

# BUSINESS STRATEGY UNDER COVID-19 PANDEMIC: INTERNATIONAL EVIDENCE

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## Abstract

The study investigated the impact of the COVID-19 pandemic on two levels: countries and industries. It is a type of systematic risk. The study discovered evidence of a significant change in business strategy for January 2021 by using three indicators of the Covid-19 epidemic, including indicators of injury, death, and social distancing in workplaces for 2020, in addition to 400 managers' answers from ten countries (Egypt, Germany, France, India, Saudi Arabia, Indonesia, Mexico, Russia, South Korea, and Nigeria). The impact of the Covid-19 epidemic on changing business strategies was 7.55%. On the other hand, the "Pharmaceutical Industry" and "Telecommunication Industry" have the most opportunities for growth, while the "Aerospace Industry" and "Education Industry" have the most threats to growth under the COVID-19 pandemic. Finally, the study can back that to restrictions social distancing; the change in customers' behavior; and finally, the change in assessing strategic position together with the high uncertainty about the future path of the pandemic.

## Keywords

COVID-19, Businesses Activities, Business Strategy, Strategic Management, Business environment.

## 1. Introduction:

The covid-19 pandemic has had an unprecedented worldwide impact in contemporary history (Saab, et al., 2020). As numerous studies have noted, input-output links amplify COVID-19-related output losses caused by demand and/or supply shocks (Baqae and Farhi, 2020; Çakmaklı et. al., 2020; Barrot et. al., 2021).

Under Covid-19 the policymakers are in a state of severe uncertainty. Additionally, the influence of the Covid-19 problem varies significantly within and between countries, having a significant impact on governments polices in a variety of ways, including crisis management efforts and reaction strategy (Allain-Dupré, Chatry, Michalun, & Moisiso, 2020). Every period appears to undergo terrible disturbances of routine, but the impacts of the COVID-19 epidemic on business and corporate investment were extraordinary. As the ground rules evolved in unprecedented ways, some businesses collapsed and others fought to survive (Wagdi and Rabie, 2021). As was the case with other traumatic situations, like as the September 11, 2001, terrorist attacks (Kettl, 2003), examining how firms responded to the epidemic provides an unparalleled chance to develop knowledge.

Governments have taken significant effort to mitigate the threat posed by coronavirus. As a result of the increased security procedures, several nations came to a complete halt (Dzigbede et. Al., 2020; Caduff, 2020; Benavides and Nukpezah, 2020; Uddin et. al., 2021). Covid-19 generated various issues as a result of its virulence, since it significantly harmed economies worldwide by restricting persons' employability or even

income; however, this impact varied by nation; yet, many nations have been suffering from economic troubles (Maital and Barzani, 2020; Elsafty and Ragheb, 2020; Erikson and Wlezien, 2021 ).

From the foregoing, the study finds that business has witnessed many large variables that have an impact on many aspects of human life and business patterns, which can be classified as systematic risk, or in other words, the Covid-19 epidemic is classified as a systematic risk. The term "systematic risk" refers to the portion of overall risk that is caused by circumstances outside the control of a particular firm or individual. Systematic risk is a result of external variables. Because all of the company's investments are vulnerable to systematic risk, it is an un-diversifiable risk. Systemic risk cannot be eliminated via diversification. However, systematic risk includes interest rate fluctuations, inflation, recessions, and wars, among other significant events. Changes in these areas have the potential to reverberate throughout the market and cannot be prevented (Wagdi and Rabie, 2021). Therefore, there will be many changes in the business environment as a result of the epidemic. This opens up many opportunities for business units, along with many restrictions, which can lead to a change in the strategy of the business unit, and this was taken care of in this study by focusing on strategic aspects for business units.

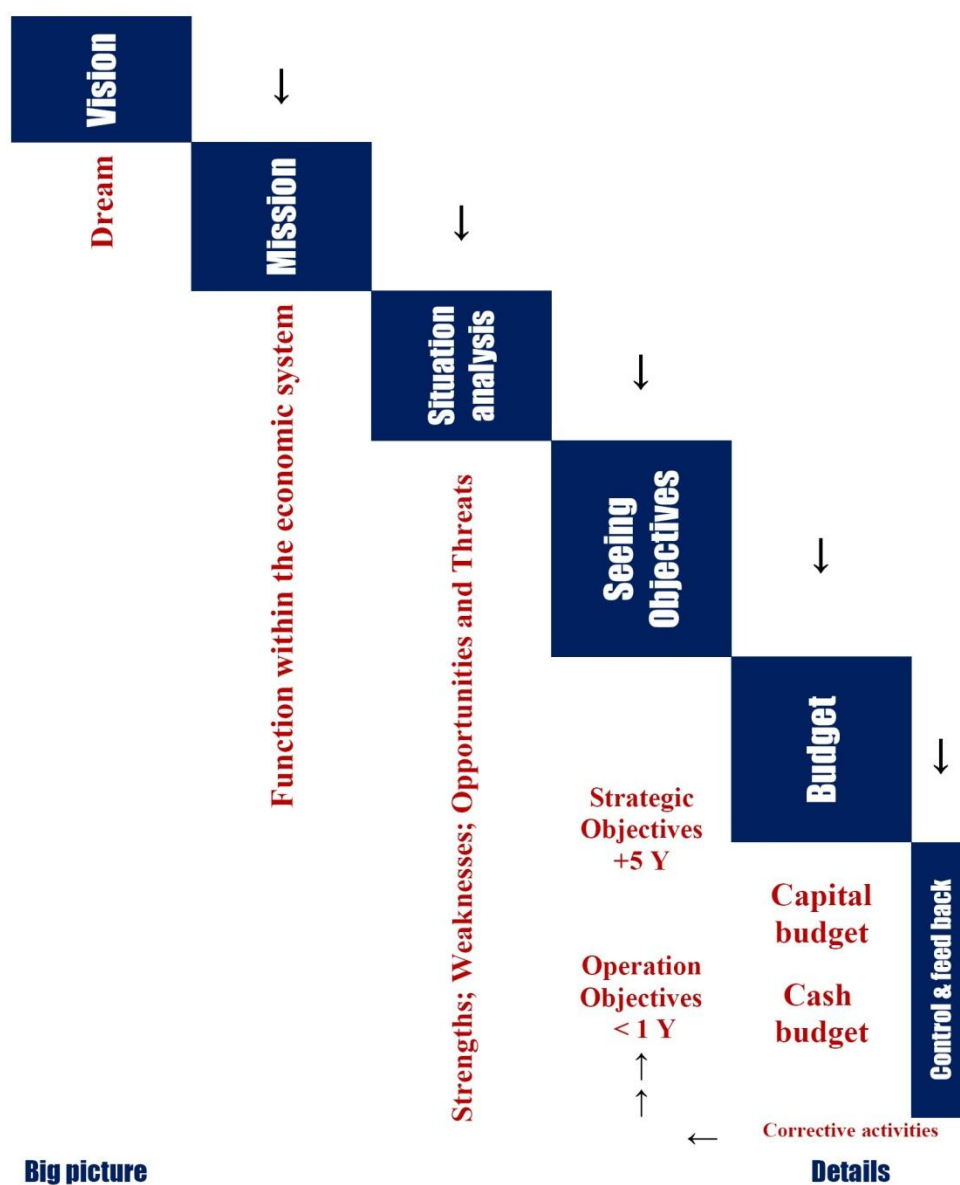
## 2. Theoretical framework and Literature Review

Since 2020 "Covid-19 pandemic" was happened, substantial study has been performed on a many of topics, ranging from the "medical side" and "human side" to "business units" and "investment and economics side". Covid-19 pandemic was particularly important for human life and business activities, since several patterns of business and society changed; several towns and nations chose to restrict and limit economic activity (Bapuji et al., 2020; Wagdi and Rabie, 2021). The current outbreak had severe economic consequences around the globe, and it did not seem as if every country would be untouched. This is a type of systemic risk. Not only did this have economic ramifications, but it also had a societal influence, resulting in dramatic transformations in the activities of businesses and the behaviour of customers (Naeem, 2020; Donthu and Gustafsson, 2020; Mehta et. al., 2021; Eger et. al., 2021; Mehroliia et. al., 2021). Table (1) Illustrates the research related to COVID-19, the study found many effects resulting from COVID-19 on several fields:

**Table (1)** Literature Review for impact COVID-19 pandemic on business activities

Education	Fernandez & Shaw, 2020; Al-Hosan et. al., 2020; Zhu and Liu, 2020; Krishnamurthy 2020; Helliwell, et al., 2020; Mahmood, 2021; Pokhrel and Chhetri, 202; Lapitan et. al., 2021.
Financial Services	Alber and Dabour, 2020; Disemadi and Shaleh 2020; Ozili 2020; Elnahass et. al., 2021; Naeem and Ozuem, 2021; Phuong, 2021;
Healthcare	Palladino, 2021; Verger et. al., 2021; Huynh et. al., 2021; Wagdi and Abouzeid, 2021.
Investment	Ratten, 2020; Ortmann et al., 2020; Bretas & Alon, 2020; Talwar et al., 2021; Usman, Ali, Riaz, & Zubair, 2020; Van Eck, Van Melik, & Schapendonk, 2020; Rababah et.. al., 2020; Yoshino et. al., 2021, Seiler 2021
Manufacturing	Belhadi et. al., 2021; Tareq et.al., 2021; Dean et. al., 2021; Zhang and Qi,2021.
Real Estate	Milcheva, 2021; Blakeley 2021; Hoesli and Malle, 2021, Qian et. al., 2021.
Retail	Wang et. al., 2020; Shahbaz, 2020; Cozza, et al., 2020;Kraenzlin et. al., 2020; Shumsky et. al., 2021; Brandtner et. al., 2021; Heald et. al., 2021.
Tourism And Air Transport	Kaushal and Srivastava, 2021; Zhang et. al., 2021; Sharma et. al., 2021; Farzanegan et. al., 202; Gudmundsson et. al., 2021; Sun et. al., 2021; Zhang et. al., 2021; Milne et.al., 2021.

According to the foregoing, there are many changes at business environment that companies have been exposed to that require major changes in their Budget in addition to their strategic objectives. A budget is an operational plan and management tool for an organization that defines the resources and commitments necessary to accomplish the organization's objectives over a certain time period. Budgets are generally quantitative in nature, rather than qualitative. Budgets need managerial approval based on business strategy. Figure No. (1) Illustrates the relationship between business strategy and operational activities.



Source:

Figure No. (1) Framework of business strategy and operational activities

These tools have been used by many companies to determine their strategic position. The current study believes that there are differences between these tools in addition to different preferences according to the industry, and the study believes that what happened before and during the COVID-19 epidemic.

The study finds that the impact of COVID-19 on business units includes the internal environment through social distancing in the workplace and the external environment through changing the behavior, tastes and preferences of customers, which changes the strategic position of business units, especially with the change in project appraisal.

### 3. Methodology

Through a unique framework that to achieve integration between quantitative and qualitative data, the study tests the impact of the COVID-19 on business strategy by identifying Three sets of quantitative data that include data on cases of patients and death at the countries level, as well as data on social distancing in workplaces, according to the data of the World Health Organization and community mobility reports to COVID-19 .against qualitative data Managers' opinions about "the opportunities or constraints of the COVID-19 pandemic" and "the rate of change in the company's strategic plan", according to questionnaire. The study included a sample of 400 managers from ten countries (Egypt; Germany; France, India; Saudi Arabia; Indonesia; Mexico; Russia; South Korea and Nigeria) from four continents.

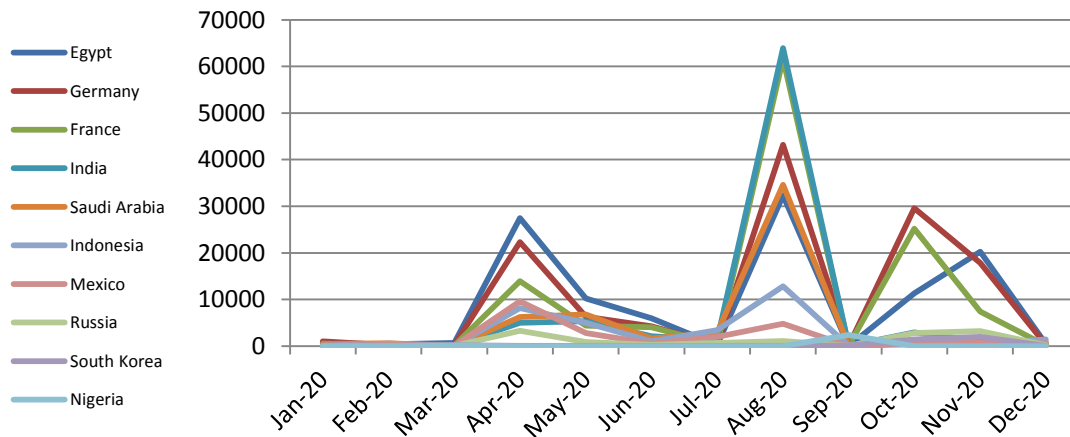
**Table No. (2)** The study variables.

<b>Independent variables</b>	AC	Monthly Average for Cases of COVID-19 for 100,000 human	<b>quantitative variable</b>
	AD	Monthly Average for deaths of COVID-19 for 100,000 human	
	WP	Monthly Average for Social distancing at workplaces	
<b>Dependent Variables</b>	BS	Managers' attitudes to changing business strategy	<b>qualitative variable</b>
	OT	Managers' attitudes to COVID-19 pandemic as an opportunities or threats for business units	

The study tests the stationary data to ensure that the mean and variance are invariant according to a unit root test. For ten cross-sectional units, the hypothesis test is performed using panel data with fixed-effects.

## 4. Data Description and Hypothesis Test

### 4.1 Monthly Cases of COVID-19 for 100,000 human

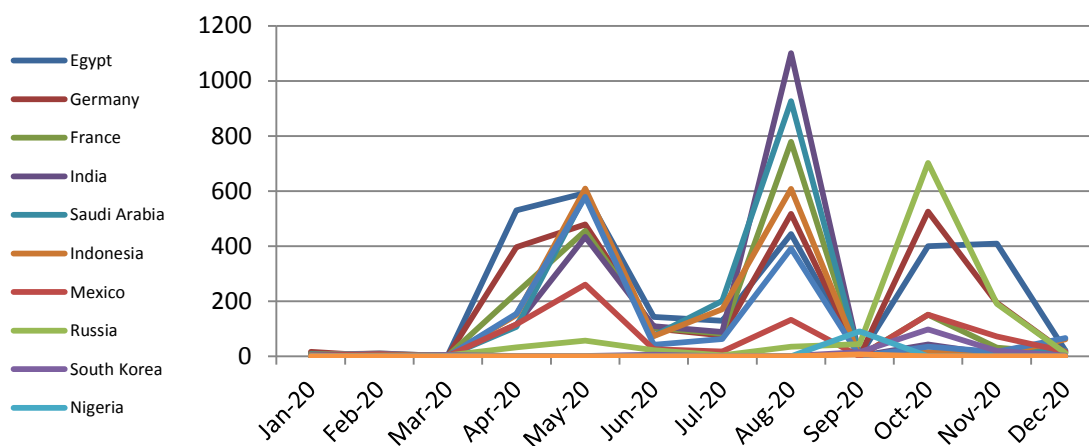


Source: World Health Organization

Figure No. (2) Monthly Average Cases of COVID-19 for 100,000 human

Figures No. (2) Illustrates Monthly Average Cases of COVID-19 for 100,000 human for twelve countries from four continents; There are three waves of epidemic spread, China had the highest rates of cases per 100,000 human in August 2020.

### 4.2 Monthly deaths of COVID-19 per Month for 100,000 human

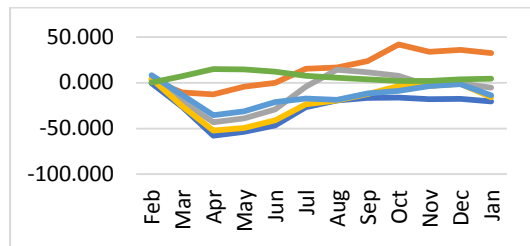


Source: World Health Organization

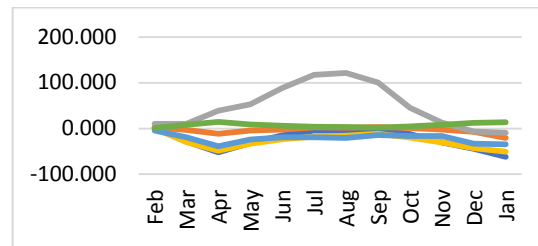
Figure No. (3) Monthly Average deaths of COVID-19 for 100,000 human

Figures No. (3) Illustrates Monthly Average deaths of COVID-19 for 100,000 human for twelve countries from four continents; There are three waves of epidemic deaths, India had the highest rates of deaths per 100,000 human in August 2020.

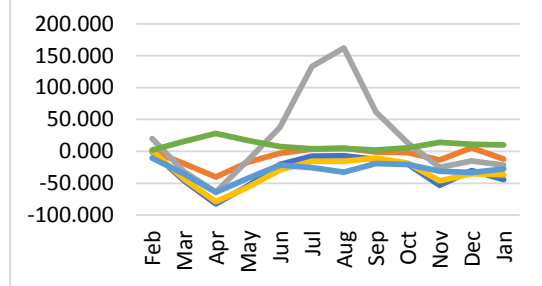
### 4.3 Social distancing



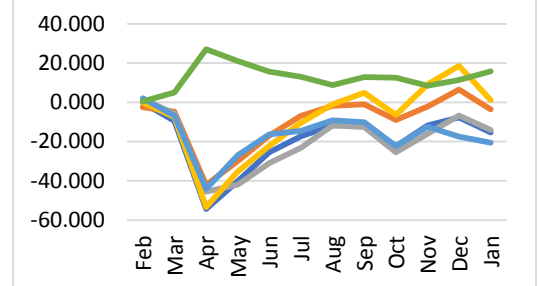
Figures No. (4) Social distancing at Egypt



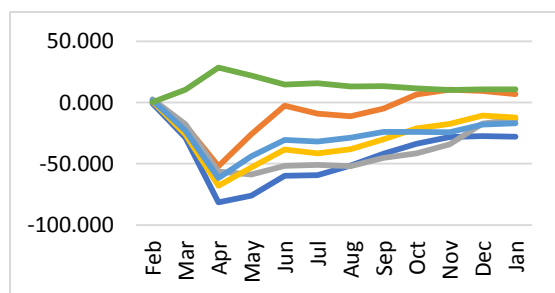
Figures No. (5) Social distancing at Germany



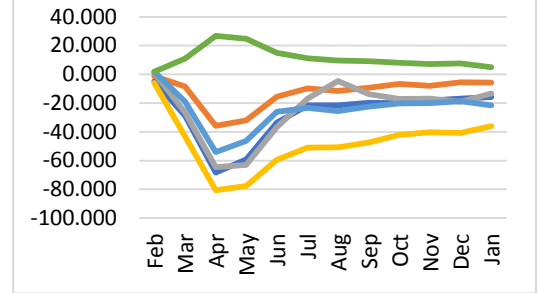
Figures No. (6) Social distancing at France



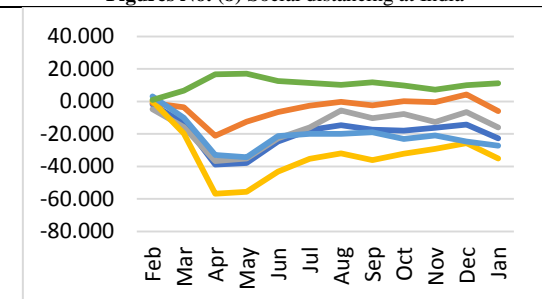
Figures No. (7) Social distancing at Nigeria



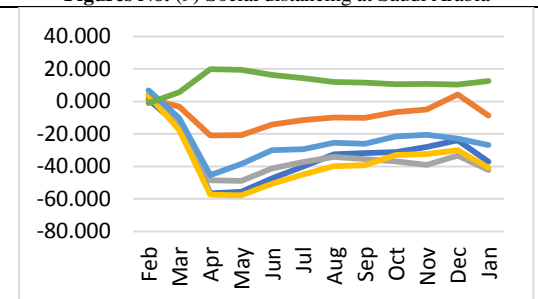
Figures No. (8) Social distancing at India



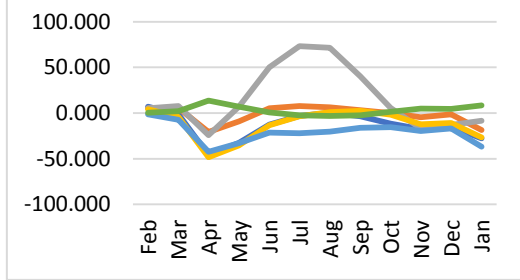
Figures No. (9) Social distancing at Saudi Arabia



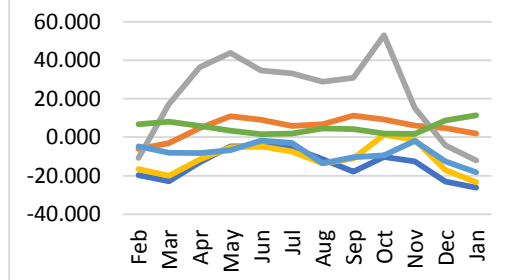
Figures No. (10) Social distancing at Indonesia



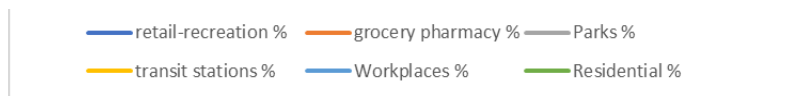
Figures No. (11) Social distancing at Mexico



Figures No. (12) Social distancing at Russia



Figures No. (13) Social distancing at South Korea



Source: Community Mobility Reports to COVID-19

Figures from No.(4) to No.(13) Illustrates the variation in social distancing rates between countries, whether in workplaces, homes, and so on.

#### 4.4 Examining the impact of COVID-19 pandemic on business strategies.

Based on the theoretical framework and literature review, the study's test following hypotheses:

$H_{(0)}$ : There isn't a significant impact of the COVID-19 pandemic on business strategies based on the country..

$H_{(1)}$ : There is a significant impact of the COVID-19 pandemic on business strategies based on the country.

The study sent a questionnaire via e-mail to company managers in ten countries, with the aim of obtaining 400 responses from managers in 10 different countries, so that there are 40 managers from each country. The first forty responses were accepted, while ignoring the following responses, and by indicating the amount of change using a Likert scale against the average annual data for each country.

**Table No. (3)** First Hypothesis Test.

Model 1: Fixed-effects, using 400 observations  
 Included 10 cross-sectional units  
 Time-series length = 40  
 Dependent variable: BS

	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
const	2.42289	0.211754	11.44	<0.0001	***
AC	0.000287907	5.88377e-05	4.893	<0.0001	***
AD	-0.00645497	0.00322592	-2.001	0.0461	**
WP	-0.0298849	0.0135478	-2.206	0.0280	**
Mean dependent var	2.065000	S.D. dependent var		1.050492	
Sum squared resid	381.8452	S.E. of regression		0.993318	
LSDV R-squared	0.132781	Within R-squared		0.075547	
LSDV F(12, 387)	4.937836	P-value(F)		1.28e-07	
Log-likelihood	-558.2856	Akaike criterion		1142.571	
Schwarz criterion	1194.460	Hannan-Quinn		1163.120	
rho	-0.232528	Durbin-Watson		2.414201	

Joint test on named regressors -  
 Test statistic:  $F(3, 387) = 10.542$   
 with p-value =  $P(F(3, 387) > 10.542) = 1.1156e-006$   
 Test for differing group intercepts -  
 Null hypothesis: The groups have a common intercept  
 Test statistic:  $F(9, 387) = 3.06978$   
 with p-value =  $P(F(9, 387) > 3.06978) = 0.00143886$

According to table No. (3), statistical analysis illustrates that the model is significant at the (0.000) level with an F value of (10.542) when (3 and 387) and with an average R-squared of (7.55%). As a result, the COVID-19 pandemic has had a significant impact on the change in Business Strategy. Now, the study rejects the Null hypothesis and accepts the following alternative hypothesis:

$H_{(1)}$ : There is a significant impact of the COVID-19 pandemic on business strategies based on the country.

#### 4.5 Examining the COVID-19 pandemic as an opportunities or threats for business units.

Based on the theoretical framework and literature review, the study's test following hypotheses:

$H_{(0)}$ : There isn't a significant difference in assessing the opportunities or threats resulting from the COVID-19 pandemic on the business unit strategy based on types of industry.

$H_{(1)}$ : There is a significant difference in assessing the opportunities or threats resulting from the COVID-19 pandemic on the business unit strategy based on types of industry.

The study compared more than two independent samples of varying sample sizes using a non-parametric technique. A significant Kruskal–Wallis test suggests that at least one sample stochastically outperforms the other. The test does not specify the location of this stochastic dominance or the number of pairings of groups for which it occurs. To test for stochastic dominance between certain sample pairings, The null hypothesis is that all groups' medians are equal, while the alternative hypothesis is that at least one group's population median is different from the population median of at least one other group.



Table No. (3) Mean Rank for industries

Ranks	Industry	N	Mean Rank	
OT	Aerospace Industry.	1	26	60.73077
	Agriculture industry.	2	44	237.9545
	Construction Industry.	3	24	100.5
	Education Industry.	4	47	65.5
	Electronics Industry.	5	10	220.3
	Energy Industry	6	6	238.5
	Financial Services Industry.	7	14	230.0714
	Food Industry	8	28	270.6429
	Health care Industry	9	24	303
	Hospitality Industry	10	28	60.21429
	Manufacturing Industry	11	40	188.45
	Media and Entertainment Industry	12	30	234.5
	Mining Industry	13	4	238.5
	Pharmaceutical Industry.	14	30	354.8333
	Telecommunication industry.	15	32	352.5
	Transport Industry	16	13	139.8077
	Total		400	

Table No. (4) Second Hypothesis Test.

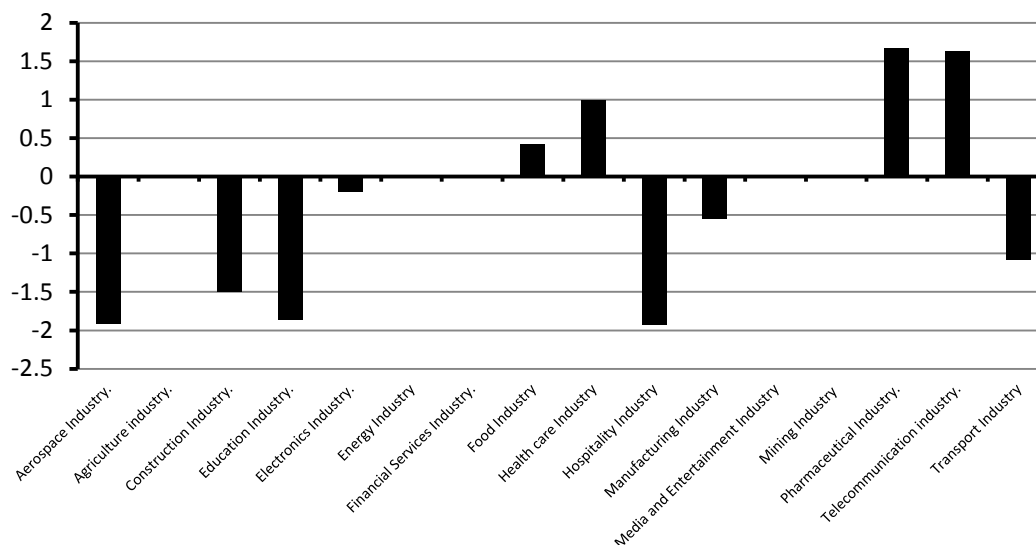
Test Statistics <sup>a,b</sup>		OT
Chi-Square		328.6107
df		15
Asymp. Sig.		0
a	Kruskal Wallis Test	
b	Grouping Variable: INDUSTRY	

According to tables No. (3 & 4), statistical analysis illustrates that the value of Chi-Square was (328.61); it is significant at the (0.000); Now, the study rejects the Null hypothesis and accepts the following alternative hypothesis:

$H_{(1)}$ : There is a significant difference in assessing the opportunities or threats resulting from the COVID-19 pandemic on the business unit strategy based on types of industry.

## 5. Conclusions and Recommendations

The COVID-19 epidemic was a shock to humans, causing many changes in lifestyles and changing the behavior of customers and businesses. Life and business changed as a result of this epidemic, which imposed restrictions on many industries in exchange for growth opportunities For other industries That is agree with both Kasinger et. al. (2021); Wagdi and Rabie (2021)



**Figures No. (14)** Mean of assessing the opportunities or threats resulting from the COVID-19 pandemic on the business unit strategy based on types of industry.

Figures No. (14) Show that the "Pharmaceutical Industry" and "Telecommunication Industry" have the most opportunities for growth under the COVID-19 epidemic, while the "Aerospace Industry" and "Education Industry" has the most threats to growth under the COVID-19 pandemic, based on data collected from the questionnaire.

There was a lot of government intervention in a number of countries to minimize the negative effects on individuals and businesses, and digitization was the preferred mechanism for many, which led to a change in business strategies, especially marketing strategies (product distribution channels), in addition to supporting entrepreneurship that seeks to serve individuals and society, by providing added value to stakeholders (Wagdi and Hasaneen2019)..

The COVID-19 epidemic has changed the strategic position of all companies; it is a type of systematic risk, so the COVID-19 epidemic has led to a modification in the objectives and operational plans, to say the least. Tools to analyze the environment include Michael Porter Model (Five Forces Model); Political-Economic-Social-Technological (PEST) analysis; Strengths, Weaknesses, Opportunities and Threats (SWOTs) analysis; Scenario planning; Critical success factor analysis(Grundy, 2006; Koumparoulis, 2013; Amer et. al., 2013; Ho, 2014; Zhao et. al., 2016; Gürel and Tat, 2017; Elavarasan et. al., 2020; Zhang et.al., 2020; Wang and Wang, 2020; Muktadir et. al., 2020); Through the use of three indicators of the COVID-19 epidemic, including indicators of injury, death and social distancing in workplaces, in addition to managers' from ten countries answer about changing business strategy. Finally, the impact of the Covid-19 epidemic on changing business strategies was 7.55%. The study can back that to restrictions social distancing; the change in customers' behavior; and finally, the change in projects appraisal.

The research on the COVID-19 epidemic and its reflection on lifestyle and business activities will continue. The study recommends analyzing this impact within controlling variables such as the type of industry and the size of the company in future studies.

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## Appendix A

### Dear Manager,

We are doing a questionnaire about the impact of the COVID-19 pandemic on Business Strategy according two levels: countries and industries in different countries. I would be grateful if you would kindly answer the following questions. No companies, individuals or universities will be identified, and only aggregate data will be made public. I will send you the results soon.

**Best regards and thanks, O. Wagdi and N. Essawy**

#### **Q1: The COVID-19 pandemic has an impact on the change in your business unit strategies.**

- Strongly Agree
- Agree
- I do not know
- Object
- Strongly object

#### **Q2: The assessing from the COVID-19 pandemic on the business unit strategy as**

- Strong opportunities
- Opportunities
- Don't opportunities or threats
- Threats
- Strong threats

#### **Q3: Please select the appropriate industry for your business unit**

- Aerospace Industry.
- Agriculture industry.
- Construction Industry.
- Education Industry.
- Electronics Industry
- Energy Industry
- Financial Services Industry.
- Food Industry
- Health care Industry
- Hospitality Industry
- Manufacturing Industry
- Media and Entertainment Industry
- Mining Industry
- Pharmaceutical Industry.
- Telecommunication industry.
- Transport Industry.
- Other .....

#### **Q4: Please select the current country for your business unit**

- Egypt
- France
- Germany
- India
- Indonesia
- Mexico
- Nigeria
- Russia
- Saudi Arabia
- South Korea
- Other .....