

## **Organizational Resilience in Healthcare Organizations: A Research in the Public and Private Sector**

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### **Abstract**

Organizational resilience is the ability of an organization to plan, organize emergency, crises, intervention, and resurgence in terms of business continuity. The evaluation of organizational resilience helps organizations to increase their awareness on environment and their ability to react to threats. In this respect, this paper firstly aims to evaluate and contrast healthcare organizations' resilience prior to the Covid-19 pandemic. Secondly this paper aims to gather data about the strong and weak sides of healthcare organizations and raise awareness on crises. Besides, it will help healthcare organizations to engage in a fruitful planning process concerning the key risks and crises they face. The research took place in healthcare organizations which have a dynamic and uninterrupted service by nature but have at the same time complexity, diversity, and uncertainty. Data were gathered from the employees of a public university hospital and a private hospital by a survey applied to 350 participants. As the results show, the private hospital dissociates positively from the university hospital in terms of resilience measurements. Participants show their institution's strength in terms of participation in exercises, planning strategies, silo mentality and weakness in encouraging innovation & creativity. Besides, there are significant differences between the responses of decision makers and employees.

**Keywords:** Crisis, Resilience, Organizational Resilience, Healthcare Organization, Business Continuity Management, Covid-19

### **1. INTRODUCTION**

Today organizations do business in a more complex and turbulent environment and face unexpected circumstances due to globalisation, complexity of the supply chains, technological advancements, and interdependencies. Crises and unexpected circumstances to which they get exposed in an unprepared way can affect organizational success on different levels. Due to changing economic structure, crises and unexpected circumstances can be more destructive and increase the possibility of facing a risk. A natural disaster, a financial crisis or a problem in the supply chain can occur more frequently than expected and may affect organizations directly.

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Organizations in ambiguous and threatening circumstances need resilience in order to stay alive, to develop and to compete. Organizations need strong leadership, talented employees, awareness of work environment, ability to manage security defects, communicative talents and adaptability to be resilient. These traits are key factors in fast adaptation, development and to retain their former selves. They are also parallel to a resilient organization that enables to use its strong sides.

It is vital for healthcare organizations to manage key operations, key processes and operational capabilities in order to lessen the effect of unexpected circumstances since health care organizations have critical responsibilities and a complex network compared to other industries. All health care organizations have to intervene in natural or human-oriented disasters and when continuing their operations uninterrupted. COVID-19 pandemic that took the world into captivity is a good example of that. Healthcare organizations are acting in the epicentre of the Covid -19 pandemic. The pandemic shows that healthcare organizations are under risk clinically, operationally, and financially and therefore should be prepared to risk more than ever. In order to handle the present and future shocks. Resilience and strength are needed for healthcare organizations. Under these threats healthcare organizations should formulate emergency and business continuity plans keeping in mind the necessary processes such as staffing and resources including external partners. These plans should be comprehensive, standardized and tested out. Therefore, they should include the training of the staff in terms of the appropriate response to the emergency, test their resiliency and evaluate their potential to face the emergency and for the organization to evaluate fiscal and functional outcomes of the pandemic. Pandemics are concerned with the ability to face disasters and enabling organizational resilience. In order to describe the methodology of the research, a detailed literature review about organizational resilience and crisis management is achieved. In section 2, the methodology of the paper, and in section 3, findings of the research are presented. Lastly in section 4, conclusions and discussions are presented.

## **2. LITERATURE REVIEW**

### **2.1. Organizational Resilience**

Organizations should make efforts to compete in order to survive in ambiguous circumstances and be adaptive to fast-changing environments. Through the changing economical social and environmental periods, organizations will encounter many setbacks and interruptions. These interruptions can pose threats for an organization's assigned position. The success of an organization which operates in a competitive and dynamic environment lies not only within its "survival capacity" but also its "adaptive capability" to adapt to difficult environments (Lampel et al., 2014; Lengnick-Hall et al., 2011). In this respect, resilience is a key behaviour in answering to inescapable negativity which relates to the strategic success, growth, and survival of an organization (King et al., 2015). Therefore, resilience is the key factor for the survival of an organization.

Organizational resilience, when evaluated in terms of business continuity, is the capability of an organization to plan, respond, save, survive, and reinforce during crises and emergency (Bell, 2002; Brand and Jax, 2007; Seville et al., 2008). Crises are apparent after natural disasters, but organizations must handle various crises in daily life such as financial difficulties, problems in supply chain and industrial disasters where organizational resilience can be less visible (Stephenson et al., 2010). The evaluation of resilience enables the organizations to enrich their capability of awareness on the environment and to react to threats.

Crises, though usually associated with negativity, can bring some positive developments as well. According to Meyers (1988), crises give the opportunity to speed up the change process. In that

period, problems that were not on the surface would be realized and solved therefore might bring new strategies and an early warning system might be developed. They might all lead to new competitive advantage. Resilient organizations give way to effective handling of crises and can gain long term success (Coutu, 2002; Horne, 1997) and competitive advantage (Hamel and Välikangas 2003). Therefore, they can change the challenges into opportunities, develop and be better. Only a resilient organization can evolve for the better.

Organizational resilience is the ability to respond to destructive change effectively, change challenges into opportunity and develop in a world of ambiguity. The capability of an organization to form resilience and manage the crises and transitions successfully lies in the capacity of integrating to activate basic applications and procedures with the help of its staff (Lengnick-Hall et al., 2011; Shin et al., 2012). There are opportunities inherent in every crisis. New leaders may arise in times of crises and crises may be advantageous in the long term, are liable to change in business processes and can create opportunities (Burnett, 1998; Freeman, 2004). But even a crisis is managed successfully, there will be an important change in the organization (Keown-McMullan, 1997) and it lies in the capacity of the organization to adapt to change.

## **2.2. Crisis and Crisis Management**

There is a consensus on the definition of crisis in management literature. This consensus is put together by Pearson and Clair (1998): "An organizational crisis is a low-probability, high-impact event that threatens the viability of the organization and is characterized by ambiguity of cause, effect, and means of resolution, as well as by a belief that decisions must be made swiftly". Sikich (2002) sees crisis as a series of events or situations not planned beforehand or result in an undesired way. Similarly Gregory (2005) defines crisis, as events that overlap high results, low-probability and ambiguity and which is carried out under time pressure. Prewitt et al. (2011) define crisis as an unprecedented and dramatic event which leads an organization into chaos that can destroy it without an urgent and decisive action. It is a situation that a person or a group faces and that cannot be handled using standard procedures and leads to stress because of the sudden change (Booth, 1993). The ambiguous nature of crises makes crisis planning impossible. Besides, the infinite number of possible crises prevents a universally accepted crisis planning strategy to be implemented and adopted (Penrose, 2000).

The purpose of crisis management is to protect the organization, sector, and partners from harm, prevent the negative effects or lessen them (Coombs, 2012). Crisis management is a designated proactive process that comprises pre, post and during the crisis processes (Three Phase Model) (Coombs, 2014), to prevent or minimize the harm done to an organization and its partners (Simola, 2014). Pre-crisis phase has three subcategories: "perception", "prevention", and "preparation". The purpose is to minimize the risks which can create a crisis and to get ready tactically and strategically. The crisis phase is divided into two subcategories: "recognizing the crisis" and "limiting the crisis". In this phase, it is important how the organization reacts to crisis, communicate with partners and deals with it. Post-crisis phase comes after, when the crisis is solved, and it is evaluated how the organization dealt with the crisis. Their common focus is to be well-prepared to potential crisis (Coombs, 2012). In crisis management literature, there are other proposed crisis management processes (Meyers, 1988; Smith, 1990; Shrivastava, 1993; Mitroff, 1994; Lerbinger, 1997; Burnett, 1998; Harrison, 1999). But when compared to others, three-phase model is a simpler model. In crisis management process, strong decisions have to be made as it contributes to success of evading the crisis and lessen its effects (Center et al., 2008).

Every crisis is unique in itself; it has its own approach as well as its needs. Many disasters have common intervention and preparation aspects which is a solid base for the preparation of threats. The ongoing concern in literature is that new abnormal and shocking crises may occur. By nature, these extraordinary and unique circumstances are not applicable to check lists and protocols. Some procedures suppress resilience, and some make it easier.

### 3. METHODOLOGY

#### 3.1. The Scope and the Purpose

Every organization in its lifetime can face a destructive crisis. A natural disaster, a financial crisis, problems in the supply chain or a problem, affecting people can occur more frequent than expected and affect the organization. That is why in today's world of change and ambiguity, an organization needs resilience to survive. In this respect, this research is carried out to evaluate, compare and contrast the resilience of organizations. The sub-goal of the research is to provide information on strength and weaknesses of organizations and enhance awareness on crises.

Healthcare organizations are structures that harbour ambiguity and complexity where labour and technology are in peak use. They must be resilient to change in order to routinely continue to serve and maintain continuity. Healthcare organizations are structures that involve very important functions like facility security, personnel, medicine, equipment, stock management, medical emergency functions, leadership, quality, integrated emergency management, basic emergency management functions, networking, and coordination. Any loss or disruption occurring in one of those functions will lead to economic and social costs. Other important characteristics of healthcare organizations are their complex structures, vital interdependencies to infrastructure, housing medical hazardous materials/waste, continuous service, staff/client diversity and external factors.

The functions and services listed above make a healthcare organization vital to any economy. The research concentrates on healthcare institutions that have vital importance on society and economy with the services they provide. The research is done in major healthcare organizations in Turkey, comprising a public university hospital and a private hospital, which are considered among the oldest and largest hospitals. Differences in attitudes between the executives and employees will reduce the effectiveness of the reactions of the organizations to crises. That is why, the research includes decision makers (executives) and employees to understand their attitudes towards organizational resilience.

#### 3.2. The Sample of the Research

The study can be classified as a descriptive study. The sample of the research covers all the staff (doctors, nurses, laboratory assistants, biologists, administrative and technical staff etc.) except security, cleaning and catering personnel in a high-density patient capacity of a well-known public university hospital and a private hospital. The staff included are the ones who completed their orientation (the ones who worked over a year) at the institution. The sample is determined by stratified sampling.

#### 3.3. Tools for Measurement and Collecting Data

This study consists of two independent phases. The first phase is exploratory which shows key risks and crises participants face which will be guiding for a fruitful planning period. Besides, to be prepared for the unexpected circumstances, manage them, and develop a plan (BCI Horizon Scan Report 2020), and test them (BCI, 2010) and inform the staff is valuable. This perspective will be useful to pinpoint the existing conditions of the organization and to create awareness. The second phase which is a descriptive comparison of the organizational resilience therefore; it is important to raise awareness and present the current situation in this respect. The second phase dwells on the comparison of organizational resilience.

***An exploratory research among 500 healthcare staff:*** The first phase which investigates highest risks that lead to crises, crises they experienced within the last five years in their institution, plans that their institution have, and people participated in those plans.

**Measurement of organizational resilience and comparison between university hospital and private hospital among 350 healthcare staff:** The questionnaire used at this phase has two sections. The first section comprises questions to identify the demographic characteristics of the participants (position, job title, qualifications, educational background, age, gender, marital status, work, and institutional experience). The second section comprises a 13-item organizational resilience scale to measure the organizational resilience of the institutions. In this phase, the short version (BRT-13B) of the "Benchmark Resilience Tool (BRT-53)" developed by Lee et al. (2013) and which has been approved by Whitman et al. (2013) was used. Sharma and Sharma (2015) evaluated the psychometric properties of this version in an example of twelve Information Technology employees. More recently, Gonçalves et al. (2019) validated the Spanish version of BRT-13B and reproduced two factors in the original scale. These two factors are Adaptive Capacity and Planning. Adaptive Capacity indicators are (8 indicators): (1) Silo Mentality, (2) Capability and Capacity of Internal Resources, (3) Staff Engagement and Involvement, (4) Information and Knowledge, (5) Leadership, Management and Governance Structures, (6) Innovation and Creativity, (7) Devolved and Responsive Decision Making, (8) Internal and External Situation Monitoring and Reporting. Planning comprises of five indicators: (1) Planning Strategies, (2) Participation in Exercises, (3) Proactive Posture, (4) Capability & Capacity of External Resources, (5) Recovery Priorities. As a result, factor analysis done show BRT-13B scale's original two factor structure, reliance, and validity. In Table 1, the factor analysis and reliability scale are shown.

### **3.4. Data Analysis**

All statistical analyzes were performed using IBM SPSS. Descriptive statistical analyzes (mean, standard deviation, frequency, percentage) were used while evaluating the study data. In addition, t-test was performed to determine whether there was a statistical difference between the groups and the results were interpreted

### **3.5. Demographic Information**

350 participants who have participated to the questionnaire are from healthcare institutions 132 of which were from the private hospital and 218 were from the public university hospital. 69% of participants are women. 64.8% are between 31-50 years of age. 44.6% have more than 10 years of seniority in the institution. 20.9% have managerial positions. 70% of the participants have undergraduate and graduate degrees.

## **4. FINDINGS**

### **4.1. The First Phase**

In this phase of the research, 500 participants are asked to name the five high risks that can lead to a crisis (Table 2). 55.7% of the responses named an earthquake, and 50.9 % named financial crises. Other responses referred to 50.3% and 47.7% inaccessibility to critical medicines and devices, epidemics/pandemics respectively.

The types of crises experienced within the last 5 years are shown in Table 3. Out of 208 participants 17.4% of them witnessed a disaster and fire, 16.3% of them mentioned that they experienced a financial crisis. "Sudden and critical changes in human resources" ranked in 7th place with a ratio 28.7% in Table 2 and ranked in 3rd place with a ratio of 11.5% in Table 3.

Table 1. Organizational Resilience Scale Factor Analysis

Factor Analysis				
Factor Name	Question	Factor Weights	Factor Communalities	Reliability Scale
<b>Adaptive Capacity</b>	A5	0.994	48.4	0.906
	A8	0.942		
	A7	0.801		
	A6	0.787		
	A3	0.637		
	A2	0.623		
	A1	0.596		
	A4	0.506		
<b>Planning</b>	P1	0.692	11.8	0.776
	P2	0.629		
	P4	0.569		
	P3	0.550		
	P5	0.518		
<b>Total</b>			60.2	0.907
		Kaiser Meyer Reliability Scale		0.928
		Barlett's Test of Sphericity Chi- Square		2289.783
		sd		78
		p value		0

Table 2. Danger/Risk That Can Lead to Crisis

Danger/Risk N: 500	%
Earthquake	55.7
Disaster or Fire	50.3
Financial Crisis	50.9
Inaccessibility to critical medicines and devices	47.7
Epidemics/Pandemics	40.5
Loss of critical services (Electricity, water, gas, telecommunication)	35.3
Sudden and critical changes in human resources	28.7
Loss of data source (Hospital information management system outage , virus)	27.9
Dissemination of radiological agents or hazardous substances	23.0
Technological Change	21.3

## Organizational Resilience in Healthcare Organizations: A Research in the Public and Private Sector

Loss of Reputation	14.4
Failure of a Key Supplier	14.1
Terrorism	14.1
Information Security Breach	10.3
Regulatory Changes	6.9

Table 3. Types of Crises Experienced in the Last 5 Years in the Institution

<b>Types of crisis experienced in the last 5 years in the institution n: 208- 41.6%</b>	<b>%</b>
Disaster or Fire	17.4
Financial Crisis	16.3
Sudden and critical changes in human resource	11.5
Loss of Critical Services (Electricity, Water, Gas, Telecommunication)	11.1
Inaccessibility to critical medicines and devices	10.1
Terrorism	6.7
Regulatory Changes	6.7
Loss of data source (HIMS cut, Virus)	5.3
Technological Change	4.3
Dissemination of radiological agents or hazardous substances	3.8
Flood	3.4
Epidemics/Pandemics	3.4

In table 4, responses given by executives and non- executives show that staff does not share the executives point of view in terms of roles and plans. It also shows that these plans and roles are not shared with staff. Participants were asked whether there were staff taking on roles such as risk management, crisis management, emergency management, business continuity. As other question participants were asked their institution had business continuity, emergency, crisis, evacuation, or other plans.

Table 4. Plans and Roles

	<b>Yes, that role exists</b>		<b>Yes, that plan exists</b>	
	Managerial N: 108	Non-managerial N:389	Managerial N:108	Non-managerial N:389
Risk Management	55.6%	26.6%		
Crisis Management	43.5%	26.6%	22.4%	24.1%
Emergency Management	63.0%	42.7%	80.2%	45.3%
Business Continuity Management	50%	30,3%	19.7%	32.9%
Evacuation Plan			53.9%	31%
None of the Above	6.5%	7.3%	2.6%	7.3%
I do not know	14.8%	29.9%	9.2%	31.8%

472 participants answered the question of how consistently the plans are tested. 41% of the participants responded they did not know, 24% responded "once in a year", 19% responded "barely never", 12% responded "twice a year", 4% responded "once in two years".

#### 4.2. The Second Phase of the Research

In this phase of the research, organizational resilience is measured between a private hospital and a public university hospital. In Table 5, there is differentiation in 6 of the indicators out of 13 which constitutes planning and adaptive capacity among 350 participants. Proactive posture resilience is differentiated meaningfully between private hospital and university hospital. Results show that staff in private hospital have more resilience than university hospital staff ( $p=0.00<0.05$ ). Besides, there are differences in indicators of "capability & capacity of external resources" and "recovery priorities". There are meaningful differences in indicators of "capability and capacity of internal sources", "innovation and creativity" and "devolved & responsive decision making" which forms the adaptive capacity.

Table 5. Differences Between Private Hospital and Public University Hospital

	Averages		t-test		Results
	Private Hospital (N=132)	Public University Hospital (N=218)	t	p	Result
<b>Planning Strategies</b>	80.3	78.1	0.951	0.342	$p>0.05$
<b>Participation in Exercises</b>	87.1	84.7	1.190	0.235	$p>0.05$
<b>Proactive Posture</b>	72.6	63.8	3.620	0.000	$p<0.05$
<b>Capability &amp; Capacity of External Resources</b>	71.7	66.1	2.422	0.016	$p<0.05$
<b>Recovery Priorities</b>	68.6	63.5	2.184	0.030	$p<0.05$
<b>Silo Mentality</b>	73.5	69.6	1.561	0.119	$p>0.05$
<b>Capability &amp; Capacity of Internal Resources</b>	63.8	58.1	2.125	0.034	$p<0.05$
<b>Staff Engagement &amp; Involvement</b>	66.1	65.1	0.375	0.708	$p>0.05$
<b>Information &amp; Knowledge</b>	70.2	69.3	0.390	0.697	$p>0.05$
<b>Leadership, Management &amp; Governance Structures</b>	64.1	61.1	1.186	0.237	$p>0.05$
<b>Innovation &amp; Creativity</b>	59.7	51.6	3.003	0.003	$p<0.05$
<b>Devolved &amp; Responsive Decision Making</b>	64.4	59.4	2.080	0.038	$p<0.05$
<b>Internal &amp; External Situation Monitoring &amp; Reporting</b>	63.0	63.7	-0.245	0.807	$p>0.05$
<b>Total</b>	69.6	65.6	2.348	0.019	$p<0.05$

As shown in Table 6 there are differences in answers except proactive posture in the responses of executives and non-executives.



Table 6. Differences Between Managers and Staff

	Averages (%)		t-test		Results
	Managerial (N=73)	Non-managerial (N=277)	t	p	Result
<b>Planning Strategies</b>	84.4	77.5	2.490	0.013	p<0.05
<b>Participation in Exercises</b>	89.3	84.6	1.923	0.045	p<0.05
<b>Proactive Posture</b>	70.4	66,2	1.424	0.155	p>0.05
<b>Capability &amp; Capacity of External Resources</b>	76.4	66.0	3.825	0.000	p<0.05
<b>Recovery Priorities</b>	70.1	64.2	2.114	0.035	p<0.05
<b>Silo Mentality</b>	77.3	69.5	2.668	0.008	p<0.05
<b>Capability &amp; Capacity of Internal Resources</b>	68.5	58.1	3.284	0.001	p<0.05
<b>Staff Engagement &amp; Involvement</b>	72.6	63,6	3.104	0.002	p<0.05
<b>Information &amp; Knowledge</b>	74.0	68.4	2.050	0.041	p<0.05
<b>Leadership, Management &amp; Governance Structures</b>	72.9	59.4	4.597	0.000	p<0.05
<b>Innovation &amp; Creativity</b>	64.1	52.1	3.732	0.000	p<0.05
<b>Devolved &amp; Responsive Decision Making</b>	71.5	58.6	4.589	0.000	p<0.05
<b>Internal &amp; External Situation Monitoring &amp; Reporting</b>	72.9	60.9	3.916	0.000	p<0.05
<b>Total</b>	74.2	65.3	4.538	0.000	p<0.05

## 5. CONCLUSION AND DISCUSSIONS

Healthcare organizations are environments where information and technology are intensively used but involve high degrees of ambiguity, diversity, and interactive complexity at the same time (Amalberti, 2013). Workers continuously face change and development. Besides these internal changes, external changes such as enlarging and complicating supply chains, disasters and accidents effect healthcare organizations and disturb business continuity. That is why it is important for organizations to develop strategies to define internal and external impacts for predicted and unpredicted events that leave them defenceless (Hamel and Välikangas 2003) and form a resilient capacity.

As the industrialized world goes on developing complex technologies, as the evolution and change ratio increase, so the difficulties, crises and destruction will occur. Before an organization is tested with crises, it is necessary to understand resilience, the gaps between business connections and be informed about strengths and weaknesses. This research, besides measuring their resilience,

gives information to healthcare organizations about their strengths and weaknesses and gives ideas about a Business Continuity Planning process.

The resilience strength indicators of both healthcare organizations are participation in exercises, planning strategies and silo mentality. These results show that communication and activities are carried out well in daily operations, departmental and organizational limits do not prevent sharing skills and ideas and therefore, to overcome the problems that arise pertaining to crises, information and skills can be shared easily between the departments. The weakest resilience indicator is innovation & creativity. This weak indicator shows that workers are not encouraged to find new methods and develop solutions to existing problems. This is expected to affect the organization negatively.

This research is carried out on staff and executives of a large private hospital and a large public university hospital. In the future there will be more research on resilience that considers the health system as a whole or more comparisons on different sectors which will provide contribution to crisis management and organizational resilience. Individuals and organizations become resilient only if they are in a process of developing resilience capabilities. Institutions can benefit from increasing resilience when they pay heed to people who keep the management strategies in mind (Grawitch et al., 2006; Varker and Devilly, 2012). That is why future research can bring depth into resilience studies by concentrating on leadership not only on the demographics of the staff and the executives. Researchers in connection with resilience can contribute to resilience and competitive factors for businesses in different fields by doing a research on resilience and competition or resilient organizations and competitive advantage. Besides, studies that dwell on the size of the organizations, crisis experience, the relationship between resilience and crisis could be beneficial. Since this research is carried out before the COVID - 19 pandemic, we tested health organizations resilience capacity before it actually affected the whole world. So, it will be important to know how resilient health organizations were with the ongoing pandemic.

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