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Influence of Business Intelligence and Big Data on Organizational Performance

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Abstract. The purpose of current study was to explore the influence of business intelligence (BI) and big data on organizational performance. The methodological approach adopted in this study was quantitative and positivist in its nature, and this took place through adopting a questionnaire was distributed on a sample of (98) from general, executive and operational managers within Jordanian organization operating in Jordan within the fiscal year 2021-2022. Researcher in that sense depended on SPSS in order to tackle the numerical primary data which were collected from the application process. Results of study indicated that business intelligence in combination with big data contributed to improving the level of decision-making in organizations, that is, taking the appropriate decision at the right time, and accordingly it was proven that business intelligence contributes significantly to improving the performance level of organizations. It is expected from current study to be of great help for organizations which operations are based on IT tools and results in collecting huge bulk of data, current study would help in maximizing the interest in BI and big data for better decision making which would lead to better performance. On theoretical level, it is expected from current study to be a start for other academic and interested people to take initiative and carry out researches that are related to managing big data.
Study recommended paying some attention to business intelligence capabilities of startups organization, and as a future work, it is recommended to carry out a research that analyzes of the impact of network learning on the performance of financial organizations

Keywords: business intelligence, strategic, analytical, operational, network learning, innovation, big data, performance management, organizational performance.

1. Introduction

Organizations aspire to work intelligently by early detection of problems and trying to solve them so as not to interfere and affect the production line or the supply of service, and they seek to reach a state of rapid visions and take the right decisions in order to ensure the progress of business and walk in the steady steps of Solid and distinguished performance (Richards et al, 2019). The concept of intelligence is not new, as man is considered one of the smartest creatures on the face of the earth, and for this reason man has become the master and ruler of the earth, and through his intelligence he was required to build the earth and this is what happened (Abusweilem and Abualoush, 2019).

Today, intelligence is no longer associated with humans, but there is a smart machine, smart plan and smart business. The term business intelligence appeared in its oldest form in 1865 when Richard Millar Devens used the term 'business intelligence' in his book "Cyclopædia of Commercial and Business Anecdotes", in which he dealt with how the banker 'Sir Henry Fornnis' made wealth and profits only by accessing information and data about the banking environment surrounding rivals (Karthikeyan and Benjamin, 2019). Subsequently, Hans Peter Luhn, an IBM researcher, used the term "business intelligence" in an article published in 1958, in which he asserted that business intelligence is the ability to understand interrelationships in order to direct efforts toward a goal (Botos, 2018).

Vallurupalli and Bose (2018) indicate that business intelligence contributed to creating an appropriate environment for the organization in which it can reach distinguished performance by controlling performance measurement tools and standards for controlling it. Business is the ability to provide processed information from big data that improves the decision-making process and thus improves the level of performance. As for Nithya and Kiruthika (2021), they emphasized that the concept of business intelligence is one of the most important factors that contributed to raising the level of performance of financial organizations “banks” by relying on data retrieved from the business environment and analyzing it and then supplying it accurately and reliably to decision makers to make decisions necessary in order to direct the organization's activity towards strategic goals.

Generally speaking, how can business intelligence (BI) approaches help in managing organizational performance, and how can organizations exploit BI in reaching an excellent performance based on BI approaches that they have? From here, the current study seeks to determine the role of business intelligence and big data in improving the performance level of organizations by adopting business intelligence approaches (Strategic, Analytical and Operational) in addition to big data and measuring its quantitative impact on the performance of organizations and performance management.

Based on problem statement above, researcher was able to form a model that highlights the relationship between variables as following:

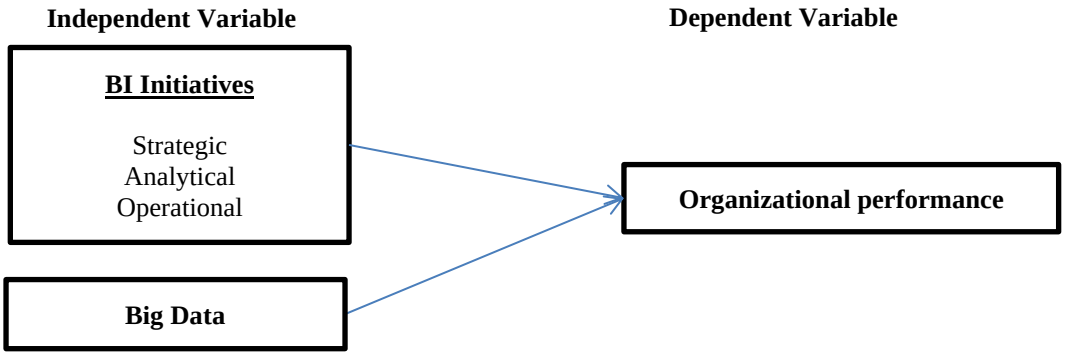

Fig. 1: Study model (Quinn, 2018; Bordeleau et al, 2020).

Launching from above model, following set of hypotheses was extracted:

H1: BI initiatives positively enhance organizational performance

H1a: Strategic initiative positively enhance organizational performance

H1b: Analytical initiative positively enhance organizational performance

H1c: Operational initiative positively enhance organizational performance

H2: Big data positively enhance organizational performance

H3: BI initiatives and big data positively enhance organizational performance

2. Literature Review

2.1. Business intelligence BI

The principle of commercial activities is based on achieving pre-established strategic goals in order to ensure that individuals are served, whether with products or services in a successful and fruitful manner, and thus achieve profits, reputation and customer base (Tavera Romero et al, 2021). Tripathi et al (2020) argued that business operations and activities result in a huge amount of data, this data is not considered useless, but rather it is very useful for the organization in studying its environment and its competitors and showing its market share and level of service to its customers, therefore, benefiting from this data is considered of great importance as it applies in the interest of business in a way that enables the organization to be aware of and study the surrounding circumstances and the dangers that it may be exposed to and thus address them quickly and in a successful manner.

On the other hand, organizations today have realized that they live in a technology-based environment, and that the development of their performance is based on their ability to take advantage of the data they produce on a daily basis as a result of their work and activities, and this data moves very quickly and becomes

larger with time, which puts the organization in the problem that it is unable to deal with the huge volume of data and benefit from it in the appropriate way due to its wide radiance activities as according to following figure:

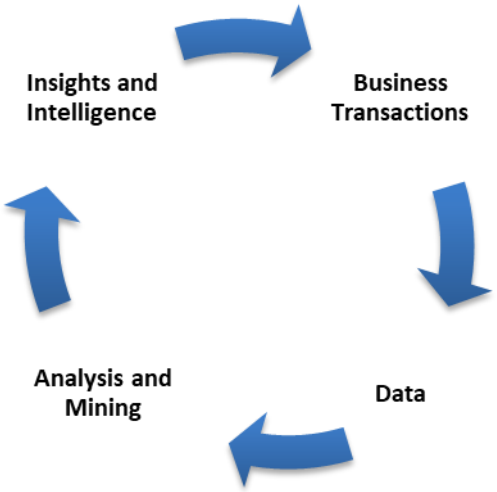

Fig. 2: Business activities Cycle *Researcher.

From here, what is known today as business intelligence, which is a comprehensive term for the technology that allows data preparation, data mining, data management, and data visualization (Ain et al, 2019). As for Richards et al (2019), business intelligence has been defined as tools and processes that allow organizations to identify actionable information from raw data, facilitating data-based decision-making within organizations across various industries. From another perspective, Jalil et al (2019) and Niño et al (2020) defined BI as concepts and methods for improving business decision-making through evidence-based support systems.

Božič and Dimovski (2019) defined BI as another identifier of decision support systems, and it is a term that refers to a group of activities directed towards exploiting the available organizational data in order to improve the performance of organizations through analyzing data and converting it into information, assessing strengths and weaknesses, creating an appropriate strategy for the organization.

2.2. Approaches to BI

Bordeleau and others (2020) indicate that business intelligence was launched as a result of the development of decision support systems (DSS) that appeared in the sixties of the last century and reached its climax during the mid-eighties as they are business models based on technology in decision-making and the development of organizational performance. In 1989, Howard Dresner, a Gartner analyst, suggested that business intelligence is among the systems that contribute to creating an optimal

use of data analysis, and that increasing the volume of large data requires tools to reach decisions based on data analysis, utilization, processing and providing information visual, easy to understand and share. From here, business intelligence systems have methods of interrelationship with each other that constitute the basic concept that leads to business integration that can achieve a decision that positively affects the performance of organizations, these approaches included (Ahmad et al, 2020; Bordeleau et al, 2018; Howson et al, 2018; Rikhardsson and Yigitbasioglu, 2018; Božič and Dimovski, 2019; Araz et al, 2020; Torres et al, 2018; Hashem, 2016):

- **Strategic approach**

Strategic business intelligence is related to creating reports from an analytical data source or a huge data warehouse, and works to support the activities, procedures and work of the organization by providing measures for an activity or process, providing context for data related to this activity, the mechanism for achieving the goal and its possibility, in addition to providing strategic information that predicts and defines goals and a mechanism for directing efforts towards them.

Strategic business intelligence revolves around processing, collecting and storing big data, processing data and presenting it as information, identifying drivers for reaching the goal, and helping provide answers to questions that may arise during the work.

Among the questions that strategic business intelligence answers are the most valuable customers of the organization, the most likely customers to buy, the most investable areas, the best price for products or services, and what is the cost associated with reaching a larger customer base.

- **Analytical approach**

Analytical Business Intelligence is a comprehensive approach to a group of applications and infrastructure that provides best practices for accurate and reliable big data analysis, and Analytical Business Intelligence can provide organizations with processed information out of big data that helps in the appropriate decision-making process in a business context by processing current and previous data and comparing them and showing the similarities and differences between them, and analytical business intelligence can provide tools and standards that help the organization to perform better than its competitors Based on efficiency and smoothness.

- **Operational approach**

The operational approach in business intelligence is usually related to the reporting of data source and transactions in all its forms within an organization and during its activities, i.e. it analyzes the validity and consistency of business activities and transactions, their ability to reach strategic goals, as well as their ability to support decision-making processes.

In general, operational business intelligence is related to the control of organizational processes and its ability to provide sensitive and relevant information to the business of the organization, and this includes front line employees who deal with consumers as well as the departments operating within the organization. Operational BI outcomes may include billing, meeting schedules, receipts, shipping documents, financial statements, and marketing information lists.

2.3. Big data and performance

Before defining big data, it is necessary to clarify that data is the raw image of information before the process of sorting, analysis and processing, and the organization cannot benefit from the data unless it is processed and converted into information (Sardi et al, 2020). Sena et al (2019) indicates that data appears in several forms, it is either structured data that appears organized in the form of tables or graphics, or unstructured data, which is data that is not processed and cannot be read or shared, and semi-structured data, which is In the form of databases or images tables.

As for big data, it is a set of data of a huge size that cannot be processed using traditional databases such as sharing, transfer, processing and storage. Rather, it needs advanced tools and devices capable of processing huge data (Ghasemaghaei and Calic, 2020). Batistič and van der Laken (2019) defined big data as large, diversified and fast-flowing information assets that require reliance in their processing on innovative technological methods for decision-making. Arena and Pau (2020) defined big data as sets of data are represented by many characteristics, including large size, speed, diversity, and can only be benefited from or processed by relying on advanced and sophisticated technology

The importance of big data and its relationship to the performance of organizations and business intelligence stems from the possibility of converting it into information that is easy to read and share in order to be used for decision-making purposes related to the performance of the organization (Mikalef et al, 2019). Also, big data at the level of the business environment is characterized by the possibility of collecting, analyzing, converting to different graphics and patterns, which would help in decision-making (Akhtar et al, 2019; Hashem et al., 2022).

Big data and business intelligence share the idea that business intelligence contributes to organizing and analyzing big data and presenting it in an understandable form that facilitates its sharing and thus facilitates the process of making strategic decisions. It also helps to update financial and non-financial data, which leads to more illuminated decisions (Bajari et al, 2019).

Examples of big data known to the world include WhatsApp, which serves more than one billion people and circulates more than 42 billion messages and approximately 1.6 billion images on a daily basis, as well as Facebook deals with more than one billion images and videos daily, and Google, which handles nearly 100 billion searches per month.

In addition, big data has greatly contributed to the benefit of organizations, as Wal-Mart of America was able to improve its search engines by 10-15%, and the American health sector used big data analysis techniques and was able to achieve an annual surplus of 300 million from by cutting costs by 8%.

2.4. Sources of big data

Willems et al (2019) and Woo et al (2020) indicated that big data results from different sources not only one source, and that's what makes it big in volume and size. However, possible sources of big data include the following:

- Operation and management of various governmental or non-governmental programs such as medical records, online purchases, insurance and various banks
- Credit card transactions, e-payment
- Climate and satellite imaging sensors
- Monitoring and tracking devices from smart phones and surveillance cameras
- Search engines and web pages
- Social media and comments

2.5. Organizational performance

Performance is seen as the common denominator of the efforts of employees working in organizations through organizational practices and administrative decisions that are in the interest of the performance of the organization, and performance was previously associated with financial performance, but today it is associated with the performance of the organization at the market level, market share, competitiveness, Employee satisfaction and consumer satisfaction (Anwar and Abdullah, 2021).

George et al (2019) define organizational performance as the organization's ability to reach its goals set in its strategy, that is, the organization's ability to reach long-term goals. Lasater et al (2019) saw it as organizational outcome ability to make optimal use of the resources available to it and directing them towards achieving the planned goals. While Abubakar et al (2019) and Rehman et al (2019) saw it as the desired output or to be achieved by the organization.

3. Hypotheses development

Vallurupalli and Bose (2018) confirm that organizations have increased their reliance on information technology in measuring performance, and the spread of business intelligence has greatly contributed to the increase in interest in performance measurement. The researchers chose one of the largest Indian organizations to demonstrate the impact of operational approach of business intelligence on improving performance by controlling its measurement systems. The results of the study indicated that the operational approach of business intelligence was able to provide

the basis for successful planning, effective implementation based on choosing the right decision and based on business intelligence in improving the foundations of performance management.

Caseiro and Coelho (2019) proposed in their study a model to determine the impact of business intelligence on performance and the indirect effects of business intelligence such as learning and innovation. (228) start-up companies were selected in several European countries, and based on structural equation modeling, the study came to the conclusion that there are positive effects of business intelligence and its capabilities on the performance of organizations by stimulating network learning and innovation, which leads to better performance, And network learning resulting from business intelligence was one of the most impactful results on performance.

In the study of Nithya and Kiruthika (2021), the researchers tried to measure the impact of business intelligence on the performance of financial organizations (banks), the study reviewed the previous literature, and came to the conclusion that the big data that is processed through business intelligence approaches would enhance the foundations of performance management by providing processed and reliable information that is able to analyze the business environment, clarify the relationship between the bank and customers, in addition to facilitating access to sound decision-making foundations that lead performance towards excellence.

4. Research Methodology

4.1. Methodological approach

Current study adopted the quantitative approach in order to collect the primary data, as the quantitative method was chosen because of the possibility of adopting a large sample, and collecting larger primary data, thus stabilizing the phenomenon and facilitating the possibility of reading it .Quantitative approach in academic research is known to be positivist in a philosophical perspective, meaning that a quantitative positivist research is based on the fact that real knowledge is knowledge and data derived from sensory experience and logical and mathematical treatments.

4.2. Population and sample

The study population was general managers, executive managers and operational managers of Jordanian organization operating in Jordan during the fiscal year 2021-2022. Researcher contacted a group of Jordanian organizations within different fields for the sake of gaining permission to apply the study on their employees. After communicating with these organization, a convenient sample of (150) managers was selected for the application process and the collection of primary data.

4.3. Tool of study

A questionnaire was adopted as the main tool for data collection. The questionnaire consisted of two parts. The first part dealt with the demographic information of the

sample members, while the second part dealt with paragraphs that measure the variables of figure 1 presented previously according to the table below:

Table 1: Distribution of statements according to variables.

Variable	# of Statements
BI Initiatives	
Strategic	6
Analytical	5
Operational	5
Big Data	5
Organizational performance	8

In line with the health precautions of COVID 19 that were based on social distancing, the questionnaire was uploaded to Google Forms and the link was sent via e-mail to the study sample for the purpose of filling out the questionnaire. The data collection process continued for 4 consecutive weeks, after which an excel file containing the responses of the sample members was withdrawn for the purposes of analysis, and (98) correctly filled out questionnaires were used for analysis which indicated a response rate of 65.3%.

4.4. Data screening and analysis

SPSS was relied on for the purposes of classification, reading, and analysis of the data collected, and the reliability and consistency of the study tool through measuring Cronbach's alpha which appeared that alpha= 0.930ensuring the consistency of the study tool.

Other statistical tests were used, including:

- Frequencies and percentages
- Mean and standard deviation
- Multiple regression
- Linear regression

5. Results and Discussion

5.1. Demographic results

Table 2 below presented descriptive statistics of sample according to their demographic information. It appeared that majority of sample were males forming 68.4% of total sample. Their experience in the field ranged between 10 – 13 years forming 40.8% and they held a degree of PhD forming 62.2% of total sample.

Table 2: Sample distribution according to demographics.

		f	%
Gender			
	Male	67	68.4
	Female	31	31.6
Education			
	BA	13	13.3
	MA	24	24.5
	PhD	61	62.2
Experience			
	2-5	17	17.3
	6-9	36	36.7
	10-13	40	40.8
	+14	5	5.1
	Total	98	100.0

5.2. Questionnaire analysis

Analyzing tendencies and orientations of sample responses to questionnaire reported that individuals had positive attitudes towards all statements of questionnaire as their mean was higher than mean of scale 3.00. Comparing between statements indicated that "Big data presents evidence-based decision making that enhances performance" was the highest positively answered statements 4.20/5.00 while "It has the ability to enhance decision making process in the right place" was the lowest answered statement 3.57/5.00 but still positive given that it was higher than mean of scale.

Going more general and looking to variables of study, it was seen that big data and the analytical approach had the highest mean 4.01/5.00 while strategic approach scored the lowest mean of 3.86/5.00 but still positive.

Table 3: Descriptive statistics.

	$\bar{x}$	σ
Strategic approach is determined to drive organizational performance as a whole	3.67	1.01
Strategic approach gives insights to department which produce and deliver products and services	3.74	1.27
It guarantees a good level of collaboration between management and department	3.97	.94
Strategic approach appears as a strategy map	3.87	1.06
Strategy in BI is used to communicate the strategy in the form of measurable goals	4.19	.93
strategic BI sets the foundation in the form of key performance metrics,	3.71	1.07
Strategic	**3.86**	**.74**
BI presents analytics for customer satisfaction scores, market share, profit margins, or overhead costs	3.97	.95

Analytics in BI gives red alarms for zones that aren't functioning well	4.00	.91
analytical BI is employed to identify the source of a problem once it has been uncovered	4.12	.89
Tools like analytic dashboards, OLAP, predictive analytics, and ad hoc queries are utilized to determine the location or cause of a major problem	4.00	.91
Through analytical BI organizations can investigate the factors that impact business performance from many different angles.	3.96	1.06
Analytical	**4.01**	**.80**
Results obtained from analytical BI activities drive operational initiatives	4.30	.95
Operational business intelligence facilitates the kind of day-to-day decision-making that happens at the lower levels of an organization	3.82	1.14
Operational business intelligence enables the attainment of strategic goals.	4.01	1.06
Operational BI help to accelerate processes	3.81	1.07
It has the ability to enhance decision making process in the right place	3.57	1.02
Operational	**3.90**	**.65**
business intelligence (BI) and big data analytics are often used interchangeably as a source of information for decision makers	3.86	.90
Big data gather, store, analyze and report on data to help businesses make better decisions	3.85	.90
Transforming big data into information facilitate better decision making	4.16	.76
Big data presents evidence-based decision making that enhances performance	4.20	.77
With big data, better fault reporting can be made for better decision making that leads to better performance	3.97	.92
Big Data	**4.01**	**.60**
Business intelligence systems increase organizational efficiency	4.12	.86
Data warehouses in BI enhance data-based decision making	4.18	.82
With BI there would be a space to improve customer experience	4.00	.99
Customer satisfaction is more attainable through BI	4.09	.73
Organizations know their market and performance through business intelligence and can strategically position themselves for more competitive advantage	3.78	.98
BI is known to improve market intelligence	4.09	.87

Organization have multiple business models with BI	4.14	.86
There is a way to have a strong sales strategies with BI	4.12	.75
Organizational Performance	**4.07**	**.58**

5.3. Hypotheses testing

Table 4: H1 Testing.

Coefficients								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	R	R Square
		B	Std. Error	Beta				
1	(Constant)	1.740	.279		6.235	.000	.664[a]	.440
	Strategic	.272	.087	.351	3.144	.002		
	Analytical	.002	.110	.003	.019	.985		
	Operational	.325	.143	.363	2.268	.026		

With the use of multiple regressions, we tested the hypothesis that was presented before; the outcome, which was r = 0.664, indicates that there is a strong relationship between the independent and dependent variables. In addition to this, it has been discovered that the independent variables are responsible for 44% of the variance in the variable that is the subject of the current investigation (the dependent variable). It was also demonstrated that the F value is significant at the level of 0.05, which shows that the BI initiatives positively enhance organizational performance. This was shown in the previous paragraph.

Table 5: H1 sub-hypotheses testing.

H1a: Strategic initiative positively enhance organizational performance								
Coefficients								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	R	R Square
		B	Std. Error	Beta				
1	(Constant)	2.231	.246		9.058	.000	.612[a]	.375
	Strategic	.475	.063	.612	7.585	.000		
H1b: Analytical initiative positively enhance organizational performance								
Coefficients								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	R	R Square
		B	Std. Error	Beta				
1	(Constant)	2.469	.254		9.738	.000	.548[a]	.301
	Analytical	.398	.062	.548	6.424	.000		
H1c: Operational initiative positively enhance organizational performance								
Coefficients								

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.		
		B	Std. Error	Beta			R	R Square
1	(Constant)	1.918	.284		6.756	.000	.616[a]	.380
	Operational	.551	.072	.616	7.667	.000		

As it was read from table 5 above, sub-hypotheses of the first hypothesis were tested, for H1a it was seen that linear regression was r = 0.612 and indicated that there was a strong relationship between the independent and dependent variables. In addition to this, it had been discovered that the independent variables were responsible for **37.5%** of the variance in the variable that is the subject of the current investigation. It was also demonstrated that the F value was significant at the level of 0.05, which showed that the Strategic initiative positively enhance organizational performance.

Testing H1b also indicated that linear regression was r = 0.548, indicated that there was a medium relationship between the independent and dependent variables. In addition to this, it has been discovered that the independent variables were responsible for **30.1%** of the variance in the variable that is the subject of the current investigation. F value was significant at the level of 0.05, which showed that the Analytical initiative positively enhance organizational performance.

H1c was also tested with linear regression and it was r = 0.616, indicated that there was a strong relationship between the independent and dependent variables. In addition to this, it has been discovered that the independent variables were responsible for **38%** of the variance in the variable that is the subject of the current investigation. It was also demonstrated that the F value was significant at the level of 0.05, which showed that the Operational initiative positively enhance organizational performance.

Table 6: Testing H2.

H2: Big data positively enhance organizational performance								
Coefficients								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	R	R Square
		B	Std. Error	Beta				
1	(Constant)	1.317	.280		4.700	.000	.712[a]	.506
	Big	.686	.069	.712	9.922	.000		

As demonstrated in table 6 above, testing H2 was done depending on linear regression, it was seen that r = 0.712, indicated that there was a strong relationship between the independent and dependent variables. In addition to this, it has been discovered that the independent variables were responsible for **50.6%** of the variance

in the variable that is the subject of the current investigation. It was also demonstrated that the F value is significant at the level of 0.05, which shows that the big data initiative positively enhance organizational performance.

Table 7: Testing H3.

H3: BI initiatives and Big data positively enhance organizational performance								
Coefficients								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.		
		B	Std. Error	Beta			R	R Square
1	(Constant)	.896	.279		3.211	.002	.770[a]	.592
	Strategic	.155	.077	.200	2.020	.046		
	Analytical	.029	.094	.040	.311	.756		
	Operational	.143	.127	.160	1.127	.263		
	Big	.473	.080	.491	5.885	.000		

With the use of multiple regression r = 0.77 indicated that there was a strong relationship between the independent and dependent variables. In addition to this, it has been discovered that the independent variables were responsible for **59.2%** of the variance in the variable that is the subject of the current investigation. It was also demonstrated that the F value was significant at the level of 0.05, which showed that the BI initiatives and Big data positively enhance organizational performance.

5.4. Discussion

Current study hypothesized that business intelligence BI and big data have a significant impact on the performance of organizations, reaching that aim was done through utilizing approaches of BI (Strategic, Analytical and Operational) and how they positively impact business performance along with big data management. The quantitative approach has been adopted and a questionnaire was distributed on a sample of (98) general, executive and operational managers within Jordanian organization operating in Jordan within the fiscal year 2021-2022. Results of analysis were able to reach following findings:

- Study proved that BI and big data management are able to positively influence organizational performance with an R value = **0.664** and a strong relationship between the BI and organizational performance.
- As for BI approaches, it was revealed that operational approach was most influential on business performance with an R value = **0.616** and a variance of **38%** indicating that there was a strong relationship between BI and organizational performance
- In the 2nd rank came strategic approach which presented an R value **r = 0.612** and a variance of **37.5%**

- The least influential approach was analytical approach which indicated a variance of **30.1%** and an R value **r = 0.548** but still influential
- Testing the hypothesis of big data positively enhance organizational performance was accepted and it was seen that it scored an **R= 0.712** with a variance of **50.6%**.
- As for the last hypothesis, BI initiatives and big data positively enhance organizational performance was accepted with **r = 0.77** and a variance of **59.2%**

The study proved through previous literature and analysis that there is an impact of business intelligence and big data on organizational performance through the direct and positive impact on decision-making processes within the organization, as it contributed significantly to directing decision-making towards the appropriate areas, which had its impact on The performance is significantly positive, and the study also found that the positive effects of business intelligence are represented in increasing the efficiency of operational processes, giving the organization an insight into the behavior of customers and their shopping patterns, and that business intelligence in cooperation with big data provided the organization with insight into financial performance through data related to sales and marketing which agreed with Vallurupalli and Bose (2018).

In addition, the study has proven the ability of business intelligence to provide clear standards based on past and current huge data, which helped provide the organization with instant alerts related to customer problems and satisfaction, and provided actual analyzes that can be shared across departments.

The study proved that there is a great importance of big data and business intelligence in increasing the competitiveness of the organization, as organizations benefit from big data in cooperation with business intelligence is able to reach a higher stage of understanding their customers by helping to make appropriate decisions and more effectively, as It makes more use of existing data as it can increase efficiency and reduce losses matching what came along with Nithya and Kiruthika (2021.

According to the results of the study, business intelligence was able to facilitate and enhance the speed and efficiency of decision-making more, and it also contributed to the statement of the causal relationship between business intelligence and the performance of organizations agreeing with Caseiro and Coelho (2019).

Business intelligence, specifically the operational approach, was able to offer a rich set of tools and methods that enhanced the organization's ability to control the challenges caused by the competitive environment in the business, and the link of business intelligence with big data provided a common understanding for all parties of the organization such as support for big data, storage and distributing, accessing, and presenting information in an understandable and shareable manner. In addition, the relationship between big data and business intelligence can achieve complete

transparency of operations, which helps support organizations to respond to various developments.

The study proved, through the analysis of the initial data, that business intelligence contributed significantly to controlling the huge amount of data that is focused on the organization, which leads to directing a strategy and a complete and clear mechanism about the nature of this data and the mechanism for benefiting from it, leading to the stage of assistance in establishing what It is known today as Data Warehouse or DWH, which helps greatly in organizing, classifying, arranging and processing data and information in order to use it to make appropriate decisions.

The study also proved that BI and its direct impact on big data contributed to increasing the organization's profits due to maximizing productivity and giving the organization a higher competitive advantage and a stronger market position, given that BI contributes to placing the organization within the circle of information and knowledge about what is going on in the market, and the conditions of competitors, and their market share.

On the other hand, it was found through the results of the study that there is a significant impact of BI and dealing with big data in developing the organization's performance through the continuous development and improvement that BI imposes on organizations, which leads to an increase in the organization's ability to deal with fluctuations and market changes in a better way. This would contribute to enhancing the organization's ability to reduce risks and obstacles that may slow down the development of the organization's performance and be an obstacle to achieving the desired goals.

6. Conclusion

Managing, measuring and developing performance drives the organization to realize the importance of an accurate understanding of past and current events that continue to evolve, and organizations will be obligated to continue investing in their business intelligence solutions, and will rely more on advanced analytics to predict the future. Overall, Gartner reports that global profits in the business intelligence (BI) and analytics software market reached $18.3 billion in 2017 with an increase of 7.3% compared to 2016, and by the end of 2020, business intelligence markets had grown to 22.8 billion dollar.

Modern business intelligence and analytics continue to expand more rapidly than the entire market, which is offsetting lower spending on strategic business intelligence. After all, many CEOs are used to seeing business intelligence as a buzzword, but these days it is seen as a catalyst in every success story in most businesses; because it enables them to make smart, data-driven decisions and thus improve the performance of organizations.

Current study was limited to Jordanian organizations operating in Jordan during the fiscal year 2021-2022, and variables of study were limited to business intelligence and big data that are reached through the high dependency of organizations on technology and IT in managing organizational operations.

Based on previously presented discussion and conclusion, current study recommended:

- Pay some attention to the business intelligence capabilities of startups
- Analyze of the impact of network learning on the performance of financial organizations
- Automate routine analytics tasks, improve processes, reduce inefficiencies, and increase productivity.

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