the northern region.

3.3. Administrative Performance

Al-Kurdi (2010) indicates that there is a group of elements that administrative performance cannot be achieved without, and which the employee is supposed to be fully aware of, namely: knowledge of job requirements in terms of skills, experiences, knowledge, and general background about the employee's job and the areas related to it. In addition to the amount of work accomplished, i.e. what the employee can accomplish during a specific period of time under normal working conditions. The third element is represented by perseverance, seriousness, dedication to work, and bearing responsibility for completing tasks within a specific time, and the extent to which the employee needs guidance and counseling, and evaluating his work at the end.

Performance is defined as the effort made to transform inputs into outputs, through which the organization seeks to achieve its goals. It is linked to internal factors such as the individual's abilities, skills, and readiness to perform job duties (Al-Manea, 2006). In general, performance is a comparison between actual performance and expected performance, as it shows the extent of the individual's efficiency in performing his job duties. As for administrative performance, it is of great importance to the organization, as it refers to the skills, competencies and abilities of employees at the administrative levels in the organization to perform their jobs efficiently and effectively (Al-Ajlah, 2009). Administrative performance, from the point of view of(Heppely, 2011)The organization's ability to use its available resources in the best possible way and as quickly as possible to achieve its strategic goals. Administrative performance is a set of activities that lead to achieving the organization's goals, and is expressed by the efficiency of workers and obtaining outputs that express the level of excellence enjoyed by the performance. Administrative performance is the sum of the skills and information possessed by the individual and the motivations he possesses towards accomplishing his job duties in a way that achieves a competitive advantage for the organization and achieves its organizational goals. From the above, the researcher defines administrative performance procedurally as a set of activities and tasks performed by the administrative employee to accomplish what is required of him efficiently and effectively, and in a way that contributes to achieving the organization's goals within the available capabilities.

3.4. Study Population and Sample

The researcher monitored the number of administrators in the private universities targeted by the study, which are (Irbid National University, Jadara University, and Ajloun National University), and according to the data obtained by the researcher, the number of administrators in these universities combined amounted to (495) male and female employees for the year 2024.

The researcher relied on the table he presented.(Saunders et al., 2007)To determine the appropriate sample size, which provides us with a direct way to clarify the appropriate sample size for the study population. Since the study population was (495) administrative employees in the three universities selected as the study population, a sample of (230) employees was selected. The questionnaire was distributed to them in paper form. (202) valid questionnaires were retrieved for analysis, which constitutes 88%. Considering the data available for this study, the retrieval of (202) valid questionnaires for analysis is sufficient and represents the study population by 95% with a margin of error of 5%.

3.5. Stability

A pre-test of the study tool was conducted using Cronbach's alpha test.Cronbach's alphaTo measure the stability of the questionnaire, this test is used to ensure the reliability of the study tool, so that it has validity and correctness in the test, as the Cronbach Alpha internal consistency test was used.(Cronbach's alpha) It measures the degree of consistency in the study sample's answers to all paragraphs of the tool, and its value is acceptable at (60%), which is acceptable in the social and human sciences.(Bougie and Sekaran, 2020)The results show that the Cronbach's alpha coefficient values ranged between (9.24-9.58) as follows:

Cronbach's alpha values ranging from 9.24 to 9.35 indicate that:9.58It indicates that the questionnaire items have a very high level of internal consistency or reliability. In other words, there is good homogeneity and the study itself consistently and reliably measures the phenomena it aims to measure.

3.6. Description of the Demographic Characteristics of the Study Sample

Table 1. Distribution of the study sample by gender.

1- Distribution by gender

Ratio	Number	Variable
52.5%	106	Male
47.5%	96	Feminine
100.0%	202	The Total

Table 2. Distribution of the study sample according to age.

2- Age group

Ratio	Number	The Age
34.2%	69	20-Less Than 30
49.5%	100	30-Less Than 40
13.4%	27	40-Less Than 50
3.0%	6	50+
100.0%	202	The Total

Table 3. Distribution of the study sample according to academic qualification.

3- Academic qualification

Ratio	Number	Academic Qualification
18.8%	38	High School
33.7%	68	Diploma
18.3%	37	Bachelor's
23.3%	47	Master's
5.9%	12	Phd
100.0%	202	The Total

Table 4. Distribution of the study sample according to the number of years of experience.

4- Number of years of experience

Ratio	Number	Number of Years of Experience
45.0%	91	1-Less Than 5 Years
43.6%	88	5-Less Than 10 Years
11.4%	23	10 Years And Above
100.0%	202	The Total

Table 5. Distribution of the study sample according to job description.

5- Job Description

Ratio	Number	Job Description
13.9%	28	Boss
46.0%	93	Head Of Department
40.1%	81	Administrative Officer
100.0%	202	The Total

3.7. Testing Study Hypotheses

In order to achieve the study objectives, as this study aims primarily to identify the impact of business intelligence in its dimensions (data warehouse, data mining, direct analytical processing, information review techniques) on improving the performance of administrators, for this purpose the researcher conducted a multiple linear regression test with the aim of measuring the impact of the dimensions of the independent variable (business intelligence) on the dependent variable (administrative performance).

Table 6. Results of the multiple linear regression test to test the main study hypothesis.

Test the main hypothesis

Indication F	Value F	Coefficient of determinationR2	Correlation coefficient R	Transaction table coefficients			Statement	
				Indication	Value t	B	independent variable	Dependent variable
0.000	28,942	0.370	0.608	0.087	1.722	0.124	Data warehouse	performance Administrators
				0.082	-1.749	-0.130	Data mining	
				0.022	2.315	0.166	Direct Analytical Processing	
				0.000	7.302	0.497	Information display techniques	

The table shows the outputs of the multiple linear regression of the dimensions of the independent variable explained by the dependent variable. The value of the linear correlation coefficient (R), indicates that there is a strong relationship of (.608) between the dimensions of the independent variable and the dependent variable in the regression model. The closer the value of (R) from (1) whenever this indicates that the independent variables

provide a better explanation for the variance in the dependent variable. As for the value of the coefficient of determination (R2) It indicates the percentage of variance in the dependent variable that can be explained by the independent variables in the model. This means that (37%) of the variance in the performance of managers is attributed to business intelligence in its combined dimensions (data warehouse, data mining, direct analytical processing, information review techniques). This indicates that the model is very effective in explaining the data. The table shows the analysis of variance (ANOVA) that the value of (F) The big one at (28.942) and its significance (sig) A significant function at a significance level of (0.000) which is less than (0.05) indicates that the model as a whole provides a good and significant prediction of the explanatory variable. That is, this value indicates that the independent variables included in the model have a significant effect on the explanatory variable. Based on this result, the null hypothesis that states that (H01There is no statistically significant effect at the significance level (0.05).≥α) for business intelligence applications in its dimensions (data warehouse, data mining, direct analytical processing, information review techniques) to improve the performance of administrators in Jordanian private universities in the northern region, and accept the alternative hypothesis that indicates (H1There is a statistically significant effect at the significance level (0.05).≥α) for business intelligence applications with its combined dimensions (data warehouse, data mining, direct analytical processing, information review techniques) on improving the performance of administrators in Jordanian private universities in the northern region. The results from the coefficient table show that two dimensions of business intelligence (direct analytical processing, information review techniques) have a positive and significant effect, as the value of (t) indicates its statistical significance at the significance level (0.05).≥α), while it was (t) The dimension (data warehouse) is not significant at the value (1.722) and is significant at (p=0.087) and it was (t) The dimension (data mining) is not significant at the value of (-1.749) and is significant at (p=0.082).

Table 7. Results of the multiple linear regression test to test the first sub-hypothesis.

Testing the First Sub-Hypothesis

Analysis of variance ANOVA		**Model Summary Model Summery**		**Transaction table coefficients**			**Statement**	
Indication F	**Value F**	**Coefficient of determinationR2**	**Correlation coefficient R**	**Indication**	**Value t**	**B**	**Independent Variable**	**Dependent variable**
0.000	25.447	0.113	.336	0.000	5.045	0.322	Data warehouse	Administrative performance

From the table above, which shows the outputs of simple linear regression, the value of the linear correlation coefficient (R), indicating that there is a strong relationship of (.336) between the data warehouse and the performance of administrators in the regression model, while the value of the coefficient of determination (R2) It indicates the percentage of variance in the performance of administrators that can be explained by the data warehouse in the model. This means that (33.6%) of the variance in the performance of administrators is attributed to the data warehouse. The table shows the analysis of variance (ANOVA) that the value of (F) The big one at (25.447) and its significance (sig) Significantly significant at a significance level of (0.000) and less than (0.05≥α) To repository data on the performance of administrators in private Jordanian universities in the northern region, and accept the alternative hypothesis that indicates (H1.1There is a statistically significant effect at the significance level (0.05).≥α) for the data warehouse on the performance of administrators in Jordanian private universities in the northern region), and the results from the coefficients table show that the data warehouse has a positive and significant effect, as the value of (t) indicates its statistical significance at the significance level (0.05).≥α), at (5.045), and it is clear from the value of (B) The non-standardized data warehouse has a significant and medium effect of (0.322) on the performance of administrators. This means that for every one-unit change in the data warehouse, its value changes by (0.322) on the performance of administrators.

Table 8. Results of the multiple linear regression test to test the second sub-hypothesis.

Testing the Second Sub-Hypothesis

Analysis of variance ANOVA		**Model Summary Model Summery**		**Transaction table Coefficients**			**Statement**	
Indication F	**Value F**	**coefficient of determinationR2**	**Correlation coefficient R**	**Indication t**	**Value t**	**B**	**independent variable**	**Dependent variable**
.002	9.637	0.046	.214	0.000	3.104	0.196	Data mining	Administrative performance

It appears from the table above, which shows the outputs of simple linear regression, that the value of the linear correlation coefficient (R), indicates that there is a weak relationship of (.214) between data mining and administrators' performance in the regression model, while the value of the coefficient of determination (R2) It indicates the proportion of variance in the performance of administrators that can be explained through data mining, and the table shows the analysis of variance (ANOVA) that the value of (FThe big one at (9.637) and its significance (sig) is a significant function at a significance level of (0.000) which is less than (0.05) indicating that the model as a whole provides a good and significant prediction of the explanatory variable. That is, this value indicates that data mining has a significant impact on the performance of administrators. Based on this result, the null hypothesis that states that (H01.2There is no statistically significant effect at the significance level (0.05).≥α) To mine data on the performance of administrators in Jordanian private universities in the northern region), and the results from the coefficient table show that data mining has a positive and significant effect, as the value of (t) indicates its statistical significance at the significance level (0.05).≥α), at (3.104), and it is clear from the value of (B) The non-standardized data mining has a significant and medium impact of (0.196) on the performance of

administrators. This means that for every change of lonliness one for data mining Leads To change Its value is (0.196) on the performance of administrators.

Table 9. Results of the multiple linear regression test to test the third sub-hypothesis.

Sub-Hypothesis 3

Analysis of variance ANOVA		Model Summary Model Summery		Transaction table Coefficients			Statement	
Indication F	**Value F**	**coefficient of determinationR2**	**Correlation coefficient R**	**Indicationt**	**Value t**	**B**	**independent variable**	**Dependent variable**
0.002	9.637	0.046	.214	0.000	6.117	0.359	Direct Analytical Processing	Administrative performance

It appears in the table above, which shows the outputs of simple linear regression, where it is clear that the value of the linear correlation coefficient (R), indicating that there is a strong relationship of (397.) direct analytical processing and administrative performance in the regression model, while the value of the coefficient of determination (R2) It indicates the proportion of variance in managers' performance that can be explained by direct analytical processing in the model. This means that the analysis of variance (ANOVA) that the value of (F) The big one at (37.415) and its significance (sig) is significantly significant at the significance level (0.000) and is less than (0.05) indicating that the model as a whole provides a good and significant prediction of the explanatory variable. That is, this value indicates that direct analytical processing has a significant impact on the performance of administrators. Based on this result, the null hypothesis that states that (H01.3There is no statistically significant effect at the significance level (0.05).≥α) for direct analytical treatment of the performance of administrators in Jordanian private universities in the northern region) and leads to accepting the alternative hypothesis that indicates (H013: There is effect With indication Statistics when level Significance(0.05≥α) For processing Analytical Direct on performance Administrators in Universities Jordanian Private in province North) and shows Results from table Transactions that prospecting on Data she has effect positive And moral where that in (t) indicates to Its importance Statistics when level Significance(0.05≥α), when(6.117), It becomes clear from value (B) not Standard that for direct analytical processing effect Dal And average And his destiny(0.359)on performance Administrators, This It means that it per change By the amount lonliness one for direct analytical processing Leads To change Its value (0.359)on performance Administrators.

Table 10. Results of the multiple linear regression test to test the fourth sub-hypothesis.

Sub-Hypothesis 4

Analysis of variance ANOVA		Model Summary Model Summery		Transaction table Coefficients			Statement	
Indication F	**Value F**	**coefficient of determinationR2**	**Correlation coefficient R**	**Indicationt**	**Value t**	**B**	**independent variable**	**Dependent variable**
.000	103,698	0.341	.584	0.000	8.885	0.503	Information display techniques	Administrative performance

It appears from the table above, which shows the outputs of the simple linear regression, that the value of the linear correlation coefficient (R), indicates that there is a medium relationship of (.584) between information review techniques and administrators' performance in the regression model, while the value of the coefficient of determination (R2) It indicates the percentage of variance in administrators' performance that can be explained by the information review techniques in the model. This means that (34.1%) of the variance in administrators' performance is attributed to information review techniques. The table shows the analysis of variance (ANOVA) that the value of (F) The big one at (103.698) and its significance (sig) is significantly significant at the significance level (0.000) and is less than (0.05) indicating that the model as a whole provides a good and significant prediction of the explanatory variable. That is, this value indicates that information display techniques have a significant impact on the performance of administrators. Based on this result, the null hypothesis that states that (H01.4There is no statistically significant effect at the significance level (0.05).≥α) for information review techniques on the performance of administrators in Jordanian private universities in the northern region) and leads to accepting the alternative hypothesis that indicates (H1.4There is a statistically significant effect at the significance level (0.05).≥α) for information review techniques on the performance of administrators in private universities in the northern region), and the results from the coefficients table show that information review techniques have a positive and significant effect, as the value of (t) indicates its statistical significance at the significance level (0.05).≥α), at (8.885), and the value of (B) The non-standardized results indicate that information review techniques have a significant and moderate effect of (0.503) on the performance of administrators. This means that for every one-unit change in information review techniques, there is a change of (0.503) in the performance of administrators.

4. Results and Recommendations

4.1. Discussion of the Results Related to the Study Hypotheses

The results of the study hypotheses showed the following:

1- There is a statistically significant effect at the significance level (0.05).≥α) Business intelligence with its combined dimensions (data warehouse, data mining, direct analytical processing, information review techniques) on the performance of administrators in private Jordanian universities in the northern region. The researcher believes that business intelligence in private universities in providing services as a whole,

and it is similar to the study of Saadi and Logani (2022), the study of Al-Omari and Aqili (2020), and the study of Al-Qabali (2014).

2- There is a statistically significant effect at the significance level (0.05).≥α) For the data warehouse on the performance of administrators in Jordanian private universities in the northern region, and this indicates the importance of investing Jordanian private universities in the northern region in developing and enhancing data warehouses to maximize their benefit in improving administrative performance.

3- There is a statistically significant effect at the significance level (0.05).≥α) To mine data on the performance of administrators in Jordanian private universities in the northern region, the researcher believes that Jordanian private universities are interested in using data mining technology to improve and develop the performance of administrators in Jordanian private universities in the northern region.

4- There is a statistically significant effect at the significance level (0.05).≥α) For direct analytical processing on the performance of administrators in Jordanian private universities in the northern region, and the researcher attributes this result to the fact that the administration of Jordanian private universities seeks to improve and develop their administrative performance, and this enhances the benefit of direct analytical processing in enhancing the efficiency and effectiveness of university administration.

5- There is a statistically significant effect at the significance level (0.05).≥α) Information display techniques and the performance of administrators in private Jordanian universities in the northern region. The researcher believes that private Jordanian universities are developing their work through information display techniques, which play an important role in improving the performance of administrators in private Jordanian universities in the northern region, which confirms the importance of using these techniques and adopting them within the administrative work in these universities.

4.2. Recommendations

In general, it is recommended to adopt strategies to enhance business intelligence in Jordanian private universities in the northern region. This can be achieved by providing continuous training for administrators on the use of business intelligence tools and techniques, and focusing on data analysis to make informed strategic decisions. The following are more specific recommendations regarding the study results.

- The need for senior management in private Jordanian universities in the northern region to attract individuals with skills in using business intelligence, and to develop the capabilities of its employees by holding training workshops or through job rotation, as well as making periodic improvements to business intelligence systems.
- That Jordanian private universities benefit from the experiences of other local, governmental and international universities in the field of applying business intelligence, which will positively reflect on achieving their goals and developing their services efficiently and effectively.
- The vision of private universities should include their ideal future state, and private universities should provide other methods for managing their relationships with other universities, which will be reflected in university administrators developing their capabilities in the field of business intelligence.

References

Abu-AlSondos, I. A. (2023). The impact of business intelligence system (BIS) on quality of strategic decision-making. International Journal of Data and Network Science, 7(4), 1901-1912. https://doi.org/10.2991/idns.k.230731.001

Al-Akwa, A. A. A. (2023). The role of business intelligence in administrative development: An applied study in security companies in Sana'a (Master's thesis). Sana'a University.

Al-Atoum, R. J. H. (2020). The impact of business intelligence on crisis management in Jordanian commercial banks (Master's thesis). Isra University, Jordan.

Al-Kurdi, A. (2010). Management of administrative performance: Foundations and practices. Amman: Dar Al Thaqafa for Publishing and Distribution.

Al-Qarni, E. (2021). The impact of business intelligence and business big data analytics on Saudi business development (Master's thesis). Arabian Gulf University.

Alawaleez, M. (2014). The impact of using business intelligence on decision quality of Jordan Telecom Group (Orange) (Master's thesis). Amman Arab University, Jordan.

Alqsrayi, E. (2022). The impact of business intelligence on strategic entrepreneurship: Organizational agility as a mediating variable in Jordanian entrepreneurial companies (Ph.D. thesis). The World Islamic Science University, Amman, Jordan.

Bader, A. (2017). Organizational readiness toward business intelligence implementation: Case study: Ministry of Education & Higher Education, Gaza.

Bayzi, K. (2016). Business intelligence and its role in decision-making. Algerian Journal of Economics and Finance, University of Algiers, 3-34.

Bougie, R., & Sekaran, U. (2020). Research methods for business: A skill-building approach (8th ed.). Wiley.

Han, J., Kamber, M., & Pei, J. (2011). Data mining: Concepts and techniques. Elsevier. https://doi.org/10.1016/B978-0-12-381479-1.00001-2

Saadi, R., & Logani, N. (2022). The impact of business intelligence on human resources performance in the economic institution: A case study of Algeria Telecom - Tebessa. University of the Martyr Sheikh Larbi Tebessa, Tebessa.

Saleh, O. A. (2022). Business intelligence... How do you say? And why? Arab Journal of Informatics and Information Security, Arab Foundation for Education, Science and Arts, 4, 1-30.

Sabra, A. M. A. (2022). The role of business intelligence in enhancing competitive cost leadership in higher education institutions. Journal of Administrative Research, Sadat Academy for Administrative Sciences, Center for Consulting, Research and Development.

Shabir, M. (2015). The role of business intelligence systems in developing human capital in the Palestinian banking sector: A case study of Bank of Palestine. Master's Thesis, Islamic University, Gaza.

Shraideh, S. Z. (2019). The impact of business intelligence systems on strategic decision making in the Jordanian Customs Department. Master's thesis, Isra University, Jordan.

Taamallah, M. A. K. M. (2024). The impact of business intelligence systems data characteristics on the quality of decisions in the Jordanian Customs Department. Master's thesis, Irbid National University, Jordan.