

# THE IMPACT OF KNOWLEDGE SHARING ON INNOVATION DURING THE COVID 19 PANDEMIC: THE MEDIATING EFFECT OF CULTURE

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*This paper intends to examine the importance of knowledge management in increasing the competitive advantage of organizations during the COVID-19 pandemic. This paper also tackles the degree of acceptance of advanced technology in Lebanon overall. The surveys were circulated among 1,000 executives in diverse industries across the country. The total of 246 questionnaires was completed, with the response rate of 24.6% from the total population. The results of our study demonstrate how considering the significance of knowledge management will help organizations to be successful during the pandemic, namely, by improving strategic management decisions, taking into consideration long-run performance of the company and achieving organizational objectives. Our results also show that technology as such is most welcome in Lebanon, however, only a few organizations have been actually planning to invest in it due to the economic conditions that Lebanon is going through along with the currency freefall. Finally, the study shows the need for cooperation and social capital features among community organizations.*

**Keywords:** knowledge management; competitive advantage; COVID19 pandemic; strategic management; Lebanon

## Introduction and theoretical background of the study

Since the beginning of the 20<sup>th</sup> century, pandemics have struck the planet five times. It started with the Spanish flu back in 1918, and currently we are facing the COVID-19 pandemic which has begun in late 2019 and is still ongoing. The coronavirus disease has already affected over 122 mln lives worldwide. Its spread is causing a global effect that has never been seen before. The human cost of this pandemic as well as its social, health and economic effects have been enormous.



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Therefore, most of the countries are asking their people to stay at home, limit travel and maintain social distancing to prevent the spread of the disease.

### ***Problem statement***

COVID-19 have urged countries to take actions that have disturbed the businesses worldwide. Some businesses have managed to adapt to the changing environment. For instance, retail stores were shut down, thus obliging buyers to change their shopping behaviors by focusing on social media and making most of their purchases online. In the education sector, schools and universities also had to shut down, thus, the lives of instructors, students and their parents have been greatly altered since learning became online.

Restaurants shifted their services to the takeout mode, and even gyms have started offering online classes. In a similar manner, many other organizations were forced to master various digital technologies, even book stores. McKinsey & C, for example, have declared that such a transformation of technology they employed due to the pandemic have increased their revenues, reduced costs, and enhanced their employee experiences overall.

While some businesses could adapt and take advantage of the current situation, others were obliged to shut down completely, small businesses in the first place. The estimate is that almost 73,000 small businesses in the United States alone were forced to close permanently as of 10th of July 2020, thus increasing the economic distress.

### ***Scope of this Study***

This research raises the awareness about the importance of knowledge management in supporting organizations when determining their long-run performance and reaching their business objectives by taking the case of Signify company, previously known as Phillips, that was able to use its knowledge to adapt and plan for unpredictable events caused by COVID-19, ending in the creation of new UV-C lighting solutions that work as a preventive measure in several sectors, including hospitals, education, hospitality, retail stores and businesses who are all seeking for virus-free environments. Signify managed to extend its existing capabilities by reallocating its information technology potential. Strong businesses have a solid configuration that allow for new purposes, software deployments, and efficient cross-team collaboration.

As Signify has a representative office in Lebanon as the company that has been the leader in all electro-mechanical products for more than 50 years by now, the acceptance of the UVC led products will be tested at Lebanese market. As UVC is a new technology, only a few articles have by now discussed its concept worldwide, focusing on its importance in the medical field especially in OR rooms in hospitals. But, to the best of our knowledge, no articles on this topic have been published thus far in Lebanon and/or on Lebanese data. Therefore, the author of this text will be filling this gap on the new technology acceptance in Lebanon.

### ***KM Influence on Organizational Innovation***

Organizational Innovation (OI) can be defined as the activities within the organization contributing to a better managerial climate and elimination of barriers in generation and execution of new ideas and concepts (Abbas et al, 2018). Many researchers conclude that through organizational creativity repetitive learning is reduced and organizational performance and responsiveness are improved (Akram et al, 2018).

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Beggs & Avital (2020) suggested that the informal processes of learning and experience-based know-how create various types of information that contribute to different modes of creativity, since this type of unstructured learning stimulates the practice of mobilizing tacit awareness and innovation in problem-solving and learning. With KM impacts, solving market issues may help develop new goods or services that can improve client connections and ensure organizational development overall.

To improve the connections between the abilities to retrieve and utilize information, called knowledge inertia, OI plays a part in improving the organizational problem-solving practices, depending on a form of a specific entity (Bdeir et al, 2013).

Casini et al. (2019) suggested that KM affects transparent innovation activities by strengthening the way the organization operates with its collaborators, modifying the way of administering and developing work procedures and processes. The consistent impact of KM is seen in the consistent development which increases the organisation's capacity to deliver goods or services that are sustainable, reliable, and successful.

KM practices are also seen to strengthen the ongoing engagement between individuals and communities in developing, collecting and exchanging information while converting it into innovative services and viable goods. This is in line with a proposition by Haig (2010), who confirmed there is a relationship between information sharing, team culture and service innovation success. Haig (2010) also confirmed, stemming from a report for Malaysian government, that information exchange capability and employees' creativity capability are closely related to their ethics, values and work culture.

Nowadays, innovation management arises as a feasible concept that contributes to OC through improved results and competitive advantage. Information sharing encourages extended organizational learning, thus contributing to OI. As the organization senses a broader connection between events and trends in the past and trends in the future, it tends to speed up its own OI.

From various studies, we see that exchanging information helps to foster creativity and to cut learning time. As organisations need to exchange and use all the information possible, the latter influences organizational success in a reciprocal manner. KM thus impacts through inter-organizational effects taking place between and across multiple business units.

### ***Innovation***

Innovation is the discovery and application of new concepts, the use of new methods, or the introduction of new goods or services. The concept of creativity has been identified by the researchers as "the effective application of new concepts within the company". At the same time, innovation is often characterized as "introduction and adoption of new goods, practices, procedures, or theories designed to improve or serve someone's life, business, or cause" and even simply as "getting and applying better methods to doing things".

Some firms have taken the view that creativity happens by finding and using fresh resources to one's own advantage, whilst others believe that it will happen by allowing creative use of those already available.

Previous studies have shown that good management does have its impact on the effectiveness of information. For example, Hawryszkiewicz & Binsawad (2018) asserted that advancement of creativity is closely tied to the acquisition of new information by a company.

This author insists that issues of communication should be resolved if progress is to be made between groups and individuals. Secondly, it is thought that information transfers from one party to another, theoretically, resulting in new goods or services.

When we understand all the aspects of creativity, intelligence will have a far stronger impact. As far as exploratory creativity is concerned, it can be said that companies generally gain more expertise by applying it to their current business models, goods or services rather than by using it to develop new ones. To be(come) creative, one must have both external and internal knowledge. As workers exchange their information, experience and skills with each other, they become inspired to increase their capacities and become innovative.

### **Knowledge-Sharing Enablers**

Just because information is multidimensional in nature, it can be approached with a simplistic attitude. During several experiments concentrated on behavioural, social, educational, and creativity, the researchers began looking into the issue of resource-based philosophy and the concept of information sharing to discover the essential aspects of organizations that contribute to effective knowledge sharing. The variables that support information sharing can be divided into three groups: technical, personal, structural, and cultural. Many of these aspects can influence work enablement and performance. These involve corporate culture, structure, computer infrastructure, leadership, incentive schemes, human resource management, employee satisfaction, organizational learning, etc.

Knowledge sharing is one of the targeted outcomes of knowledge generation; prior research has supported this idea multiple times. Maintaining emphasis on the most frequently reported organizational predictors, the author has decided to look at their effect on information exchange within real-life, practical communities.

Finally, a selection criterion was determined to be the extent to which social capital would influence on information sharing. At the end, we have concluded that information organisation structure, work structure, incentive schemes, employer support, and company's culture were the three of the four study's knowledge sharing enablers.

### ***Organizational Culture***

The corporate meaning of this notion includes such factors as organizational philosophy and organizational environment. Corporate culture or environment may allow or obstruct information sharing. However, Greenstein et al. (1995) argued that the variations between corporate culture and organizational environment are mostly based on individual viewpoints. The purpose of this research is to investigate the potential impact of organizational variables which foster knowledge sharing and capabilities. a knowledge-sharing organization is the one that is better equipped to improve its own knowledge sharing capabilities.

Inside an organisation, cultural orientation on innovation eventually leads to invention achievement (Shanker et al, 2017). In their investigation, they confirmed that an innovative climate helps employees be more likely to choose to exchange experience in their workplace. Several important characteristics are associated with the innovation culture.

The very first one is being comfortable with imagination, the next one is understanding merit from it. The four elements that affect an organization's level of innovation include its current level of innovation, the level of learning, the strengths of the innovating employees,

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their own assessment of innovation, their ability to carry out new, original ideas, the market in which they are operating, and the industry background in which they're operating.

The final factor is demographics (Abbas et al, 2018a). The previous division into elements/categories used to be much more simple: management-oriented and employee-oriented.

Creativity is always related to an organization's innovation power. The theory suggests that creativity tendency increases with corporate citizenship and decreases with organizational cynicism. The potential for creativity is seen through employees' vision and motivation, the latter being viewed as an asset and also as a way of enhancing company culture. On the other side, workers must be convinced of their position at a certain innovation phase. Thus, they can actively identify their commitment to organization's progress.

The goal of exchanging information is best realized when there is a relationship between organizational vision and its overall capabilities. To foster creativity, clarity in structure and purposes is always needed. Also, a vibrant creative community is important for creativity. It is therefore essential to have (and demonstrate) a serious intent to encourage innovations, in addition to providing the right infrastructure for them.

To build a truly innovative community, businesses must provide their workforce with substantial empowerment and ongoing trainings on the newest concepts. The amount of training and education provided to workers is dependent on the degree to which their organizations are achieving their innovation goals.

Employees must be motivated to expand their talents and creative thinking in order to do well within an organisation. Communities that value and enable workers to continuously update their skills usually also have open channels of communication (Trivellas et al, 2015). The research results reported by Shanker et al. (2017) conclude that in this regard that acquiring information and knowledge sharing go hand in hand with each other, moreover, they are equally important. Thus, workers must be inspired and encouraged to innovate through creativity.

### **Method**

The surveys were circulated among 1,000 executives in diverse industries. The total of 246 questionnaires were completed. Thus, the response rate is 24.6% of the total population.

### ***Measurement instruments***

In our particular case, the intention has been to monitor both information generation and information storing. Rather than having 100% agree or 100% disagree, this study has measured responses on a Likert scale, ranging from "Strongly Agree" to "Strongly Disagree". The questionnaires have been distributed using Google forms.

The questions were built on the research variables of Innovation, Creativity and Knowledge Management. A validity and reliability analysis has been then conducted to validate the data and to ensure that it is reliable. As for the hypothesis validation, it has been done using regression and Pearson correlations.

**Validity and Reliability**

Table 1 – Component matrix  
(Source: author’s own development)

	Cronbach Alpha
	1
Knowledge Management	.884
Innovation	.944
Culture	.843

The above table represents the validity and reliability analysis that serves to show whether the data collected is valid, following the indicator called Cronbach Alpha. Referring to the rule of thumb, if the Cronbach Alpha is above 0.7, then the data collected is valid and reliable, and if it is below 0.7 — then the data collected is neither valid, nor reliable.

Referring to the above table, it can be noted that the Knowledge Management Variable scored the Cronbach Alpha of 0.884, Innovation scored the Cronbach Alpha of 0.994, and Culture scored the Cronbach Alpha of 0.843. Together this means that all the data collected is valid, reliable and ready for statistical analysis.

**Regression One: Knowledge Management & Innovation**

Table 2 – Regression model - 1 summary  
(Source: author’s own development)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.778 <sup>a</sup>	.605	.604	.730

<sup>a</sup>. Predictors: (Constant): Knowledge Management, Innovation

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.869	.151		5.746	.050
	Knowledge Management	.774	.040	.778	19.504	.005

<sup>a</sup>. Dependent Variable: Innovation.

From the above regression analysis, it can be noted that knowledge management tends to have a significant relationship with innovation and creativity in the workplace since it has scored a P Value of 0.005 (which is lower than 0.05), a T-Test value of 19.504 (greater than 2), and B value of 0.778, which is considered to be a positive coefficient.

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As for the R, it scored (0.778), which means that knowledge management covers 77.8% of the variables which affect innovation and creativity in the workplace. R<sup>2</sup> scored 0.605 which means that knowledge management tends to affect innovation by 60.5%.

The following equation can be therefore deduced:

$$Y = A + BX_1, \text{ or}$$

$$\text{Innovation} = 0.50 + 0.778 \text{ Knowledge Management.}$$

This means that for every one unit increase in knowledge management, innovation is affected by 0.778 units.

### ***Regression Two: Knowledge Management & Innovation taking Culture as a Mediator***

Table 3 – Regression model - 2 summary  
(Source: author's own development)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.783 <sup>a</sup>	.612	.609	.725

<sup>a</sup> Predictors: (Constant), Knowledge Management, Culture, Innovation

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.087	.182		5.984	.055
	Knowledge Management	.771	.039	.775	19.565	.000
	Culture	.079	.037	.085	2.134	.034

<sup>a</sup> Dependent Variable: Innovation

Referring to the above regression analysis, it can be noted that knowledge management tends to have a significant relationship with innovation and creativity in the workplace since it has scored the P Value of 0.005 (which is lower than 0.05), the T-Test result is 19.504 (which is greater than 2), and B is 0.778 (can be considered as a positive coefficient).

As for culture, it also has a significant relationship with innovation since it has scored the P-Value of 0.034, T-Test — 2.134, and B value of 0.085.

As for R, it scored 0.783, which means that knowledge management covers 78.3% of the variables which affect innovation and creativity in the workplace. Finally, R<sup>2</sup> scored 0.61.2 which means that knowledge management and creativity tend to affect innovation by 61.2%.

The following equation can be thus deduced:

$$Y = A + BX1 + BX2, \text{ or}$$

Innovation = 0.55 + 0.775 knowledge management + 0.085 culture.

This should be understood as follows:

For every one unit increase in knowledge management, innovation is affected by 0.775 units. For every one unit increase in culture, innovation is affected by 0.085 units.

It can be noted here that culture as a mediating factor tends to have a partial effect on the relationship between knowledge management and innovation in the workplace.

***Pearson Correlations***

Table 4 – Pearson correlation summary  
(Source: author’s own development)

		Knowledge Management	Innovation	Culture
Knowledge Management	Pearson Correlation	1	.797**	.558**
	Sig. (2-tailed)		.000	.000
	N	181	181	181
Innovation	Pearson Correlation	.797**	1	.714**
	Sig. (2-tailed)	.000		.000
	N	181	181	181
Culture	Pearson Correlation	.558**	.714**	1
	Sig. (2-tailed)	.000	.000	
	N	181	181	181
** Correlation is significant at the 0.01 level (2-tailed).				

The above Pearson correlations have been used here to study the relationship between the research variables, namely, whether it is positive or negative based on the Pearson coefficient indicator. If the indicator shows a positive sign, then the relationship is proportional, and if the indicator shows a negative sign, then the relationship is an inverse one.

Therefore, the following can be concluded from the above table:

There is a direct positive correlation between knowledge management and innovation. When knowledge management increases by 1%, innovation tends to be affected by 79.7%.

There is a direct positive correlation between culture and innovation: when culture increases by 1%, innovation tends to be affected by 71.4%.

**Limitations of This Study**

This research has been conducted in the interests of determining the validity. Questionnaires have been distributed and collected according to the standard guidelines in the field to prevent the most typical mistakes of data collection. In this particular case, survey



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distribution was carried out by the scholar themselves, thus, mistakes with accuracy can be treated as negligible.

The respondents answered questions about the dependent and independent variables in distinct groups, but they didn't experience a typical process variation. While two of the surveyed top executives spoke on the opportunity to innovate, middle managers, from the same company, discussed the overall information exchange, funding for creativity, and social capital.

The study has several default drawbacks. For example, this research has examined only those businesses that considered they to be knowledge-intensive. Consequently, we recognize that respondents from software companies, for example, or those from the general public may be the subject of an alternative research which would come up with very different results. Also, there is the issue of whether the results may be extrapolated to other scenarios.

### **Future Research Directions**

The results of this investigation could be additionally substantiated by more research. Further assessment may include checking the model's robustness by comparing it in various ways, putting its central concepts to test through a variety of cultural factors, looking at their applications, and establishing the model's robustness overall.

The concept of social capital interaction can be used to study how diverse cultures affect information exchange and creativity capabilities.

### **Contributions and Implications of the Study**

The findings from this study reveal several theoretical contributions along with managerial implications. The following subsections discuss these areas of contribution.

#### ***Theoretical Contributions***

This research improves and extends the already existing model in a different setting. The findings demonstrate how various industries and societal backgrounds have varying impacts on business well-being. However, the existing knowledge-sharing practices in the corporations outside the United States often do not demonstrate a significant knowledge intensiveness.

Our study has been performed to evaluate culture as a determining factor. As it is obviously confirmed by the results, culture is able to explain an important part of variation in innovation. According to our results, culture can even function as a replacement to knowledge sharing.

#### ***Managerial Contribution***

Our research has been carried out on the data from the company now known as Signify. Our results will thus help Signify boost its performance and maintain its leadership worldwide.

Our results also suggest that the effectiveness of knowledge sharing varies from organization to organization. The results may help managers choose which enablers and markets to concentrate on, based on their specific demographics.

The results can also be helpful while developing a new human resource strategy, which will help maintain the knowledge sharing experience being vital for in-house innovation.

Even though multiple competitors are working hard to gain their market share, the strategy now being implemented by Signify tends to focus on sharing knowledge and engaging employees in the workplace so as to boost innovation and enhance creativity.

### **Recommendations and suggestions for further research**

Building a learning organization is crucial in today's changing world. Given that there is no common strategy in this area that would fit all organizations, each organization must figure out how to use its resources to the maximum advantage, and this use would greatly depend on a particular country and its current economic, social and cultural situation.

Knowledge management is the most significant element in gaining a competitive advantage for every company. It is considered to be an asset contributing to improved business performance. To attain a competitive advantage any organization must focus on knowledge management so as to improve its organizational performance that, in its turn, would help with building a strong organizational immune system rather than simply maximizing short-term profits.

Greater investments should be allocated to business R&D. This equally applies to every business, small or large. In the context of knowledge management, decision-makers in an organization can determine how to use emerging technologies to better practice organizational knowledge and information.

Summing up, businesses need to plan and carefully consider all the issues related to development and use of knowledge management. The need for digital technology is greater than ever, primarily because technological transformations tend to increase sales, decrease costs, and enhance people's experiences worldwide. Therefore, businesses should adjust their strategies from being reactive to becoming proactive as this seems to be the only key to survival these days. Organizations must start shifting their focus on innovation and creativity as only these two factors are able to guarantee resiliency through smart strategic planning.

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