



Knowledge Management and Organizational Innovation for the Resilience of Business Organizations in the COVID-19 Pandemic

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ABSTRACT

Objectives –This study focuses on the performance of Indonesian companies in dealing with the development of e-commerce businesses during the Covid-19 pandemic. Relationship between Knowledge Management (Organizational Memory, Knowledge Sharing, Knowledge Absorption, Knowledge Reception), Organizational Innovation (Product, Market, Process, Behavior, Strategic), Organizational Resilience (Capital Resilience, Strategic Resilience, Cultural Resilience, Relationship Resilience, Learning Resilience) examined in this case study.

Research design, data and methodology –A survey approach was conducted to collect data from Group Companies (Directors and Managers), Academics (Lecturers), Regulators (Head of Government Agencies), and Masters in Management (minimum five years). A total of 150 samples were collected and taken for statistical analysis using Smart PLS.

Results -The findings prove that Knowledge Management and Organizational Innovation have a positive effect on Organizational Resilience, while Knowledge Management has a positive effect on Organizational Innovation.

Conclusion –The implementation of the strategy or steps above is expected to help direct and motivate an organization to successfully implement something good Knowledge Management system to pass knowledge from generation to generation in the company's Organizational Innovative strategy to improve performance that makes Organizational Resilience.

Keywords: Knowledge Management, Organizational Competitiveness, Resilience, Covid-19, Pandemic, Business

I. INTRODUCTION

The development of current economic growth with the flow of globalization leads to the digital era to meet the demands of a very broad community. This digital era cannot be separated from e-commerce where e-commerce functions as a medium to become a collection of technologies, applications, and businesses that connect companies and individuals as consumers to carry out electronic transactions, exchange goods, and exchange information via the Internet or other computer networks. (Mashur et., al, 2019) and (Indahingwati, et al, 2019).

In addition to the development of economic growth, all companies (organizations) or individuals are subject to a diverse and ever-changing and uncertain environment. Natural disasters, disease pandemics, terrorist attacks, economic recessions, equipment failures and human error can all pose potentially severe and unforeseen threats to a company's survival. In this situation, the company (organization) must develop or have capabilities that can withstand emergencies and recover from the resulting disturbances. Crises can trigger from various sources, the level of severity and intensity, as well as the challenges required need the right approach. This is why disruptive environmental attacks can cause some organizations to succeed while others fail. Coutu (2002); Hamel & Välikangas (2003) explains "

Bhamra et al. (2011); Zolli & Healy (2012) suggest that the number of high-risk events is steadily increasing in the world, from around 350 in 1980 to nearly 1000 in 2014 and direct losses increased by \$250 billion from \$50 billion (UN, 2015). Different organizations have different reactions when faced with this dangerous and destructive situation, some organizations have successfully adapted and continue to grow and



some organizations lack response and are finally closed.

The outbreak of Covid-19 and the further intensification of the recession resulted in the closure of many businesses, government tax revenues fell dramatically. In addition, increased spending on health and livelihood assistance for those most affected by the outbreak led to even more severe budget deficits. This series of events led to the formation of high inflation expectations among the people by imposing a new way of life that suddenly changed, looking for practical ways to adapt. Organizations globally are experiencing unprecedented workforce disruptions, all companies are still figuring out how they are going to work in the short and long term, as workforces and communities try to function and work,

These individuals, communities and organizations need a fit-for-purpose plan that can evolve as the global health and economic environment changes. Business, government, citizen, and non-profits all play a critical role in

building people-centred, systems-centric approaches that promote the resilience of the collective workforce. Massive workforce changes that have occurred as a result of the pandemic, such as the urgent need to shift to a remote workforce to protect and empower employees, serve customers, and establish business continuity, are continuing to be pursued, as is the crisis need for virtual care messages and visits in healthcare and other crisis needs.

The impact of these changes and challenges also applies to companies in Indonesia to actively face and find solutions to survive in this digital era with strategies that can improve performance in e-commerce as a means to meet customer needs. This is also supported by Indonesia's own market share and the culture of its people who are quick to adopt things related to technology. Figure 1 presents the growth of e-commerce sales in Indonesia. The data shows that e-commerce sales in Indonesia have increased significantly every year.

Table 1: Growth Rate of E-commerce Sales in Indonesia

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Indonesia	104.50%	85%	71.30%	45.10%	37.20%	26.00%	22.00%	32.90%	20.60%	6.60%
China	103.70%	94.10%	65.10%	51.20%	30.60%	22.60%	18.30%	34.30%	18.30%	9.10%
India	47.20%	39.70%	34.60%	27.10%	23.70%	18.20%	16.60%	25.00%	24.10%	22.00%
South Korea	17.60%	6.00%	6.90%	9.30%	8.30%	8.20%	7.30%	11.10%	18.10%	3.40%
Australia	11.00%	10.05%	6.00%	5.70%	5.10%	5.00%	4.20%	5.40%	5.40%	5.50%
Japan	27.10%	13.20%	-7.20%	7.10%	6.70%	5.60%	5.00%	6.22%	3.60%	3.80%
Other	23.90%	12.40%	12.70%	12.00%	11.90%	11.00%	10.20%	24.20%	20.70%	19.00%
Total Asia Pasific	37.20%	32.80%	23.10%	29.00%	20.90%	16.70%	14.20%	22.90%	25.00%	26.30%

Source:(www.statista.com, 2021)

Companies need to have resilience to face changes and challenges in order to survive in their industry. Resilience that must be owned by companies is influenced by several factors including Knowledge Management to be able to create value and produce competitive advantages for companies and Organizational Innovativeness that is appropriate in providing services to create or maintain Competitive Advantage of companies or organizations (private, government, individuals), especially during the Pademi Covid-19 is a form of the company's efforts to actively monitor the training and development of company members so that their knowledge is in line with the latest developments, so they can realize innovative ideas within the company.

E-commerce has been able to attract many consumers in Indonesia before the Covid-19 outbreak, is also one of the main drivers that made Indonesia the country with the largest digital economy value in Southeast Asia reaching \$40 billion in 2019 and is predicted to increase to \$130 billion in 2025, with As more retail stores and manufacturers are forced to turn to e-commerce, the growth could be accelerated further, where before Covid-19 e-commerce was only an option. Nowadays it is very important for retail shops and manufacturers to sell products through e-commerce platforms in order to be able to maintain their business. This will have a positive long-term impact because consumers will become more accustomed to shopping online.



The rapid growth of e-commerce orders also occurred in March 2020, to be precise after the Corona virus outbreak spread in Indonesia. Covid-19 has had a significant impact on the economies of countries affected by the virus, including Indonesia. The increase in digital spending occurred because people prefer to buy their needs online, this is in line with the implementation of government policies namely working from home or work from home (WFH) and extending the study period at home.

Knowledge Management, An effective learning process related to the exploration, exploitation, and sharing of human knowledge (tacit & explicit) using appropriate technology and cultural environment to enhance intellectual capital and organizational performance (Jashapara & Tai, 2011). There are four important dimensions of Knowledge Management: Organizational memory; Sharing knowledge; Absorption of knowledge and Reception of knowledge. The four dimensions of knowledge management measurement have been examined and tested by (March & Olsen, 1976); (Cohen & Levinthal, 1990); (Prahalad & Hamel, 1994); (Nonaka & Takeuchi, 1995); (Mack & Szulanski, 2017); (Popper & Lipshitz, 1998); (Davenport, Davies, & Grimes, 1998); (Hansen, Nohria, & Tierney, 1999); (Cross & Baird, 2000); (Alavi & Leidner, 2001); (Becker, 2001); (Gray, 2001);

Organizational Innovativeness, Innovation can come in various forms, such as product or process innovation, radical or incremental

innovation, administrative or technological innovation, and others. (Matinaro & Liu, 2017); (Camisón-haba, Clemente-almendros, & Gonzalez-cruz, 2018); (Valdez-juárez, Solano-rodríguez, & Philippe, 2018). The importance of different dimensions is emphasized by the author. For example, (Witell et al., 2016) suggests various possible innovative alternatives, namely developing new products or services, developing new production methods, identifying new markets, finding new sources of supply, and developing new organizational forms. Miller & Friesen (1983) focus on four dimensions: innovation of new products or services, methods of production or service delivery, risk taking by key executives, and seeking unusual and novel solutions. Wang, Campus, & Campus (2004) adopted three dimensions of innovation: market innovation, strategic inclination to be pioneers, and technological sophistication. From various studies, we identify five main areas that determine the overall organizational innovation of an organization. They are product innovation, market innovation, process innovation, behavioral innovation and strategic innovation. Research emphasizing these different dimensions is briefly summarized in Table 2. In line with this perspective, we define organizational innovation as a company's overall innovative ability to introduce new products to markets, or open new markets, by combining strategic orientation with innovative behaviors and processes, measured using dimensions or indicators:

Table 2: Organizational Innovativeness Dimension or Indicator (Sustainable, Muhdaliha and Putra, 2020)

Variable	Product	Market	Process	Behavior	strategic
Organizational Innovativeness	x	x	x	x	x

Organizational Resilience, Business resilience is an organization's ability to adapt quickly to disruptions while maintaining continuous business operations and protecting people, assets and overall brand equity. Business resilience goes beyond disaster recovery by offering post-disaster strategies to avoid costly downtime, shore up vulnerabilities, and sustain business operations in the face of additional, unexpected breaches. Business resilience begins with the understanding that workflows must be maintained for an organization to survive unforeseen events. An often overlooked challenge of business resilience planning is the human

element, to which individuals in chaotic situations must be prepared and educated on how to respond appropriately.

Business continuity planning is sometimes referred to as business continuity planning. Five dimensions of organizational resilience: capital resilience, strategic resilience, cultural resilience, relationship resilience, and learning resilience. Organizational resilience shows that the concept is applied in fields such as ecology, psychology, and economics. In short, organizational resilience contains three main important elements. First, organizations operate in a dynamic environment. Second, organizations respond to crises by



reconfiguring organizational resources, reshaping organizational relationships, and optimizing organizational processes in adverse situations. Third, the organization achieves recovery and achieves growth. Therefore, can be considered organizational resilience as an organization's ability to reconfigure organizational resources, optimize

organizational processes, reshape organizational relationships in crises, recover quickly from crises, and use crises to achieve counter-trend growth. Organizational resilience emphasizes a company's ability to not only emerge from difficult situations, but also drive growth in a crisis.

Table 3: Organizational Resilience Dimension or Indicator(Chen; Xie; Liu, 2021)

Variable	Dimensions	Related Concepts
Organizational Resilience	Capital Resilience	Business ability to operate normally and recapitalize against risks in a crisis.
	Strategic Resilience	Companies are able to maintain strategic consistency over time, helping them to identify and eliminate losses and to be able to choose the right growth model
	Cultural Resilience	Company culture shapes the entrepreneurial spirit of employees and their commitment to the organization
	Relationship Resilience	Mutual relationship between business and stakeholders
	Learning Resilience	The company's ability to overcome pressures and challenges in learning

II. RESEARCH METHODOLOGY

This study used purposive (judgmental) sampling in determining the sample. Sampling assessment is done by selecting sample members based on certain criteria (Cooper, DR, Schindler, PS, & Sun, 2006). Researchers use certain considerations of the elements selected as a population sample. The members of the population selected as the sample are determined directly by the researcher so that there is no opportunity for other members of the population to be sampled if they are outside the consideration of the researcher. Judgmental sampling is done by selecting or determining the sample based on certain considerations and guidelines from the researcher.

In this study using qualitative data, namely this research is based on looking at an object which includes observation, interviews, literature study, and questionnaires. Respondents in

this study consisted of actors, users and business observers in various companies (Directors and Managers), Academics (Lecturers), Heads of Government Agencies (Regulators) and Masters of Management Postgraduate students with at least 5 years working experience. Where the sampling of respondents is done with non-probability sampling technique. This research method uses a random sampling method, namely the sample chosen is really in accordance with the criteria of the research being conducted. The number of samples in this study were 150 respondents. Descriptive analysis here is an analysis of the respondents who have participated. The characteristics and backgrounds of these respondents varied; therefore required qualifications to reflect the characteristics of each respondent. The results of the characteristics of the respondents who have been analyzed and processed using SPSS are listed in table 3.

Table 3: Respondent demographics

Items	number	Percentages	Accumulated Percentage
Gender			
Male	89	59%	59%
Female	61	41%	100%
Age (Year)			
<25	15	10%	10%
>25 - 35	79	53%	63%
> 35 - 45	45	30%	93%



> 45	11	7%	100%
Education Level			
Diploma	6	4%	4%
Bachelors	96	64%	68%
Masters or Doctoral	48	32%	100%
Position			
staff	34	23%	23%
Supervisors	47	31%	54%
manager	44	29%	83%
CEO	25	17%	100%
Work Experience (Years)			
< 5	27	18%	18%
> 5 - 15	77	51%	69%
> 15 - 25	37	25%	94%
>25	9	6%	100%
Type of organization			
Government Enterprises	39	26%	26%
Owned Enterprises	106	71%	97%
NGO (Non-Profit)	5	3%	100%
Business fields			
Information Technology	47	31%	31%
Bank	8	5%	37%
Investments	5	3%	40%
Others	7	5%	45%
Education	19	13%	57%
Telecommunications	5	3%	61%
Public Services	13	9%	69%
security	4	3%	72%
consulting	21	14%	86%
Hotels & Restaurants	4	3%	89%
Manufacturing	17	11%	100%
Age of the Company (Year)			
< 5	36	24%	24%
> 5 - 15	40	27%	51%
> 15 - 25	23	15%	66%
>25	51	34%	100%

Source: Own (2021)

The measurement scale used in this study is a semantic scale from one to seven. This measurement scale was developed by Osgood

(Osgood, CE, May, WH, and Miron, MS "Cross-Cultural Universals of Affective Meaning." Urbana, IL: University of Illinois Press, 1975).



This scale is arranged in a continuous line. Very positive (very good) answers are located to the right of the row, and very negative (very bad) answers are located to the left or vice versa. The data obtained is interval data, and usually this scale is used to measure certain characteristics possessed by the research object. According to (Sedarmayanti, 2002) and (Meiyani& Putra, 2019),

assessments on the semantic scale can be more in-depth than when using a Likert scale, because semantic scale scores are presumed to have interval level measurements to allow a calculated average and standard deviation. To avoid ambiguous or biased answers, the respondents' alternative choices were eliminated into six scales.

Table 4: Validity and Reliability Results

No	Variables	Items	Cronbach Alpha	Item total correlation	Items to be taken out
Knowledge Management					
1	a. Organizational memory	8	0.945	0.733 – 0.890	None
	b. Knowledge sharing	8	0.866	0.587 – 0.774	1 Items
	c. Knowledge absorption	4	0.785	0.441 – 0.700	None
	d. Knowledge receptivity	10	0.92	0.479 – 0.898	1 Items
Organizational Innovativeness					
2	a. Product	3	0.879	0.744 – 0.790	None
	b. Process	4	0.745	0.448 – 0.651	None
	c. marketing	3	0.936	0.807 – 0.904	None
	d. Strategy	4	0.803	0.330 – 0.851	1 Items
	e. Behavior	4	0.896	0.711–0.859	None
Organizational Resilience					
3	a. Capital Resilience	7	0.922	0.655 – 0.861	1 Items
	b. Strategic Resilience	6	0.845	0.478 – 0.751	1 Items
	c. Culture Resilience	6	0.905	0.618 – 0.863	1 Items
	d. Relationship Resilience	5	0.913	0.749 – 0.858	1 Items
	e. Learning Resilience	6	0.943	0.707 – 0.882	None

Source: Own (2021)

Validity test was conducted to find out whether the questionnaire was distributed or not. The decision to test the validity of the respondent uses the significance level if the respondent's question item if r count is greater than or equal to r table (r count r table). Research instruments besides valid must also be reliable (reliable). Therefore the reliability test is used to determine

the accuracy of the questionnaire values, meaning that if the research instrument is tested on the same group even though at different times the results will be the same. The instrument can be said to be reliable if the results of C_{α} count $>$ C_{α} table. Cronbach's Alpha Coefficient (C_{α}) is the most commonly used statistic to test the reliability of a research instrument.

III. Research Models

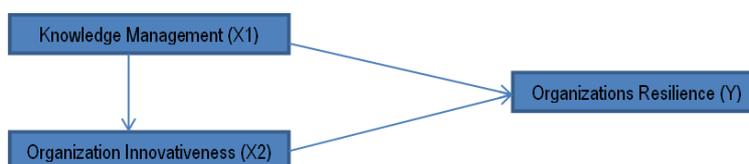


Figure 2: Research Model

This study discusses three variables, namely Knowledge Management and Innovative

Organizational variables as independent variables and Organizations Resilience as the dependent



variable. Independent variables are variables that can influence other variables that are not independent (dependent variable) while dependent variables (dependent variables) are variables that can be influenced by other variables (independent/independent variables). This model describes the problem to be studied so that there are no mistakes in interpreting the variables and the

frame of reference for the researcher in describing the problem to be studied.

H1 : Knowledge Management influences Organizations Resilience.

H2: Organizational Innovativeness affects Organizational Resilience.

H3: Knowledge Management influences Organizational Innovativeness.

IV. RESEARCH RESULT

Structural analysis

Structural model is a model that connects exogenous latent variables with endogenous latent variables or the relationship of endogenous variables with other endogenous variables. In this study, the structural model is associated with six research hypotheses which imply a causal relationship between latent variables. There are

three latent variables with 14 manifest variables. Knowledge Management latent variables consist of 4 manifest variables; Organizational Innovativeness consists of 5 manifest variables and Organizational Resilience consists of 5 manifest variables. By using the second-order estimation method from Partial Least Square, the path diagram is obtained as follows:

Figure 3. Path diagram of the variable models X1, X2, Y

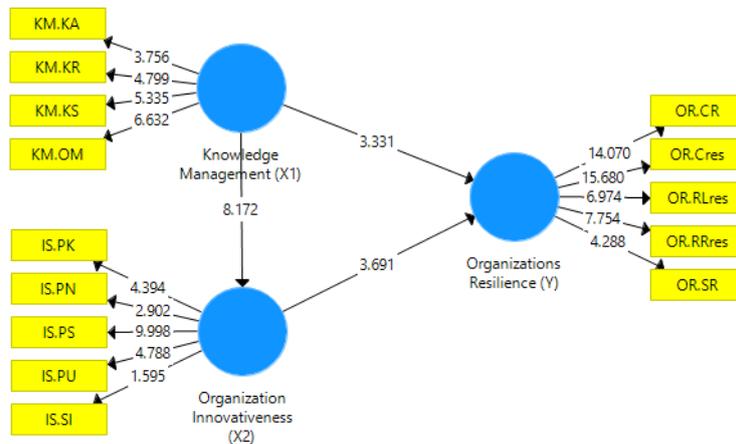


Figure 4. Path diagram of the variable models X1, X2, Y

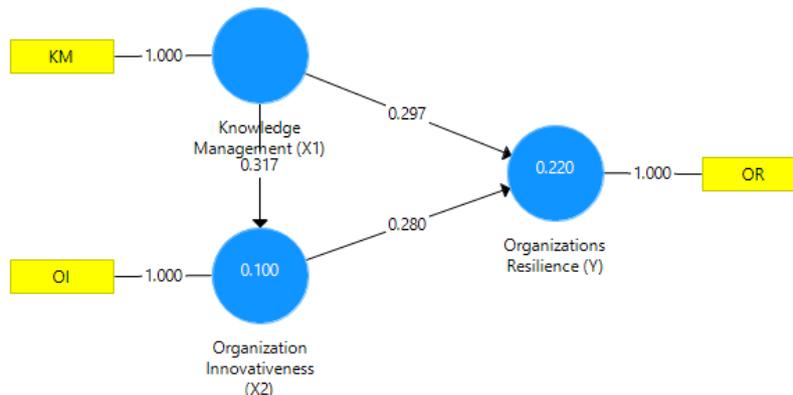




Table 5: Path Coefficients X1, X2, Y

	km	OI	OR
Knowledge Management		0.317	0.297
Organizational Innovativeness			0.280
Organizational Resilience			

Based on the test results, it is proven that all hypotheses (H1, H2 and H3)

Structural Model Testing

The structural model is evaluated using the t value and the coefficient of determination (R2). The R2 value indicates the number of

variants in the endogenous variables that can be explained simultaneously by exogenous latent variables. Table 6 shows the results of R Square:

Table 6: R Square

	R Square	R Square Adjusted
Organizational Innovativeness (X2)	0.100	0.094
Organizational Resilience (Y)	0.220	0.209

The total value of R2 is used to calculate Goodness of Fit (GOF) because on smart pls there is no special menu to calculate GOF. The GOF value is used to indicate whether a model is fit. So that the value of Goodness of Fit (GOF) is as follows:

$$\begin{aligned}
 \text{Gof} &= Q2 = 1 - \{(1-R1)(1-R2)\} \\
 &= 1 - (1-0.100)(1-0.220) \\
 &= 0.298
 \end{aligned}$$

Table 7 shows, the value of Q2 = 0.948 means that 94.8% of the diversity of endogenous variables is explained by exogenous variables, the rest is explained by other variables not included in the model. The greater the Goodness of Fit Q2, the greater the Exogenous variables can affect the Endogenous variables. From the Structural Equation above it can be seen that R2 of each equation:

- Organization Innovativeness has an R2 of 0.100, and this figure indicates that Knowledge Management can explain 10% of Organization Innovativeness variance, while the rest is explained by other factors that are not measured.
- Organization Innovativeness has an R2 of 0.220, and this figure indicates that Knowledge Management and Organization Innovativeness can explain 22% of Organizational Resilience's variance, while the rest is explained by other factors that are not measured.
- Knowledge Management and Organizational Innovativeness simultaneously produce a Goodness of Fit (GOF) of 29.8%. GOF represents the overall goodness of the model.

Table 7: T-values or path coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	std. Error	Betas		
1 (Constant)	2020	.410		4,933	.000
organizational innovativeness	.660	.083	.547	7,945	.000
a. Dependent Variable: Organizational Resilience					
2 (Constant)	.033	.280		.119	.905
Knowledge Management	.966	.051	.840	18,842	.000



a. Dependent Variable: Organizational Resilience						
3	(Constant)	1822	.345		5,284	.000
	Knowledge Management	.563	063	.591	8,912	.000
a. Dependent Variable: organizational innovativeness						

Hypothesis test

In this study there are 3 hypotheses, which are based on hypothesis testing (Table 8). Between

Exogenous and Endogenous variables there is a direct effect with a significance level of 5% (alpha 0.05).

Table 8: Hypothesis testing

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Results
	B	std. Error	Betas			
organizational innovativeness → Organizational Resilience	.660	083	.547	7,945	.000	support
Knowledge Management → Organizational Resilience	.966	051	.840	18,842	.000	support
Knowledge Management → organizational innovation	.563	063	.591	8,912	.000	support

Below are the results of hypothesis testing:

- The magnitude of the direct influence organizational innovativeness to Organizational Resilience of 0.294, meaning 29.4% Organizational Resilience influenced by Organizational Innovativeness. Meanwhile, 70.6% Organizational Resilience is influenced by other factors.
- The magnitude of the direct influence organizational innovativeness to Organizational Resilience of 0.704, meaning 70.04% Organizational Resilience influenced by Organizational Innovativeness. Meanwhile, 29.96% Organizational Resilience is influenced by other factors.
- The magnitude of the direct influence Knowledge Management to organizational innovativeness of 0.345, meaning 34.5% organizational innovativeness is influenced by Knowledge Management. Meanwhile, 65.5% organizational innovativeness is influenced by other factors.

V. CONCLUSION

Based on the results of this study, it can be concluded that Knowledge Management and Innovative Organizational variables have a significant and positive influence on Organizational Resilience variables. So that this research is expected to be a reference in implementing

strategies or steps to be taken by decision makers in an organization to focus on reviewing resilience literature. The relationship between the dimensions and the overall construct should be discussed and analyzed further by gathering more empirical evidence that explains more about this discussion. Organizations will only be able to increase their resilience if there is clarity on the concepts and variables that define resilience to assess, develop, and continue to improve over time. With the development of the digital economy, the environment in which organizations operate is increasingly unstable. Survival and growth in a dynamic environment is a key goal for organizations. Therefore, the importance of organizational resilience is recognized by scholars and practitioners. This research clarifies the concept of:

- Organizations Resilience, refers to an organization's ability to reconfigure organizational resources, optimize organizational processes, reshape organizational relationships in crises, recover quickly from crises, and use crises to achieve counter-trend growth.
- Knowledge Management, refers to the ability of every organization or company to always and periodically develop and improve Knowledge Management for all of its HR both during normal times and during crises and document everything that has been done.



- Innovative Organizational, refers to the ability of every organization or company to always survive and develop more from time to time, especially organizational innovation in managing processes or determining its marketing strategy.

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