The Effect of the Application of Strategic Intelligence and its Relationship with Cyber Risk Management during the COVID-19 Pandemic Period

Ali Matar[a*], Salahaldeen Nsour[b], Amal Yousef[c], Seema AbuKaraki[d],
[a]School of Business, Jadara University, Irbid, Jordan, [b,d]Jordan Phosphate Mines Co JPMC, Al, Jordan, [c]School of Business, Emirates College of Technology, UAE, Email: [a*]amatar@jadara.edu.jo

The study aimed to identify the impact of the application of strategic intelligence on the cyber risk management in Jordanian mining companies; five dimensions of strategic intelligence were identified, which are: foresight, systems thinking, future vision (strategic), partnership, and motivation. To measure its impact on cyber risk management, a questionnaire was designed to measure the variables of the study and was distributed to Jordanian mining companies; then the results were analysed during the Covid-19 pandemic period. Some of the most important results of the study were that there is an application of strategic intelligence in Jordanian mining companies on average of 70.8%. The most common application was the partnership with high implementation and relative weight of 78.1%. The lowest application of motivation with an average application rate, was 64%. It was noted that there is a focus by the management of Jordanian mining companies on partnership as a way to developed the company and achieve its vision and objectives and also focus on sharing the decision with each other or with other companies to get stronger. The study provides some implications to decision-makers to help them to rethink the information collected to see its current or future implications on the company. The study also recommended to senior management in the Jordanian mining companies to extrapolate the future to develop its strategy in the long term and to have a vision with holistic dimensions that determine the direction of their business.

Introduction

Security is the basic pillar of society, so it is inconceivable to grow any activity away from its realisation, whether it is at the technical level or at the legal level. With the emergence of the information society and cyberspace, security has transformed into one of the services sector, which is an added value and a mainstay for the activities of governments and individuals alike. Contemporary organisations strive to achieve success and excellence in a fiercely competitive environment, where they search for ways to succeed.

Strategic intelligence is associated with a distinct type of mental capacity needed by the director, or the leader and strategic thinker, which enables him to think in a holistic manner about the future of the organisation and confront situations of uncertainty and scarcity of information and its limitations. Strategic intelligence assists the organisation in achieving its long-term goals, and enables leaders to build assumptions and adapt to external and internal changes.

Strategic intelligence is a comprehensive way of thinking about the future of the organisation, facing problems and adapting to the environment. Many organisations have started to employ this type of intelligence, and the level of effectiveness of the decisions taken was one of the reasons for the success or failure of many organisations, through the disposal of their capabilities. Failure to apply this type of intelligence by business organisations may lead to missing many opportunities, or is a reason for its low levels of performance, and in a way that leads the beneficiaries of the transition to other organisations and the spread of feelings of dissatisfaction among the beneficiaries; so the problem of the study stems from the lack of awareness regarding the application of strategic intelligence in Jordanian mining companies, and its effect on the effectiveness of administrative decisions, as it is summarised in an attempt to answer the following main questions:

1. What is the effect of strategic intelligence on the effectiveness of cyber risk management?
2. What are the perceptions of workers in Jordanian mining companies of the level of strategic intelligence?
3. What are the perceptions of workers in Jordanian mining companies on the level of application of cyber risk management?
4. What is the effect of applying strategic intelligence and its relationship to managing cyber risks in Jordanian mining companies?

5. What is the effect of the prospecting application and its relationship to managing the cyber risks of Jordanian mining companies?
6. What is the effect of applying systems thinking and its relationship to managing cyber risks for Jordanian mining companies?
7. What is the effect of applying the future vision (strategic) and its relationship with managing the cyber risks of Jordanian mining companies?
8. What is the effect of implementing the partnership and its relationship with managing the cyber risks of Jordanian mining companies?
9. What is the effect of motivation application and its relationship to managing the cyber risks of Jordanian mining companies?

Therefore, the problem of the study is summarised by measuring the impact of the application of strategic intelligence and its relationship with managing cyber risks in Jordanian mining companies.

The main objectives of this study are: First, to manage cyber risks, strategic intelligence, and to answer what are its dimensions, elements, and impact on society, in light of the Coronavirus (COVID-19) pandemic circumstances. Second, to clarify the extent of commitment of Jordanian mining companies to implement cyber risk management. Third, to show the extent of the impact of the implementation of activities related to strategic intelligence (forward-thinking, systems thinking, future vision, partnership and motivation) and its relationship to managing cyber risks in Jordanian mining companies.

The importance of the study stems from the importance given to the issue of strategic intelligence and managing cyber risks, which is one of the important challenges for the organisations' departments in light of the intensification of competition in the contemporary technological environment. The role that strategic intelligence plays is for strategic leaders to seek to achieve the company's goals to reach the right decision at the right time. The study introduces the components of strategic intelligence and its dimensions, and its relationship with managing cyber risks and assisting decision-makers in managing their businesses. On the other hand, there is the scientific importance of reviewing the study literature for the latest scientific studies related to the variables of the study, as this study can represent an important reference for academics and researchers due to the lack of studies that dealt with this topic. The rest of this paper is structured as follows: Section 2 presents a literature review. The data and methodology are introduced in Section 3. Section 4 discusses the results of the study. Finally, Section 5 presents the conclusion, implications and recommendations.

Literature Review

Al-Awayshah, M, (2019) revealed the effect of strategic intelligence in organisational effectiveness through organisational strength as an intermediate variable with its dimensions (structural strength, ownership strength, experience power) in the Jordanian Royal Airline Company. The results indicated that there is a positive impact of strategic intelligence represented by its dimensions (forward-looking, future vision, systems thinking, partnership, motivation) in the organisational strength, and there is a positive impact of the organisational strength represented by its five dimensions in the organisational strength, and there is a positive impact of the organisational strength.

Banga, A. (2019) examined the importance of cyber risks management and sheds light on electronic risks and attacks and their economic effects on the GCC Countries and the need to confront economic electronic threats and review strategic plans for electronic security. The study concluded that the GCC countries face some types of cyber attacks on economic activities, At the enterprise level, cyber security must be included in the enterprise's risk management strategy, and the study recommended the necessity and speed of adopting modern technology.

Al Najjar, G. (2017) identified the concept of risk management as well as to identify the types of risks facing entrepreneurial projects in Gaza. The study concluded that risk management contributed to achieving a competitive advantage for pilot projects, and the study recommended strengthening risk management skills by providing an element of training in the field of risk management and administrative and financial fields.

Alnoukari et al., (2016) examined the relationships between Business Intelligence, and Competitive Intelligence with Strategic Intelligence. The study explained the impact of Business Intelligence on Corporate Performance Management, Operational Business Process, Competitive Intelligence, and Strategic Intelligence.

Al-Saadi, (2015) highlighted the role of information systems technology in organising risks, showing risks within the work environment and administrative organisation and showing the role of information technology in risk management by controlling and reducing risks. The study concluded that the presence of information technology in the management of risks in the work environment was important as was the necessity of having an interest in it to protect software and information from penetrations and piracy.

Mekkrache, F. (2015) examined the impact of management with intelligence on the strategic direction of the Algerian airline company. The results found that the Algerian Airlines has an intelligent management and strategic direction, and that the intelligent management has a

positive impact on the strategic direction. Among the most important recommendations, the company should use all the tools and methods provided to it by strategic intelligence, as it overcomes the weaknesses in its internal environment, as well as overcoming the threats arising from the external environment.

Nidal Abdul Hadi Imran, (2015) determined the importance that Asiacell Communications attaches to the strategic intelligence issue in terms of being forward-looking, having organised thinking, future vision, partnership, motivation and intuition, and its relationship to creativity. The sample was deliberately included in the survey with 39 experts in the company. It reached a set of conclusions that showed that strategic intelligence with all its components had an effect on the creativity of the researched company.

Seitovirta, L., (2011) identified the role of strategic intelligence services in participating in decision-making, by showing how decisions are taken in the institutions under study. The study was conducted on a sample of 14 directors, and the researcher followed the descriptive analytical approach, and interviews and observations were used, in addition to the internal documents of the institution and its publications. The results suggested that strategic intelligence helps managers draw a picture about the business environment, and compares this image with the work of companies operating in the same sector.

Pellissier, R. (2011) and Svensson et al., (2011) examined the strategic intelligence as a tool for long-term strategic management in the insurance sector in South Africa, as this study aimed to determine the current role that strategic intelligence plays in the long-term strategy of insurance companies that are free of insurance. The results showed that organisations have not yet fully embraced a model of strategic intelligence system. One of the most important recommendations of the study is that organisations should use strategic intelligence methods and tools to support internal and external early warning systems.

Data and Methodology

The independent variable (strategic intelligence): It consists of foresight, systems thinking, future vision (strategy), partnership, and motivation. The dependent variable is represented by managing cyber risks. The researchers followed the descriptive approach, and two types of data collection sources. The model specification for this study is formulated as follows:

$$CRM = \beta_0 + \delta FR_t + \delta ST_t + \delta P_t + \delta M_t + \varepsilon_t$$

Where, CRM: is the cybersecurtiy risk management; B is the constant term; FR is the foresight; p is the partnership; m: is the motivation; and the last abbreviation belongs to the error term.

The study community consists of managers, heads of departments and employees working in the departments of risk management, information technology and human resources in Jordanian mining companies. As for the study sample, it consists of employees working in the departments of risk management, information technology and human resources in Jordanian mining companies.

Research hypotheses can be formulated as follows:

Ho1- The first main hypothesis: There is no statistically significant effect at the level of α≤0.05 of strategic intelligence in its dimensions: forward-looking, systems thinking, future vision, partnership, and motivation, and its relationship to managing cyber risks in Jordanian mining companies. The following sub-hypotheses are derived:

Ho1-1 - There is no statistically significant effect at the level of significance (α≤0.05) of the foresight for strategic intelligence and its relationship to managing cyber risks in Jordanian mining companies.

Ho1-2 - There is no statistically significant effect at the level of significance (α≤0.05) after the systems thinking and its relationship to managing cyber risks in Jordanian mining companies

Ho1-3 - There is no statistically significant effect at the level of significance (α≤0.05) for the dimension of the future vision and its relationship to managing cyber risks in Jordanian mining companies.

Ho1-4 - There is no statistically significant effect at the level of significance (α≤0.05) of the partnership dimension and its relationship to managing cyber risks in Jordanian mining companies

Ho1-5 - There is no statistically significant effect at the level of significance (α≤0.05) of the motivation dimension and its relationship to managing cyber risks in Jordanian mining companies.

Results and Discussion

The internal consistency coefficient Cronbach's Alpha was calculated, with the results as follows:

Table 1: Values of the internal consistency coefficient for the study tool paragraphs

No.	Variables	Cronbach's Alpha
1	Foresight	0.608
2	Systems thinking	0.600
3	Future vision (strategy)	0.649
4	Partnership	0.748
5	Motivation	0.812
	All Variables	0.887

The values of the internal consistency factor of the Cronbach alpha for the study tool paragraphs ranged between 0.600 - 0.812, and therefore all values are greater than 0.60. This is an indication of the consistency between the paragraphs of the study tool, the reliability of the study tool and the ability to rely on it for statistical analysis.

The description includes the identifying and demographic characteristics of the individuals in the study sample, namely: gender, age, educational qualification. In order to describe the characteristics of the study sample, iterations and percentages of the demographic variables were found for the members of the study sample, as follows:

Table No 2: Description of the characteristics of the study sample

Variables	Characteristics	Representatives	Observations	Percentages
1	Sex	Male	22	68.8%
		Female	10	31.2%
2	Age	< 30	2	6.3%
		30-40	6	18.7%
		40-50	16	50%
		> 50	8	25%
3	Qualification	High School	0	0
		Bachelor	16	50%
		Master	8	25%
		PhD	8	25%

Table (2) reveals that the male category was the most (68.8%), followed by the female (31.2%). Besides, it is clear that the category (from 40 - less than 50 years) is the largest category with a percentage of 50%, which means that most of the sample members have great experience and can rely on the results of the research. The category of Bachelor is the largest category with a percentage of 50%, which means that the respondents have the culture and knowledge to answer the questions.

To identify the attitudes of the sample individuals on the variables of the study model by relying on the data collected on the application of strategic intelligence and its relationship to managing cyber risks in Jordanian mining companies, arithmetic averages, standard deviations, rank, level of application, and the relative importance of each paragraph were used, and the results were as follows: Strategic Intelligence Questions Analysis: Firstly: Foresight:

Table 3: Arithmetic averages, standard deviations, and the level of application for forward-looking

No.	Status	Mean	Stdev.	Proportional Percentage	Grade	Application level
1	The company tracks changes in the external environment and its implications for decision-making in the company.	3.625	0.492	%72.50	3	Medium
2	Company decision-makers rethink the information gathered to know its current or future implications for the company.	3.688	0.592	%73.75	2	High
3	The company takes advantage of the capabilities available in dealing with future events.	3.500	0.718	%70.00	4	Medium
4	The company is extrapolating the future to develop its strategy in the long run.	3.375	0.942	%67.50	5	Medium
5	Looking ahead (foresight) to the future helps the company cope with the complexities it can face.	3.938	0.564	%78.75	1	High
General Scale		**3.625**	**0.415**	**%72.50**		Medium

Table (3) shows that the level of the general scale of foresight is an average, with a general average (3.625) and a relative weight (72.50%) and a standard deviation of (0.415), and the arithmetic averages ranged between 3.375-3.938. The above results indicate that the application of prospecting in Jordanian mining companies is generally average, and mining companies in Jordan should pay more attention to extrapolating the future company to develop its strategy in the long run and take advantage of the capabilities available in dealing with future events.

Table 4: Arithmetic averages, standard deviations and the level of application of systems thinking.

No.	Status	Mean	Stdev.	Proportional Percentage	Grade	Application level
1	Decision-makers study combined ideas rather than studying them individually according to the systems approach	3.313	0.693	%66.25	3	Medium
2	The company works to emerge as a coherent and consistent system	3.813	0.397	%76.25	1	High
3	Systems thinking helps the company to see the events surrounding them more clearly.	3.563	0.716	%71.25	2	Medium
General Scale		**3.563**	**0.410**	**%71.25**		Medium

Table (4) reveals that the level of the general scale of systems thinking is average, as the general average reached is 3.563 with a relative weight of 71.25%, with a standard deviation of 0.410, and the arithmetic averages ranged between 3.313-3.813.The researchers believe that the application of systems thinking in Jordanian mining companies is generally average; the Jordanian mining companies' administrations need to take further measures to increase the ability to integrate the various elements, analyse them and understand how they interact with each other to form a clear picture of the factors that are dealt with to reach the company's goals especially with the recent critical situation with Covid-19.

Table 5: Arithmetic averages, standard deviations, and the level of application for the future (strategic) vision.

No.	Status	Mean	Stdev.	Proportional Percentage	Grade	Application level
1	The company has a vision of holistic dimensions that determine the direction of its business	3.125	0.871	%62.50	4	Medium
2	The company unifies the efforts of its employees to achieve its goals	3.563	0.619	%71.25	1	Medium
3	The company has the ability to comprehensively	3.500	0.508	%70.00	2	

No.	Status	Mean	Stdev.	Proportional Percentage	Grade	Application level
	visualise the future status of the institution and turn it into a reality					Medium
4	Company officials have the ability to persuade employees of its strategic vision	3.438	0.716	%68.75	3	Medium
General Scale		**3.406**	**0.483**	**%68.13**		Medium

Table (5) reveals that the general scale level of the future vision (the strategy) is average, as the general average of 3.406 and a relative weight of 8.13% and a standard deviation of 0.483, and the arithmetic averages ranged between 3.125-3.563.

Table No 6: Arithmetic averages, standard deviations and the level of application of the partnership.

No.	Status	Mean	Stdev.	Proportional Percentage	Grade	Application level
1	Partnership is a method that benefits the development of the company and realises its vision and goals.	4.125	0.609	%82.50	1	High
2	The decision is strengthened when companies participate with each other and / or with other organisations in making it	4.000	0.508	%80	2	High
3	The company seeks to establish partnerships with various sectors of society to benefit from its experience and expertise	3.813	0.738	%76.25	3	High
4	The company holds multiple local and regional partnerships to improve its financial position	3.688	1.120	%73.75	4	High
General Scale		**3.906**	**0.588**	**%78.13**		High

Table (6) shows that the general scale of the partnership is high, with a general average of 3.906 and a relative weight of 78.13% and a standard deviation of 0.588, and the arithmetic

averages ranged between 3.688-4.125. The researchers believe that the application of the partnership in strategic intelligence at a high level is an indication of the awareness of the departments of mining companies in Jordan.

Table No 7: arithmetic averages, standard deviations and the level of application of motivation

No.	Status	Mean	Stdev.	Proportional Percentage	Grade	Application level
1	The company has the ability to motivate employees to implement its vision and achieve its goals	3.688	0.693	%73.13	1	High
2	The company supports positive competition among employees to achieve more achievement by using various incentives	3.250	0.842	%65	3	Medium
3	Decision-makers strive to make each job more exciting and challenging to eliminate routine.	3.500	0.950	%70	2	Medium
4	The company has programs to train workers and develop their skills on an ongoing basis and urge them to participate in decision-making and taking responsibility	2.750	1.320	%55	5	Medium
5	Officials are creating competition among workers to motivate them to deliver more	2.813	2.030	%56.25	4	Medium
General Scale		**3.200**	**0.813**	**%64**		Medium

Table (7) shows that the general scale of motivation is an average, with a general average of 3.200 and a relative weight of 64.00% and a standard deviation of 0.813, and the arithmetic averages ranged between 2.750-3.688. The following table compares the level of implementation of strategic intelligence, as follows:

Table 8: arithmetic averages, standard deviations, and the level of application of social responsibility accounting.

No.	Status	Mean	Stdev.	Proportional Percentage	Grade	Application level
1	Foresight	3.625	%72.50	0.412	2	Medium
2	Systems thinking	3.563	%71.25	0.410	3	Medium
3	Future vision (strategy)	3.406	%68.13	0.483	4	Medium
4	Partnership	3.906	%78.13	0.588	1	High
5	Motivation	3.200	%64.00	0.813	5	Medium
General Scale		**3.540**	**%70.80**	**0.414**		Medium

Table (8) shows that the general scale of strategic intelligence is average, as the general average reached 3.540 with a standard deviation of 0.414 and a relative weight of 70.80%. Partnership came first with an arithmetic average of 3.906, a relative weight of 78.13%, a standard deviation of 0.588, and a high level of application, while motivation came in the last rank with an arithmetic average of 3.200, a relative weight of 64.00%, and a standard deviation of 0.813, and with an average application level.

Table No 9: Arithmetic averages, standard deviations, and the level of application for managing cyber risks

No.	Status	Mean	Stdev.	Proportional Percentage	Grade	Application level
1	The company meets the relevant legal and regulatory requirements	4.000	0.000	%80.00	1	High
2	The company determines the number of cyber attacks it has undergone and has tested its financial resilience	3.188	0.965	%63.75	13	Medium
3	The company performs independent certification and confirmation to place its company's cyber risks.	3.500	0.803	%70.00	8	Medium
4	The Board of Directors regularly discusses accurate, clear and enforceable information related to the	3.250	0.842	%65.00	12	

	corporate-supported cyber resilience.					Medium
5	The company prepares accident response plans that have undergone experimental testing and management level.	3.500	0.803	%70.00	8	Medium
6	The roles of the key people responsible for managing cyber risks are clear and in line with the three lines of defence	3.438	0.878	%68.75	11	Medium
7	The company has an improvement plan to ensure that the attacks fall within the agreed risk rate	3.625	0.707	%72.50	6	Medium
8	The company creates a cyber security policy in cooperation with top management to develop and maintain cyber security strategy	3.500	0.880	%70.00	8	Medium
9	The company operates the protection of the personal identification number and password for the devices, tracking them, removing them remotely or closing them remotely	3.938	0.759	%78.75	2	High
10	The company ensures that all devices use encryption products that require the startup password to protect identification number	3.653	0.801	%71.25		Medium

11	The company ensures that all employees have identifiable accounts and are approved each time.	3.938	0.564	%78.75	2	
12	A strong password on all devices is used to prevent leakage of information and not to send it via e-mail.	3.813	0.535	%76.25	4	High
13	Be careful when receiving any email and confirm it before opening.	3.688	0.931	%73.75	5	High
General Scale		**3.200**	**4.000**	**0.000**	**80.00 %**	Medium

Table (9) reveals that the general scale level for the application of cyber risk management is average, as the general average reached 3.267, a relative weight of 65.33% with a standard deviation of 0.459, and the arithmetic mean ranged between 2.867-3.733. The paragraph "The company is working to meet the relevant legal and regulatory requirements" came first with an arithmetic average of 3.733 and a relative weight of 74.67%, with a high level of application and a standard deviation of 0.583, while the paragraph was resolved "The board of directors will conduct an independent review of cyber flexibility and security for your company annually", in the last rank, with an arithmetic average of 2.867, an average application level, a relative weight of 57.33%, and a standard deviation of 0.730.

To test the suitability of the study data for linear regression analysis and parameter tests, multiple linear correlation and self-correlation have been tested.

Table 10: Correlation matrix for independent variables

	Variable	**1**	**2**	**3**	**4**	**5**
1	Foresight	1.00				
2	Systems thinking	0.653**	1.00			
3	Future vision (strategy)	0.564**	0.438*	1.00		
4	Partnership	0.543**	0.427*	0.195	1.00	
5	Motivation	0.486**	0.207	0.691**	0.520**	1.00

** Significant at the level $\alpha \leq 0.05$.

Table (9) shows that the highest correlation between the independent variables is 0.691 between the motivation and future (strategic) variables, and that all the correlation coefficient values between the other independent variables were less than 0.80); this may indicate the absence of the phenomenon of multiple linear correlation between independent variables, as the correlation coefficient values exceeding 0.80 are considered to be an indication that the sample suffers from the problem of multiple high linear correlation of the rest of the variables (Guajarati, 2004; Al-Rdaydeh et al., 2017; Matar, et al., 2018; Abuoliem et al., 2019). To ensure that the sample is free from the problem of multiple correlation, the Variance Inflation Factor (VIF) was calculated at the dimensions of the independent variable to ensure that there was no multiple linear correlation between all independent variables, and the results were as follows:

Table 11: Results of the multiple correlation test among the independent variables

Variables	Tolerance	VIF
Foresight	0.395	2.534
Systems thinking	0.452	2.211
Future vision (strategy)	0.297	3.372
Partnership	0.418	2.390
Motivation	0.290	3.449

Table (11) shows that the values of the coefficient of contrast variation were all greater than the number 1 and less than the number 10, which confirms the absence of the problem of multiple linear correlation between all variables of the independent study. The following table shows the results of the Durbin-Watson Test for the study hypotheses, as follows:

Table 12: Autocorrelation testing reults

Hypothesis	Calculated D-W	Results
H01	2.018	No Autocorrelation
H01-1	1.701	No Autocorrelation
H01-2	1.676	No Autocorrelation
H01-3	1.940	No Autocorrelation
H01-4	1.540	No Autocorrelation
H01-5	1.897	No Autocorrelation

Note that the values of D-W for the variables in all the assumptions mentioned are close to the number 2, which indicates that the data are free from the problem of self-correlation, that is, there is no correlation between the limits of random error in the regression model.

Hypothesis Testing

To test the first major hypothesis, multiple linear regression analysis was applied, and the results were as follows:

Table 13: Results of Regression for testing the effect of strategic intelligence on managing cyber risks

Dependent Variable	Model Summery			ANOVA		Coeffeicients				
	R	R²	Adjusted R²	F	Sig.	Independent Variables	B	St.error	t	Sig.
						Foresight	0.662	0.249	2.655	0.013*
						Systems thinking	0.055	0.234	0.236	0.816
Cybersecurtiy Risk Management	0.635	0.403	0.288	3.511	0.015*	Future vision (strategy)	-0.339	0.246	-1.382	0.179
						Partnership	-0.370	0.170	-2.181	0.038*
						Motivation	0.330	0.147	2.241	0.034*
						Constant	2.557	0.689	3.711	0.001*

** Significant at the level ($\alpha \leq 0.05$).

Table 13 indicates that the correlation coefficient (R = 0.635) indicates the positive relationship between the independent variables and the dependent variable, and the effect of the independent variables (strategic intelligence) on the dependent variable (cyber risk management) is a statistically significant impact.

Based on the foregoing, we reject the main hypothesis and accept the alternative hypothesis that: "There is a statistically significant effect of applying strategic intelligence in its dimensions (forward-looking, systems thinking, future vision (strategy), partnership, motivation).

H01: There is no statistically significant effect of overseeing the management of cyber risks in Jordanian mining companies

Table 14: Results of testing the impact of foresight on managing cyber risks

Dependent Variable	Model Summery			ANOVA		Coeffeicients				
	R	R²	Adjusted R²	F	Sig.	Independent Variables	*B*	St.error	T	Sig.
Cybersecurtiy Risk Management	0.478	0.238	0.212	9.346	0.005 *	Foresight	0.504	0.165	3.057	0.005*

* Significant at the level $\alpha \leq 0.05$.

Table (14) indicates that the value of the correlation coefficient is r = 0.487, and this means that there is a positive relationship between foresight and cyber risk management.

Based on the previous results, we reject the first sub-hypothesis and accept the alternative sub-hypothesis, which states: "There is a statistically significant effect of the application of forward-looking on managing cyber risks in Jordanian mining companies." The researchers believe that there is a positive relationship between the application of foresight from strategic intelligence to cyber risk management.

H01-2 The second sub-hypothesis: There is no statistically significant effect of systems thinking on managing cyber risks in Jordanian mining companies.

Table 15: Results of testing the impact of systems thinking on managing cyber risks

Dependent Variable	Model Summery			ANOVA		Coeffeicients				
	R	R²	Adjusted R²	F	Sig.	Independent Variables	*B*	St.error	T	Sig.
Cybersecurtiy Risk Management	0.215	0.046	0.014	1.454	0.237	Systems thinking	0.223	0.185	1.206	0.237

* Significant at the level ($\alpha \leq 0.05$).

Table (15) shows that the correlation coefficient value is r = 0.215, and this means that there is a positive relationship between systems thinking and cyber risk management. It turns out that the value of the coefficient of determination is r2 = 0.046, and this means that systems thinking has explained 4.6% of the variance in cyber risk management, with other factors remaining constant. It also shows that the value of F has reached 1.454 at the confidence level of Sig = 0.237, and this confirms the significance of the slope at $\alpha \leq 0.05$.

As result, we accept the second hypothesis: "There is no statistically significant effect of applying systems thinking on managing cyber risks in Jordanian mining companies." The researchers believe that there is a positive relationship between the application of systems thinking from strategic intelligence and the management of cyber risks.

H01-3 The third sub-hypothesis: There is no statistically significant effect of the future (strategic) vision on managing cyber risks in Jordanian mining companies.

Table 16: Results of testing the impact of the future (strategic) vision on managing cyber risks

Dependent Variable	Model Summery			ANOVA		Coeffeicients				
	R	R^2	Adjusted R^2	F	Sig.	Independent Variables	B	St.error	T	Sig.
Cybersecurtiy Risk Management	0.336	0.113	0.083	3.815	0.060	Future vision (strategy)	0.296	0.152	1.953	0.060

* Significant at the level ($\alpha \leq 0.05$).

Table (16) reveals that the value of the correlation coefficient is r = 0.350, and this means that there is a positive relationship between future vision (strategy) and cyber risk management. Thus, we accept the third nihilistic hypothesis, which states: "There is no statistically significant effect of applying the future (strategic) vision to managing cyber risks in Jordanian mining companies.

H01-4 Fourth Sub-Hypothesis: There is no statistically significant effect of the partnership on managing cyber risks in Jordanian mining companies

Table 17: Test results of the partnership on managing cyber risks

Dependent Variable	Model Summery			ANOVA		Coeffeicients				
	R	R^2	Adjusted R^2	F	Sig.	Independent Variables	B	St.error	t	Sig.
Cyber securtiy Risk Management	0.112	0.013	-0.020	0.382	0.541	Partnership	0.081	0.131	0.618	0.541

* Significant at the level ($\alpha \leq 0.05$).

Table (17) indicates that the value of the correlation coefficient is r = 0.112, and this means that there is a positive relationship between partnership and cyber risk management. It turns out that the value of the coefficient of determination is r2 = 0.013, and this means that the partnership has explained 1.3% of the variance in cyber risk management, with other factors remaining constant. It also shows that the value of F has reached 0.382 at the confidence level of Sig = 0.541, and this confirms the significance of the regression at the level of $\alpha \leq 0.05$.

As result, we accept the fourth sub-hypothesis. The researchers believe that there is a positive relationship between the application of the partnership from strategic intelligence and the management of cyber risks.

H01-5 Fifth Sub-Hypothesis: There is no statistically significant effect of motivation on managing cyber risks in Jordanian mining companies.

Table 18: Results of a test of motivation for managing cyber risks

Dependent Variable	Model Summery			ANOVA		Coeffeicients				
	R	R²	Adjusted R²	F	Sig.	Independent Variables	B	St.error	t	Sig.
Cybersecurtiy Risk Management	0.422	0.178	0.150	6.484	0.016*	Motivation	0.221	0.087	2.546	0.016*

* Significant at the level ($\alpha \leq 0.05$).

Table (18) shows that the value of the correlation coefficient is R = 0.422, which means that there is a positive relationship between motivation and cyber risk management. It turns out that the value of the coefficient of determination is R^2 = 0.178, and this means that motivation has explained 17.8% of the variance in cyber risk management. Therefore, we reject the fifth sub-hypothesis and accept the alternative sub-hypothesis, which states: "There is a statistically significant effect of the application of motivation to managing cyber risks in Jordanian mining companies." The researchers believe that there is a positive relationship between the application of motivation from strategic intelligence to managing cyber risks.

Conclusion, Implications and Recommendations

The study reached a number of implications as follows:
1. There is an application of strategic intelligence in Jordanian mining companies in an average way that reached the application rate of 70.80%. There are strenuous attempts by Jordanian mining companies to adhere to the application, and the most successful application was partnership with a high application and a relative weight of 78.13%, then followed by a forward-looking application with an application rate of 72.50%, the last of which was the application of motivation with an average application rate of 64.00%.
2. It was noted that there is a clear focus by the Jordanian mining companies departments on partnership as a method that benefits the development of the company and achieving its perception and goals, and also focuses on sharing the decision with some or other companies to grow stronger, as Jordanian mining companies focus on meeting the legal and regulatory requirements related to the management of cyber risks as much as possible.

3. There is an application for foresight from artificial intelligence in the Jordanian mining companies in an average rate of 78.75%, and Jordanian mining companies have taken care of that the decision-makers rethink the information gathered to know their current or future repercussions on the company.

4. There is an application of systems thinking from artificial intelligence in Jordanian mining companies in an average rate of 71.25%, where it was noted that Jordanian mining companies are trying to appear in the form of a coherent and consistent system.

5. There is an application of the future (strategic) vision of artificial intelligence in Jordanian mining companies in an average rate of application of 68.13%, where it was noted that Jordanian mining companies are based on uniting the efforts of their employees to achieve their goals.

6. There is an application of the partnership of artificial intelligence in Jordanian mining companies with a high rate of application (78.13%), where it was noted that Jordanian mining companies consider that the partnership is a method that benefits the development of the company and achieving its perception and goals, and that the decision strength increases when the companies share with each other or with other companies to take it.

7. There is an application of motivation from artificial intelligence in Jordanian mining companies with an average rate of 64.00%, where it was noted that Jordanian mining companies have the ability to motivate workers to implement their vision and achieve their goals.

Recommendations: In light of the above, the study recommends the following:

1. Focusing the higher departments in Jordanian mining companies on extrapolating the future to develop their strategies in the long run.

2. Among systems' thinking is to work on focusing on that decision makers study ideas together and individually according to the systems approach.

3. We recommend Jordanian mining companies to have a vision with holistic dimensions that determine the direction of their business.

4. Researchers recommend that Jordanian mining companies enact multiple local and regional partnerships to improve their situation.

5. We recommend Jordanian mining companies to have programs to train workers and develop their skills on an ongoing basis and urge them to participate in decision-making and take responsibility.

   6. Jordanian mining companies determine the number of cyber attacks they have been subjected to and test their financial resilience.

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