

Influence of Institutional Pressure on the Hospital Disaster Preparedness in Malaysia

Noor Azzah Said *

*Department of Technology and Supply Chain Management Studies, Universiti Teknologi
MARA Cawangan Selangor, 42300 Puncak Alam, Selangor
Email: azzah074@uitm.edu.my*

Suzyrman Sibly

Centre for Global Sustainability Studies, Universiti Sains Malaysia, 11800 Penang, Malaysia

Azlan Amran

Graduate School of Business, Universiti Sains Malaysia, 11800 Penang, Malaysia

Sharifah Nurlaili Farhana Syed Azhar

Centre for Global Sustainability Studies, Universiti Sains Malaysia, 11800 Penang, Malaysia

Nor Hasiroh Said

Jabatan Perubatan (Ward 12A), Hospital Seberang Jaya, 13700 Perai, Penang

** Corresponding Author*

Abstract

Purpose: This paper focuses on exploring the effect of institutional pressure towards disaster preparedness in Malaysian hospitals.

Design/methodology/approach: This study used a quantitative approach with correlation research design. A total of 139 government hospitals in Malaysia were assessed to understand their level of disaster preparedness during the event of a disaster. SmartPLS was applied to assess the relationship between the explanatory factors and hospital disaster preparedness.

Findings: The findings indicate that institutional pressure influence hospital disaster preparedness

Research limitations: The findings of this study may not be generalized to both private hospitals and teaching hospitals.

Practical implications: This study emphasises the key role of the government in improving the policy implementation process (policy and policymakers) to encourage the practices of hospital disaster preparedness

Originality/value: This paper reviews the institutional theory that deals with hospital disaster preparedness within the Malaysian context, then develops a conceptual framework that is useful to make sound decision towards disaster risk reduction (DRR).

Keywords: Institutional theory, institutional pressure, hospital disaster preparedness, government hospitals, Malaysia

Introduction

The occurrence of a disaster is often rapid and without notice, causing not only deaths but also financial and physical losses. As disaster preparedness is deemed more efficient and may lower the expenses associated with disasters, disaster management studies are also highlighting it rather than mere relief and response. In the aftermath of various incidents involving hospitals such as building collapse, disaster preparedness has been one of the aspects being taken into account. Despite its known significance, hospital disaster preparedness has been increasingly warranted in this day and age. Since a lower degree of disaster preparedness makes hospitals more vulnerable to disasters, it is important to review hospital disaster preparedness. Understanding the factors that hospitals should consider while preparing for disasters is essential because it will help them respond promptly in the event of an emergency. This paper postulates that external pressures have a significant impact on hospital disaster preparedness. In this regard, by incorporating the institutional theory this paper proposes a conceptual framework for improving hospital disaster preparedness in Malaysia.

Literature Review

Hospital Disaster Preparedness

Just like other entities, hospitals are also vulnerable to any direct or indirect disaster events. Hospitals provide medical assistance and treatments to disaster victims by which it is important to ensure their life continuity; however, it has been proven in several incidents that disasters cause damage to hospitals, collapse, and leave them with no ability to completely proceed with their daily operations to the degree that the role of hospitals as a responsible entity in offering medical assistance and treatments at the time of disasters get affected. The impact from hospital operations to stop as people direly need their service is incredibly huge. There are many examples of health infrastructure from sophisticated hospitals to small but important health centres, which have been severely affected by the disaster. In 1993, a devastating damage as well as life, buildings, and infrastructure losses occurred due to the Midwest flood that struck Des Moines; in addition, 6 hospitals were also affected. Eight years later, on 26 January 2001, an earthquake with a magnitude of 6.9 strike Gujarat, India had claimed a total of 19,000 lives and badly destroyed 227 healthcare facilities. Further in Kutch, 2 hospitals, 8 community health centres, 42 primary health care centres, 37 dispensaries, and 227 sub-centres were also reported to be completely damaged, hence forcing their daily operations to come to a halt (Roy, Shah, Patel, & Coughlin, 2002). On the other hand, as reported from Pan American Health Organization (2004), a Category 3 hurricane that took place on 7 September 2004 known as the Hurricane Ivan 2004 had caused massive damage to a few hospitals in Grenada, Jamaica, and Cayman Islands. Further, in Japan, a public hospital in Toyooka, Hyogo Prefecture was flooded by the 2004 Typhoon and the floodwater measuring 1.5 meters in the 2005 Typhoon had also drowned Junwakai Memorial Hospital in Miyazaki. However, the Southeast Asia earthquake and Indian Ocean Tsunami were the most unforgettable and impactful disaster that had ever happened the world. Taking place on Sunday, 26 December 2004, the world had witnessed the west part of Northern Sumatera to be shaken by an extremely massive earthquake with a magnitude of 9.0 (Tahir & Ahmad, 2014). It had caused huge losses and fatalities of many countries such as Indonesia, Malaysia, Thailand, India, Myanmar, Sri Lanka, Maldives and a few others (World Health Organization & Centers for Disease Control and Prevention, 2005). As consequences, more than 225,000 people were dead and millions of lives were awfully affected aside from having tenth of millions losses (Athukorala & Resosudarmo, 2005). In Ireland, the flood event in July 2013 that occurred had resulted in Letterkenny University

Hospital to be closed for nine months. A year later, due to another damage in another flood occasion, this hospital had to shut down again (Maguire, 2014). As hospitals have been affected in the wake of natural disasters around the world, the same also goes for Malaysia. In Malaysia, the flood occurring at the end of 2014 in Kelantan had a big impact on hospitals, where it affected all hospitals in Kelantan and four of the hospitals were unable to carry out their daily operations as the flood had drowned their medical equipment. Eventually, in the whole state, the only hospital that was able to operate and function was Hospital Universiti Sains Malaysia (HUSM).

Institutional Theory

The following research question was addressed in this paper: “How can we conceptualize factors that influence disaster preparedness among hospitals in Malaysia?” It has been suggested by many literatures that preparedness can be achieved better by organizations if the key drivers that drive the preparedness of organizations are understood. In line with this argument, the institutional theory developed by DiMaggio and Powell (1983) has been applied in many literatures to assess the overview of their organization preparedness. According to DiMaggio and Powell (1983), pressure on organizations is exerted by institutions in the forms of coercive, mimetic, and normative isomorphisms. Two kinds of pressures experienced by the particular organizations resulted in coercive isomorphism. Firstly, other organizations exert the pressure of which the pressured organizations are dependent on and secondly, it is from societal expectation within the locality itself.

On the other hand, coercive isomorphism is developed by the conformation to social expectations of the society as well as imposition of standard operating procedures and legalized rules through government mandate. Hence, the assumption is that various stakeholders such as shareholders, political and legislative bodies, lending institutions, and the public exert both formal and informal pressures on organization. Similarly, hospitals might exert pressure from the ministry of health, local community, volunteers, insurance company, professional bodies, and the federal government.

DiMaggio and Powell (1983) eloquently stated that mimetic isomorphism takes place as companies search for exemplary organizations to be mimicked, where they seek practices of similar organizations within the same field, deemed more legitimate or successful especially in the uncertainty situations over goals, technologies and means-end relationships, and in a way that mimic their institutional characteristics and features. By nature, organizations want to be perceived as socially acceptable in their field. As other hospitals develop and act in particular institutional behavior and manners, the hospitals will feel more pressured as they have to adopt and adapt to these changes if they wish to incorporate similar practices and behaviors in their operation as well.

When group norms adopt certain institutional practices, the outcome is known as normative isomorphism (DiMaggio and Powell, 1983). Surely, normative isomorphism is deemed imposing restrictions on social behavior (Sherer and Meyerhoefer, 2016). This isomorphism forces hospitals to have their choices influenced by external factors in terms of norms, social behaviors, and values, hence making the organization to be aware of the changes made by other organizations from time to time.

Theoretical Framework and Hypothesis Development

In this study, institutional theory outlines the foundation for the examination of the determinants of hospital disaster preparedness in Malaysia. Institutional theory states that organisational practices will become institutionalised over time. Organisations change not necessarily due to the aspiration to be more effective and efficient but rather, because of the

pressure to be homogeneous. In other words, organisations do not necessarily compete for resources and customers but rather, due to the pressure of becoming isomorphic to obtain social legitimacy. The basic foundation of institutional theory suggests that organisations within the same field will conform to similar practices for legitimacy purposes.

Institutional theory is significant in the discussion on rules, norms, and beliefs as well as the emphasis on the need to be in accordance with the institutional rules and norms so that legitimacy for the organisation's existence can be obtained. While these common sets of values, norms, and beliefs are taken for granted and complied with like a rule-like pattern by organisations, they have developed into institutional logic that guides organisational practices. Hence, institutional theory explains the changes in organisational practices, such as practices in hospital disaster preparedness, as institutional isomorphism.

Williams et al. (2009) conducted a study on the application of institutional theory in order to understand what drives organisations to employ supply chain security as a step to prevent human-made disasters involving the supply chain. Their qualitative findings revealed that the coercive pressure exerted by the government had encouraged the organisations to employ supply chain security. The results suggest that bioterrorism laws have changed the decision-making process of organisations. The respondents in their study indicated that when making organisational decisions, they must comply with the bioterrorism law.

Other researchers such as Acer & Gucl (2017), Drori (2019) and Karyawati, Subroto, Sutrisno, & Saraswati (2020) also indicated that institutional pressures (coercive, normative, or mimetic) result in homogeneity among business organisations. Amran et al. (2012) discovered institutional theory to be a useful underlying theory for examining the relationships between organisational structure, pressures, and organisational response.

Sherer & Meyerhoefer (2016) saw institutional pressure as contributing to the components that form institutions. Similarly, Alesch, Arendt & Petak (2012) contended that the influences of mimetic, normative, and coercive pressures might be crucial for hospital disaster preparedness. Consequently, this study focuses on institutional pressure to identify the factors that influence the preparation for disaster management of hospitals in Malaysia.

Institutional Theory and Hospital Disaster Preparedness

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Normative Pressure

As argued by DiMaggio and Powell (1983), normative, mimetic, and coercive pressures are exerted on organisations by institutions. Normative isomorphism originates from group norms to follow particular institutional practices (DiMaggio & Powell, 1983). According to Chen, Yi, Zhang, & Li (2018), normative pressure occurs when some actors influence the collective values of a focal firm, and professional associations tend to generate such normative pressure. The leading association in the health interest group in Malaysia is the Malaysian Medical Association (MMA) because its membership consists of medical professionals from both private and public hospitals and it is also consulted and facilitated by the MOH. Besides the MMA, some other medical professional organisations such as the Academies of Medicine, Federation of Private Medical Practitioner's Associations of Malaysia, Primary Care Doctor's Organisation of Malaysia (PCDOM), and Association of Managed Care Organisations of Malaysia are also in the health interest group. A professional association for private hospitals, known as Private Hospitals Malaysia, is also involved. These associations aim to influence broader healthcare policy by creating a standard code of conduct or statement for their members that might reasonably influence the decisions on disaster preparedness.

DiMaggio and Powell (1983) stated that training and education structures could lead to normative isomorphism, with drill or disaster training disseminating knowledge and education about disasters. Burrus, Schafer, Giblin, and Haynes (2012) also evidenced the normative pressure from disaster training on local law enforcement agencies. The exposure to disaster training and drill will enable hospital staff to return to their workplace with the required knowledge instilled in their mind.

In addition to normative isomorphism, the values and behaviour of staff towards disasters will be created in response to a disaster activation plan. Such a plan directs medical practitioners to disaster management and the demonstration of behaviour as well as the belief patterns when taking actions during and post-disaster events. In fact, it is a tool that generates accustomed behaviour to activities related to disaster management and the understanding of disaster management.

Mimetic Pressure

Besides normative pressure, mimetic pressure is also influential towards the extent to which hospitals are prepared for disasters. DiMaggio and Powell (1983) justified that organisations follow or copy the practices employed by organisations in the same field to gain legitimacy and handle uncertainty. As more organisations act in a particular way and manner, other

organisations are further pressured to copy and follow these behaviours and practices. This study believes that in order to be socially accepted as well as respected by promoting improved disaster readiness, hospitals in Malaysia tend to prepare for disaster management if disaster preparedness is practised and promoted by the leading hospitals in Malaysia.

Coercive Pressure

Lastly, as described by DiMaggio and Powell (1983), coercive isomorphism is a result of formal and informal pressures on organisations, exerted by the organisations that they depend on as well as by the society's cultural expectations in the settings where the organisations function. Generally, coercive isomorphism takes place due to the imposition of legitimated rules through government mandate and conformation to the social expectations of the society. Thus, coercive pressure from the NSC adds to mimetic and normative pressures as a way to make organisations conform to the practices of disaster preparedness.

In Malaysia, disaster management and relief activities are the responsibility of the NSC, which is under the Prime Minister's Department. The NSC has outlined the roles of hospitals in supporting Emergency Medical Services during disasters in its Directive No. 20 (National Security Council, 1997).

Other than the pressure from the NSC, the flood that occurred in Kelantan in 2014 had prompted the stakeholders of hospitals to expect better disaster preparedness of hospitals in particular, as hospitals serve as the main entity for treating the victims during disasters by providing essential medical care. Hence, it is assumed that many stakeholders such as the MOH, the local community and patients, and volunteers put formal and informal pressures on hospitals. Consequently, this study focuses on institutional pressure to identify the factors that influence the preparation for disaster management of hospitals in Malaysia.

Method

This study employed the quantitative approach with correlational design. A total of 139 government hospitals in Malaysia, as listed in the website of the MOH (Official Portal for Ministry of Health Malaysia, 2016), was selected in this research with the exception of private or university hospitals. The researchers distributed the questionnaire using a combination of self-delivery, email, and mail approaches. The measuring instrument consists of six parts. Part A focuses on the demographic profile of the respondents. Next, the questionnaire covers the measurement for the dependent variable, which includes the dimensions of structural safety in Part B, non-structural safety in Part C, and functional capacity in Part D. As for the independent variables, information related to institutional pressure that deals with mimetic, normative, and coercive pressures are included in Part E.

Findings

The measurement model was evaluated for convergent validity. The evaluation was conducted using factor loadings, composite reliability (CR), and average variance extracted (AVE). Institutional pressure obtained AVE of 0.706 and CR of 0.878. The loadings and AVEs of all the latent variables involved in this study are above their recommended levels. Table 1 shows the loadings, AVE, and CR results for all the constructs.

Table 1: Initial results of reliability and validity tests of the independent variables

| Construct | Indicator / Item | Scale | Indicator Reliability (Loadings) | Convergent Validity (AVE) | Internal Consistency (CR) |
|------------------------|------------------|------------|---|---------------------------|---------------------------|
| ----- | ----- | ----- | > 0.708, but > 0.4 is adequate if other items have high loadings to complement AVE and CR | > 0.5 | > 0.7 |
| Institutional Pressure | Coercive | Reflective | 0.820 | 0.706 | 0.878 |
| | Mimetic | | 0.841 | | |
| | Normative | | 0.859 | | |

In this study, the bootstrapping procedure was carried out to examine the significance of the weight of each formative indicator. Table 2 shows that the weights of the non-structural indicator and functional capacity are 0.188 and 1.115, respectively, which are above the recommended value of 0.1. Meanwhile, the structural indicator's weight of -0.062 is below the recommended value. Based on the findings, functional capacity has achieved an acceptable significant value, whereas the structural and non-structural indicators are found to be insignificant. In this case, the structural and non-structural indicators were not deleted since previous studies have provided support regarding the relevance of these indicators in capturing hospital disaster preparedness. In addition, retaining them is possible because the indicators have fulfilled the VIF requirement (Ramayah et al., 2018). Based on this argument, even though the outer weights are not significant, these indicators are still retained in the formative construct. This method is thus known as relative contribution, where the researchers retain the indicators because all items are deemed important.

Table 2: Weights, t-statistics, and variance inflator factor (VIF) of the formative indicators (dependent variable)

| Construct | Items | Weights | t-values | VIF | sig. |
|--------------------------------|---------------------|---------|----------|-------|-------|
| Hospital Disaster Preparedness | Structural | -0.062 | 0.463 | 1.137 | 0.332 |
| | Non Structural | 0.188 | 0.905 | 1.809 | 0.183 |
| | Functional Capacity | 1.115 | 9.897** | 1.658 | 0.000 |

Note. > 1.96**

All the hypotheses proposed in the study are affirmed, with the path coefficient values ranging from 0.134 to 0.481 and the significance level of at least 0.05. Further, a significant result is proven because the value of 0 does not straddle between the lower level confidence interval (LLCI) and upper level confidence interval (ULCI) in the bootstrapping analysis. Hence, institutional pressure is revealed to be significant at the 99% level ($p < 0.01$). Table 3 shows that hospital disaster preparedness is influenced by coercive pressure ($\beta = 0.481$, $t = 12.159$, $p < 0.01$, LLCI = 0.419, ULCI=0.547), mimetic pressure ($\beta = 0.363$, $t = 12.582$, $p < 0.01$, LLCI = 0.321, ULCI=0.415), and normative pressure ($\beta = 0.346$, $t = 8.724$, $p < 0.01$, LLCI = 0.280, ULCI=0.413). Therefore, all the hypotheses are supported.

Table 3: Path coefficient (β), standard error, t-value, p-value, lower level confidence interval (LLCI) and upper level confidence interval (ULCI), R², and significance level

| Hypothesised Relationships | Standard-ised Beta (β) | Standard Error | T Values | P Values | 5% LLCI | 95% ULCI | R ² | Sig. $p \leq 0.05$ | Decision |
|------------------------------|--------------------------------|----------------|----------|----------|---------|----------|----------------|--------------------|-----------|
| Coercive Pressure → HDP | 0.481 | 0.040 | 12.159** | 0.000 | 0.419 | 0.547 | 0.381 | Yes | Supported |
| Mimetic Pressure → HDP | 0.363 | 0.029 | 12.582** | 0.000 | 0.321 | 0.415 | | Yes | Supported |
| Normative Pressure → HDP | 0.346 | 0.040 | 8.724** | 0.000 | 0.280 | 0.413 | | Yes | Supported |
| Institutional Pressure → HDP | 0.250 | 0.109 | 2.299** | 0.010 | 0.044 | 0.406 | | Yes | Supported |

Table 4 revealed that institutional pressure has a small effect on hospital disaster preparedness ($f^2 = 0.059$). A small effect size does not necessarily entail a negligible underlying moderator effect Chin et al. (2003).

Table 4: Effect size (f^2)

| Independent Variable | f value | Effect size |
|------------------------|-----------|-------------|
| Institutional Pressure | 0.059 | Small |

Discussion and Conclusion

As suggested by the findings, Malaysian public hospitals are motivated to participate and commit to disaster preparedness due to coercive pressure from the regulatory agencies. Consequently, this drives them to achieve the desired level of hospital disaster preparedness. In line with the institutional theory, the findings have revealed the regulatory agencies' intention to place high coercive pressure to drive hospital disaster preparedness. This coincides with the findings by Mehrbakhsh, Nilashi, Hossein, Ali, Ramin, Ravangard & Othman (2016) that external pressures are exerted on hospitals by hospital patients, vendors, professionalism, competitors, industry associations, and government regulations.

Because of the significant relationship between mimetic pressure and hospital disaster preparedness, Malaysian public hospitals are presumably motivated to participate in disaster preparedness activities with the knowledge that other hospitals have better disaster preparedness practices and good reputation in dealing with disasters or other disaster-related issues. Upon observing other hospitals, the public hospitals are further driven to practise disaster preparedness as the other hospitals are functioning likewise.

Based on the research findings, hospital disaster preparedness in Malaysian public hospitals has a significant relationship with normative pressure in that they would voluntarily be involved in hospital disaster preparedness if they see the same practice in their professional association. The Malaysian Medical Association (MMA) as the professional association in this study exercises professional norm pressure to satisfy certain expectations or make fit for specific practice such as hospital disaster preparedness. Hence, this supports the hypothesis that hospitals that are members of a professional network tend to highly participate in hospital disaster preparedness compared to those that are non-members. The findings are rather similar to a study by Burruss, Schafer, Giblin, and Haynes (2012) on terrorism emergency preparedness in which professional associations obtained the highest score. Similarly, according to Amran, Ooi, Nejati, Zulkafli, and Lim (2012), normative pressure assumes that hospitals that are members of professional associations are attributed to such norms.

Hence, disaster preparedness in Malaysian public hospitals is based on coercive, mimetic, and normative pressures through the institutional theory in relation to hospitals' processes,

structures, and strategies as a whole (Gao, 2011). Hospitals, as an institutionalised organisation, consist of high competition, professionalism, and regulations (Currie, 2012; Ahmadi, Nilashi, Shahmoradi, Sadoughi, & Alizadeh, 2018). Hence, while coercive and normative pressures offer a legitimate viewpoint of such an institutionalised organisation, mimetic pressure, on the other hand, assists with the re-adjustment of public hospitals to other hospitals in terms of disaster preparedness.

Acknowledgement

The authors would like to acknowledge all Government hospitals in Malaysia for the approval and support of the research. This research was supported by scholarship from the Ministry of Higher Education of Malaysia (MOHE).

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