International Journal of Business, Management, and Economics
e-ISSN 2746-1351
Vol. 3 No. 4, November 2022

The Mediating Effect of Disaster Recovery Plan on the Relationship Between Critical Personnel And Business Continuity Management

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Abstract

The aim of this paper is to investigate the mediating effect of disaster recovery plan on the relationship between critical personnel and business continuity management. The study applied cross sectional quantitative survey approach to collect data using 326 questionnaires from Abu Dhabi municipalities' employees. 281 responses were retrieved and analysed for descriptive and inferential statistics. The result shows that the relationship between critical personnel and BCM, as well as critical personnel and DRP were negative. But the DRP -> BCM relationship was found to be positively significant. However, the mediating effect of DRP on critical personnel and BCM relationship was negatively significant against the positive significant mediation posited in the study. Implications, limitations and future study areas have been illustrated in the study.

Keywords: Critical Personnel, Disaster Recovery Plan, Business Continuity Management

JEL Codes: L52, M1

How to Cite:

Naser, A. F. A., & Nor, A. (2022). The Mediating Effect of Disaster Recovery Plan on The Relationship Between Critical Personnel And Business Continuity Management. *International Journal of Business, Management, and Economics, 3*(4). 382 - 400. DOI: https://doi.org/10.47747/ijbme.v3i4.885

1. Introduction

Business Continuity Management (BCM) process has now became a necessity for business operation in all the levels of management and commercial actions. However, BCM application and popularity varies between countries, while BCM has been popular in some countries, it was found to be at infancy in other countries (Sawalha, 2020). For instance, a notable business information service provider "ZAWYA" situated in Dubai, UAE conducted a survey and found that 70% of businesses in Saudi Arabia, UAE, Qatar, Bahrain, Kuwait and Oman are lacking robust BCM programs (Zawya, 2009). Notwithstanding its importance, the level of BCM awareness and implementation in UAE is still at its infancy across various industries. Herbane (2010) deliberated the growths in the area of BCM and noted that

additional research efforts are still required on the utilization and practice of BCM as a business process.

In addition, the 2019 Business Continuity Benchmark Survey revealed that merely 9% of respondents specified their BCM programs as "very mature," 27% believed BCM program in their institutions was "mature" and 33% believed it to be "reasonably mature," this indicates that their BCM approach differed in relations to sound implementation and therefore echoed on the process outcomes. The study also revealed that poor executive support was a challenge that portrayed weakness at the primary phases of BCM program instigation, which is project's planning (Continuity Central, 2019). Thus, one of the broader aspects of great concern and source of problems in implementing business continuity management is managerial capacity. The managerial capacity within the organization refers to all the processes that are implemented to enhance the success and sustainability of the organization, which heavily depends on the critical personnel factors.

At the individual level, we all aim to minimize or avert loss or damage of our private properties by taking a combination of measures such as alarms, physical security, adequate insurance cover, and vigilance (Herbane, Elliott & Swartz, 2004). In the organizational setting, BCM has advanced into a process of identifying the exposure of organizations to both external and internal threats and synthesizing all the necessary assets to provide effective prevention and reclamation (Herbane et al., 2004). Therefore, BCM is considered as the nervous system for business development, which ensures the ease of responding to external and internal variables in and adapts to them to ensure the continuity of providing important activities in all circumstances. This was clear and evident in the Covid 19 pandemic, where many parties were affected by the pandemic and poor service delivery. For example, some inspection work in the municipality stopped at the beginning of the pandemic, which led to the interruption of some work, such as the issuance of agricultural permits for homes, in order to avoid contact with homeowners. Andrea (2016) showed that the period from 2010 to 2016 witnessed a failure in business continuity in many parties, in sporadic events such as the tsunami in Japan 2011 and Hurricane Sandy in the United States 2012.

The most recent ISO 22301:2019 highlighted the significant enduring changes and advances that are happening in the field of BCM and targeted at conveying additional value to users through best practices that are necessary to support organizations to effectively react and recover from interruptions (ISO, 2019). The ISO 22301 latest version also stresses that BCM is pertinent to all organizations, irrespective of sector or size of organization. Yet, many researchers emphasized that, there is still a paucity of "empirical" research on BCM implementation and effectiveness in some countries and business sectors, which prompts the need for additional research (Azadegan et al., 2020; Ferguson, 2019).

Several reasons can obstruct the application of effective BCM program; effective BCM approach relies on a sum of activities that need to be sequentially performed. It is also dependent on the degree to which these activities intensify enterprises' BCM awareness and expedite embedding it in the organizational culture (Sawalha, 2020). Based on the available literature, critical employee factors can influence BCM (Abdullah, Noor & Ibrahim, 2015), which will be studied in depth to clarify the extent of its impact on ensuring BCM and their contribution to the successful implementation of the program.

Critical employees are important in the success of BCM application. Essential to the realization of BCM is a detailed understanding of the internal and external threats and

recognizing that an effective response will be driven by employees' behavior during the business recovery process (Herbane et al., 2004). Every organization has a group of important employees who are considered important for the effective implementation of various programs of the institution. Critical employees refer to a group of employees who possess important information related to the operations of an organization. Thus, critical employees must be involved in BCM activities (Herbane et al., 2004). The core employees within the organization represent many of the senior operations managers, such as the Chief Financial Officers CFO and other employees of the same level. These employees have a great contribution to BCM and organizational development in general.

DRP is also directly related to the success of BCM implementation in organizations. DRP is considered the safety valve of organizations, and it will be difficult for organizations to maintain BCM in the absence of it, which may in turn lead to failure in the application of BCM. For effective operation of organizations, there must be an effective DRP to help the organization recover from unforeseen vulnerabilities. Thus, effective implementation of the DRP will promote a sound BCM (Sahebjamnia, Torabi, & Mansouri, 2015).

The development of DRP and BCM improvement requires effective implementation of planning, process flow, resource planning, as well as a competent management team. As a complex process DRP is however influenced by the critical employees (Hoong & Marthandan, 2014). Thus, critical employees are linked to DRP which help organizations to recover from unforeseen catastrophes. Critical individuals are the most important functions that could reactivate and operate organization systems according to target times to restore services.

Based on the literature, the relationship between critical employees and BCM, critical employees and DRP, as well as DRP – BCM relationship has been established. Hence, the condition for testing the mediating effect of DRP on the critical employees and BCM relationship have been satisfied (Baron & Kenny, 1986; Hayes, 2009). This study applies the quantitative approach to examine the mediating effect of DRP on the relationship between critical employees and BCM implementation in UAE.

2. Literature Review

2.1 Relationship between Critical Personnel/Employees and BCM

Woodman (2008) investigated three activities relating to critical employees, i.e., formation of teams, allocating roles and responsibilities, training and updating the plans. It was found that, 47% of the respondents reported the formation of teams and roles and responsibilities allocation for BCM implementation is the responsibility of senior management. Likewise, critical employees across diverse business units such as IT teams, security, human resources, risk and facilities management, finance, public relations, marketing, sales, etc. are widely engaged in BCM implementation. However, Goodwin (2006) deliberated BCM approach based on the "Scottish Power" case, which is one of the major utility firms in the world, as it decided to implement BCM. The firm began with the project planning, creation of senior teams, appointment of team leaders and the hiring of BCM advisers. The risk assessment and business impact analysis were hold across critical business functions, and BCM plans were then developed alongside the recovery plans. This specifies the importance of critical employees across business units for effective BCM approach (Sawalha, 2020).

Moreover, training and awareness is another crucial thought for BCM effectiveness. According to Clark (2015) training process is an important segment for BCM implementation which should not be ignored as it engrains BCM consciousness. Awareness and training provide the required confidence to internal and external stakeholders for the organization's disaster recovery ability (Khanna, 2008). The entire staff of the organization from rank and file employees to the executive must be conscious of their expected roles and responsibilities in reaction to disaster recovery efforts to avert palpable resource waste (Muparadzi & Rodze, 2021). In a Malaysian study, Abdullah, Noor and Ibrahim (2015) showed that people/employees factor is significantly and positively correlated with BCM implementation in the Public Sector. Therefore;

H1: There is a significant relationship between critical employees dimension and BCM implementation

2.2 Relationship between Critical Employees and DRP

Contemporary organizations appreciate the fact that business success is increasingly contingent on their ability to convey the required services to customers and other stakeholders on demand (Omar, Alijani & Mason, 2011). Most essentially, getting the business functioning as usual after a disruptive incident is the foremost goal of all top level managements (Smith et al., 2019). Moore (2008) stated that the commitment of senior management is a precondition for DRP. Precisely, at the early phases of DRP, senior management support is indispensable (Chow, 2000). Senior management must also assign accountability, roles and ownership, as well as a damage assessment team for effective DRP (Moore and Lakha, 2006). Concurrently, functional area managers should create their functional teams to develop and file a comprehensive recovery and recommencement processes for their business areas (Sawalha, 2021).

Critical employees are thus, very important in the effort to guaranty uninterrupted operations through effective DRP. A thorough DRP project will be incomplete without the critical employees that will work it effectively. During disaster periods, critical employees are the ones to reclaim operations by working the DRP procedures accordingly. The sustained operations of an organization relies on critical employee's consciousness of potential disasters, ability to plan the procedures to reduce disruptions and expedite convenient and successful recovery (Omar et al., 2011). Therefore;

H2: There is a significant relationship between critical employees dimension and DRP

2.3 Relationship between DRP and BCM

DRP and BCM are closely related programs that guarantee sustained operations of organizations after the occurrence of a disaster (Barnett-Quaicoo & Ahmadu, 2020). The DRP approach accentuates on disaster recovery rather than prevention because disasters are in most cases beyond human control (Quarantelli, 1988). Founding a reliable DRP is crucial to organizational survival during and after disastrous events (Omar et al., 2011). In both theory and practice, DRP has been associated with BCM (Herbane et al., 2004). Cervone (2017) found that DRP implementation can help to guarantee the emergence and viability of BCM within an organization. Since DRP is believed to support organizations in reinstating their operations after a substantial disruption with a minimal time lag, effective DRP will significantly influence the BCM of organizations (Omar et al., 2011). Therefore;

H3: There is a significant relationship between DRP and BCM implementation

2.4 Mediating effect of DRP on the Relationship between Critical Employees and BCM

DRP entails the processes and policies that are put in place to recover the critical operations of a business, in reaction to any disaster (Hoong & Marthandan, 2011). According to Hoong and Marthandan (2011) DRP is an important subset of BCM. Moreover, DRP is indispensable for organizations to remain steadfast in the event of disasters and disruptions (Sawalha, 2021). Horney et al. (2016) showed that an increasing number of businesses and governments are adopting DRP to assist in the recovery processes. Relying on the literature and the hypothesized relationships between critical employees and BCM, critical employees and DRP, as well as the hypothesized relationship between DRP and BCM; the requirements for the introduction of DRP as a mediator on the relationships between critical employees and BCM have been satisfied (Baron & Kenny, 1986). Therefore, the following mediation hypothesis is postulated:

H4: DRP will significantly mediate the relationship between critical employees and BCM implementation

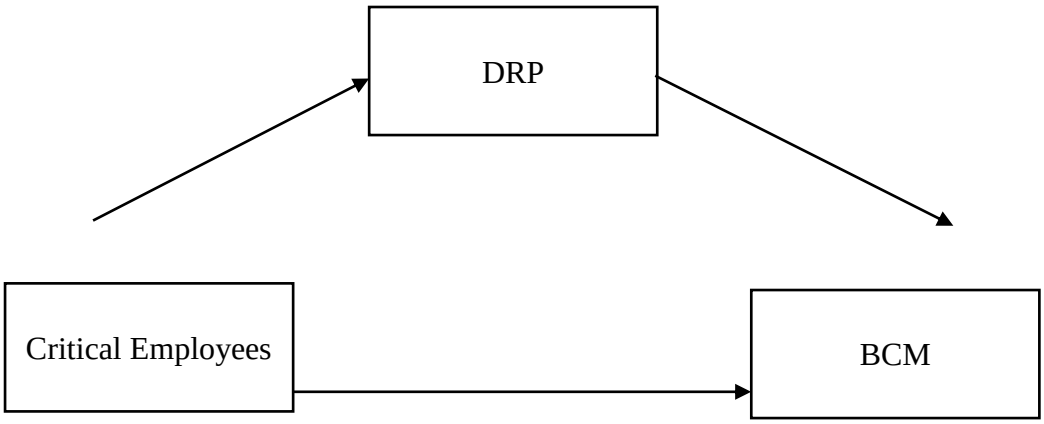


Figure 1: Research Framework

3. Methodology

Cross-sectional survey data collection method was used to collect the research data via questionnaire. However, quantitative method of data analysis was used to analyse the study results. The research population consists 2152 employees of Department of Municipalities and Transport in UAE (DMT). DMT is chosen because it is the supervision authority of municipalities in the capital of UAE, which consist so many various organizations and employees that will give a wider coverage and serve the purpose of this study. As per Krejcie and Morgan (1970) formula, the representative sample for the research is 326 of the total population, which will be further subdivided into subgroups known as strata i.e. stratified sampling. The essence of using stratified sampling is to ensure that all the population has been adequately represented. Finally, the Statistical Package for Social Science (SPSS) version 21 and Partial Least Square - Structural Equation Model software PLS-SEM 3.2.7 was used for the analysis of data.

3.1 Measurement of Variables

The measurement items for the three variables in this study were adopted from previous similar researches using a 5 point Likert scale questionnaire that ranges from 1- strongly disagree to 5- strongly agree. The first part of the questionnaire consist of the demographic background, the second part consists the measurements of dependent variable i.e. BCM which has six items adapted from Kato and Charoenrat, (2017).

The third part of the questionnaire consists the measurements for DRP (mediating variable) which entails nine items adapted from Mathenge, (2011) and Byadigera (2019).

The fourth part of the questionnaire consists the measurement of independent variable i.e. the critical employee variable which has eight items that were drawn from two dimensions; Subjective norms (4 items) and Hedonistic drives (4 items) which were all adapted from Awa et al. (2017). The first four items reflect subjective norms while the four last items reflect hedonistic drives. All the items for BCM, DRP and CP were described in appendix A.

4.0 Data Analysis and Results

4.1 Rate of Response

A total of 326 questionnaires were distributed through online and hand delivery methods. A follow up for the return of the questionnaires have been used to attain greater response rates (Sekaran, 2003). This results in a total of 281 retrieved questionnaires, from the 326 distributed questionnaires i.e. 86% rate of responses. All the 281 responses were found to be usable for multivariate analysis. The rate of response in this research is adequate for the final analysis, because Sekaran (2003) suggests the sufficiency of an aggregate of 30% rate of response for survey researches.

4.2 Data Screening and Preliminary Analysis

Prior to any multivariate analysis, data screening must be conducted to help the researcher in satisfying the basic assumptions of multivariate analysis (Hair et al., 2007). The preliminary analysis will help researchers to identify any possible violation in the assumptions of multivariate analysis. After the data input and coding, the following preliminary analyses were performed: (a) missing data values analysis (b) outlier response analysis, (c) normality of data test, and (d) multicollinearity assessment test (Hair Jr., Black, Babin, & Anderson, 2010; Tabachnick & Fidell, 2007). All the basic assumptions of multivariate analysis were found to be satisfied.

4.3 Demographic Profile of Respondents

The observed demographic profile of the respondents in this study covers gender, age, study qualification, years in service, years in present position and industrial sector (see Table 1).

Table 1 Respondent's Demographic Features

S/No.	Items	Frequency	Percent (%)
1	**Gender**		
	Male	243	86.5
	Female	38	13.5

Table 1 Respondent's Demographic Features (continue)

S/No.	Items	Frequency	Percent (%)
2	**Age**		
	25 years and below	11	3.9
	26-35 years	89	31.7
	36-45 years	135	48.0
	46-55 years	39	13.9
	56 years and above	7	2.5
3	**Educational Qualification**		
	Primary Education Certificate	2	0.7
	Secondary School Certificate	29	10.3
	Diploma Certificate	24	8.5
	Bachelor's Degree/HND Certificate	93	33.1
	Postgraduate Education Certificate	128	45.6
	Any other Qualification	5	1.8
4	**Position of respondents**		
	Executive Manager	64	22.8
	Middle Manager	150	53.4
	Low level Manager	63	22.4
	Others	4	1.4
5	**Years in Service**		
	Less than 10 years	65	23.1
	11-20 years	121	43.1
	21 years and above	95	33.8
6	**Years in current position**		
	Less than 5 years	112	39.9
	6-10 years	83	29.5
	11 years and above	86	30.6
7	**Industrial Sector of the Firm**		
	Agricultural Sector	5	1.8
	Service Sector	230	81.9
	Manufacturing Sector	31	11.0
	Oil Sector	13	4.6
	Building and Construction	2	0.7

*HND = Higher National Diploma

4.4 Assessment of PLS-SEM Path Model Results

PLS-SEM analysis is a two-step structural process (Henseler, Ringle & Sinkovics, 2009) and these two steps were computed and reported in this study. The first step assesses and reports the measurement model assessment, whereas the second step evaluates and report the assessment structural model as represented in Figure 4.1 (Hair et al., 2014; Henseler et al., 2009).

4.4.1 Measurement model assessment

The assessment of measurement model includes establishing the individual items internal consistency, construct reliability, content validity, convergent validity and discriminant

validity (Hair et al., 2014; Henseler et al., 2009). Figure 2 depicts the measurement model of this study.

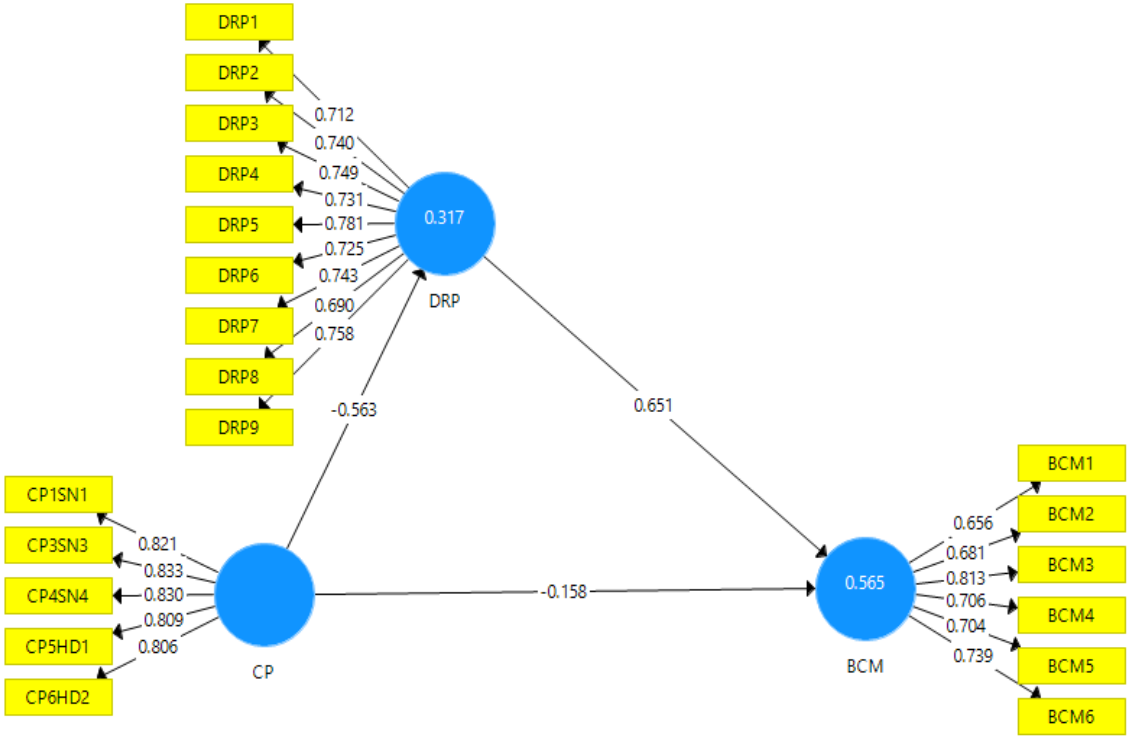


Figure 2: *Measurement Model*

Figure 2 above shows the loadings of items for each of the variables, and the contribution of the CP variable on both DRP (R^2=0.317) and BCM (R^2=0.565). The measurement model outer loadings for all the items depicted are between the range of 0.659 and 0.833. Thus, these items are accepted and retained since they are within the standard threshold of 0.40 and above (Hair et al., 2014; 2017). However, 3 items representing the CP variable (i.e. CP1SN2, CP7HD3 and CP8HD4) were deleted for recording item loadings below the recommended 0.40. Therefore, the measurement model portrayed in figure 2 is satisfactory.

4.4.2 Individual item reliability

The evaluation of individual items reliability was observed by computing the outer loadings of each item for each of the study constructs (Duarte & Raposo, 2010; Hulland, 1999). The measurement model outer loadings is accepted when it is ≥ 0.70 which is the standard threshold (Hair et al., 2017). However, indicators that have between .40 and .70 loadings may be retained if their deletion will not lead to an increase in content validity (Hair et al., 2014; 2017). Consequently, 3 items were removed out of the 23 items of the study. The complete model therefore reserved 20 items that have loadings between 0.656 and 0.833.

Table 2 Construct Reliability and Validity

Constructs	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
BCM	0.811	0.864	0.516
DRP	0.895	0.914	0.543
CP	0.878	0.911	0.672

CP= Critical Personnel, BCM= Business Continuity Management and DRP= Disaster Recovery Plan.

4.4.3 Internal consistency reliability

Internal consistency is the degree to which all indicators/items are capable to measure the same construct on a definite scale (Sun et al., 2007). The Cronbach's alpha or composite reliability coefficients are the most common techniques for evaluating instrument's reliability in organizational studies (Mahmoud, Ahmad & Poespowidjojo, 2022, 2021, 2018; Peterson & Kim, 2013). Both techniques i.e. Cronbach's alpha and composite reliability coefficients were engaged in this study.

Among the two popular techniques, the use Cronbach's alpha coefficient has been more prevalent, which is sometimes complemented by the composite reliability technique as it is in this study. There are two main reasons in doing that: first, the composite reliability provides reliability coefficient values that are substantially less biased compared to Cronbach's alpha coefficients because the later postulates all items/indicators contribute equally to a construct without regard to the actual impact of individual loadings (Gotz, Liehr-Gobbers, & Krafft, 2010). The second reason is, the Cronbach's alpha underestimates the reliability coefficients of scales. But, the composite reliability coefficient considers the item indicators to have divergent loadings which might be interpreted in the same way as Cronbach's alpha. The internal consistency threshold values for both Cronbach's alpha and composite reliability must be at least ≥ 0.70 (Bagozzi & Yi, 1988; Hair et al., 2011). The results (see table 2) indicates that the internal consistency for all the constructs in this study are satisfactory.

4.4.4 Convergent validity

Convergent validity is the degree to which items of a research questionnaire is representing the constructs it is intended to study correctly and truly correlate with other indicators of the corresponding construct (Hair, Black, Babin, Anderson, & Tatham, 2006). To scrutinize the convergent validity for this study, the Average Variance Extracted (AVE) was computed for each of the constructs in this study (Fornell & Larcker, 1981). The AVE threshold for each construct is acceptable when it is above 0.50 and that is when a satisfactory convergent validity can be declared (Chin, 1998). This study shows that a satisfactory level of convergent validity has been achieved for each construct, since all AVE values are beyond 0.50 for each of the constructs in this study (see Table 2).

4.4.5 Discriminant validity

Discriminant validity is the degree to which a particular construct deviates from another is (Duarte & Raposo, 2010). While the Fornell-Larcker discriminant validity criterion has been very popular, it has been criticized for performing poorly in discriminant validity assessment particularly when constructs only differ slightly (Henseler et al., 2015). Therefore, Henseler et al. (2015) suggests the use of heterotrait-monotrait ratio (HTMT) assessment of

correlations. Consequently, HTMT technique was employed to establish the discriminant validity for this study (Henseler et al., 2015). The conservative threshold for HTMT ratio is 0.85 and 0.90 for the most liberal. Any HTMT ratio that is below 0.85 (conservative) or below 0.90 (liberal) suggests a satisfactory discriminant validity result for the study constructs. The HTMT ratio values for constructs portrayed in Table 3 are less than the liberal threshold of 0.90 which shows a satisfactory discriminant validity.

Table 3 Heterotrait-Monotrait Ratio (HTMT ratio)

Constructs	BCM	CP	DRP
BCM			
CP	**0.613**		
DRP	0.858	**0.629**	

4.4.6 Assessment of significance of the structural model

Subsequent to the measurement model analysis, the structural model is evaluated. The structural model is computed based on the standard bootstrapping method using 5000 bootstrap samples as recommended by Hair et al. (2017) to gauge the path coefficients significance for the 281 data responses. Figure 3 and Table 4 depicts the structural model estimates for the complete model include both direct and indirect relationships i.e. the mediator variable.

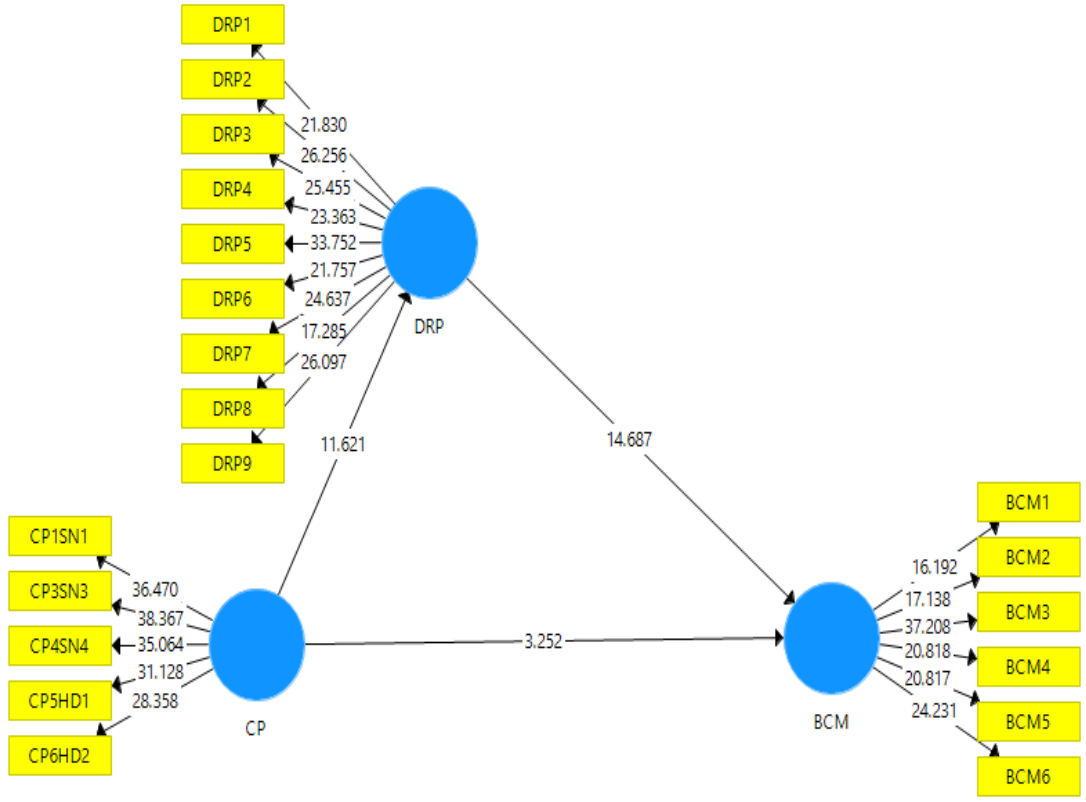


Figure 3: *PLS-SEM bootstrapping (full model)*

Figure 3 above shows the full model PLS-SEM bootstrapping results; which shows the t values for each of the direct hypothesized relationships. CP-BCM relationship shows that t=3.252, CP-DRP shows that t=11.621 where as DRP-BCM relationship shows t=14.687. Among these relationships, only DRP-BCM hypothesized relationship shows a significant t value that has a prospect to be accepted.

Table 4 *Structural Model Assessment*

Hypothesized Relationships	Sample Mean Beta (β)	Standard Deviation (STDEV)	T Statistics	P Values	Decision
H1: CP -> BCM	-0.158	0.049	3.252	0.001	Reject
H2: CP -> DRP	-0.566	0.048	11.621	0.000	Reject
H3: DRP -> BCM	0.653	0.044	14.687	0.000	**Accept**
H4: CP -> DRP -> BCM	-0.369	0.037	10.029	0.000	Reject

The first hypothesis (H1) which suggests a positive significant relationship between Critical Personnel and BCM is not supported. H4 results shows that p value is significant but the result is negative (β = -0.158, t = 3.252, p = 0.001). This indicates that the more critical employee efforts the lesser the BCM. In the same notion, the relationship between critical personnel and DRP proposed in H2 shows a negative significant relationship (β = -0.566, t = 11.621, p = 0.000). Therefore, H2 is also rejected, as it indicates an increase in critical personnel activities will decrease the DRP. However, the DRP -> BCM relationship was found to be positively significant (β = 0.653, t = 14.687, p = 0.000) as proposed in H3. This indicates that an increase in DRP will increase the level of BCM in organizations. Finally, the mediating effect of DRP on the relationship between critical personnel and BCM that is proposed in hypothesis four (H4) is significant but not supported because the direction of the relationship is negative (β = -0.369, t = 10.029, p = 0.000), which is contrary to the hypothesized relationship.

4.5 Assessment of Coefficient of Determination (R^2)

An important criterion for assessing PLS-SEM structural model is the R^2, (Henseler et al., 2009). The coefficient of R^2 represents the proportion of variation in the dependent variable that is explained by predicting variables in a model (Hair et al., 2010). The R^2 values of 0.67, 0.33 and 0.19 are assumed to be substantial, moderate, and weak, respectively (Chin, 1998). Table 5 represents the R^2 values of the complete model in this study.

Table 5 *Variance Explained in the Endogenous Latent Variables*

	R Square
BCM	0.565
DRP	0.317

As represented in Table 5, the study model explains 56.5% of the overall variance in BCM and 31.7% of the overall variance in DRP. This suggests that critical personnel and DRP

collectively explained 56.5% and critical personnel explained 31.7% of the variance of DRP. Thus, the R^2 values for this study are moderate and adequately acceptable (Chin 1998).

4.6. Discussion of Results

The first hypothesis (H1), suggests a significant relationship between critical employees dimension and BCM implementation. The implementation of BCM is a broad concept that must involve the commitment of critical people, which include competency consisting of attitudes, skills, knowledge, roles and responsibilities of critical employees in the organization (Yang, Wu, Shu, & Yang, 2006). Contrary to the study proposition, the result of this study did not support H4, as it portrays a negative significant relationship with BCM implementation. This means that an increase in critical personnel will decrease BCM implementation, this finding may be shaped by other factors such as contextual and cultural factors. The role of critical personnel may also be limited due to the size of firms involved in the study; smaller firms tend to inhibit the role of critical employees because owner managers are the alpha and omega and may not be willing to allow critical employees to perform independently. When the critical personnel have the attitudes, skills, knowledge to promote but feel inhibited by their superiors such attitudes will easily turn to frustrations that could even become negatively related to BCM implementation. However, in a collectivist society like UAE, group norms are valued more compared to independence which could also hinder the role of critical employees in promoting BCM implementation.

However, hypothesis two (H2) result shows that the relationship between critical employees dimension and DRP is also negatively significant. This specifies that an increase in critical personnel attitude and motivation will be detrimental to DRP. Thus, some other factors such as personal differences and culture could be behind this negative relationship. In a nutshell, the relationship between critical personnel and BCM may require a moderating factor to redirect this relationship.

On the other hand, hypothesis three (H3) shows that the relationship between DRP and BCM are positively significantly. This illuminates that the more DRP implementation by an organization, the greater their BCM will be. DRP and BCM are closely related structures that guarantee sustained operations of organizations in the event of catastrophic occurrences (Barnett-Quaicoo & Ahmadu, 2020). Therefore, a reliable DRP program is crucial for organizational survival during and after disastrous events, effective DRP will therefore, significantly influence BCM (Omar, Alijani & Mason, 2011). Hence, organizations must be acquainted with DRP implementation processes since it is contingent to BCM.

Finally, H4 shows that DRP negatively mediate the relationship between critical employees and BCM implementation. This is contrary to the proposed positive DRP mediation on the relationship between critical employees and BCM implementation. This result explicates that critical personnel attitudes decrease the ability of organizations to promote DRP which will subsequently decrease BCM implementation. The finding therefore, suggests that critical personnel factors if not carefully manged could hamper both DRP and BCM implementation among firms in Abu Dhabi, UAE.

4.7. Implications of the Study

Based on the result, this study revealed an important theoretical implication that DRP will only negatively mediate the relationship between critical personnel variable and BCM implementation in the context of this study. Practical implications also indicates that critical

personnel is detrimental to both DRP and BCM implementation if other moderating are not included to redirect the relationship. However, organizations can positively promote BCM through an increase in DRP. Moreover, the methodological implication affirmed the cultural validity of the critical personnel, DRP and BCM measurements that were initially developed in western cultures. These measurements were refined and tested in the context of UAE, which is an important methodological contribution.

4.8. Limitations of the Study

This study identified some limitations. For instance, the cross-sectional design used for data collection does not allow causal conclusions, some important information may be missed with one-off data collection approach. Likewise, the self-report measures used to measure the study variables are associated with common method bias (Podsakoff et al., 2003) and social desirability bias (Podsakoff & Organ, 1986). Objective measures could have been better for the study. Finally, subjects of the study are principally concentrated in Abu Dhabi which is just a state in UAE; this may limit the result generalizability.

4.9. Directions for Further Research

Upcoming studies should consider longitudinal data collection approach to assess the theoretical concepts and ratify the findings of this study. Objective measurements could also tackle social desirability and common method bias limitations. Future studies can also replicate the model of this study in a wider context across UAE using the same measurements to enhance the generalizability of findings. Forthcoming researches should also consider moderating variables that could redirect the negative relationship between critical personnel and BCM, as well as critical personnel and DRP relationship. Other variables should also be augmented in the model to explain the remaining variance in DRP and BCM implementation.

5. Conclusion

This study further contribute to the evolving theoretical and empirical literature on the relationship between critical personnel, DRP and BCM. It also revealed the mediating position of DRP implementation on critical personnel and BCM implementation relationship. In precise, the paper attends to the objectives of this study, and revealed the limitations found in the study. This paper bridged the prevailing theoretical gaps by integrating the critical personnel, DRP and BCM implementation variables in a single framework, which contributes to both DRP and BCM literature.

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Appendix A

Business Continuity Management (BCM)

Items	Questions	Scale
BCM1	My organization made lists of emergency contact information of local government agencies responsible for disaster management/response	1 2 3 4 5
BCM2	My organization developed procedures to tackle problems of a disruption of public utility (e.g., water, electricity)	1 2 3 4 5
BCM3	My organization established ways to communicate during a disruption	1 2 3 4 5
BCM4	My organization backed up significant/essential information	1 2 3 4 5
BCM5	My organization purchased disaster (risk) insurance	1 2 3 4 5
BCM6	My organization identified sources of financial aid for disaster recovery	1 2 3 4 5

Disaster Recovery Plan (DRP)

Items	Questions	Scale
DRP1	My organization designate a location of backup activities	1 2 3 4 5
DRP2	My organization documents emergency response procedures to occur during and after an emergency	1 2 3 4 5
DRP3	My organization has a formal system backup policy and schedule	1 2 3 4 5
DRP4	My organization has inventory of assets needed for offsite recovery (example: backup tapes, operating system software, etc.)	1 2 3 4 5
DRP5	My organization has a defined call tree for notifying staff when a disaster is declared	1 2 3 4 5
DRP6	My organization has a list of detailed tasks needed for offsite recovery	1 2 3 4 5
DRP7	My organization measures to manage contingency processes	1 2 3 4 5

	while all systems are being recovered	
DRP8	My organization investigate new advanced technologies that can reduce downtime	1 2 3 4 5
DRP9	My organization developed a disaster organization chart that defines recovery teams	1 2 3 4 5

Critical People (CP)

Items	**Questions**	**Scale**
CP1-SN1	The adoption of disaster recovery plan by critical employees is greatly influenced by others	1 2 3 4 5
CP2-SN2	Disaster recovery plan is adopted by critical employees because of group cohesiveness	1 2 3 4 5
CP3-SN3	Disaster recovery plan is adopted by critical employees because of the strong belief in group norms	1 2 3 4 5
CP4-SN4	Disaster recovery plan is adopted by critical employees because of the fear of group penalty	1 2 3 4 5
CP5-HD1	As a critical employee, I adopted disaster recovery plan because of my personal interest to it	1 2 3 4 5
CP6-HD2	As a critical employee, I adopted disaster recovery plan because of my egoistic mindedness	1 2 3 4 5
CP7-HD3	As a critical employee, I adopted disaster recovery plan for Pleasure seeking	1 2 3 4 5
CP8-HD4	As a critical employee, I adopted disaster recovery plan to meet social demands	1 2 3 4 5