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Green Talent Management and Sustainability: A Study on Power Sector in Bangladesh

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ABSTRACT: Talent management is one of the most important concerns for leaders all over the world. In the power sector, talent management plays an important role for both local and multinational companies. This study focuses on talent management with the help of green human resource management in Bangladeshi power sector. From the literature review and twenty-six expert's opinions, twelve important barriers were identified. These barriers are insufficient talent supply, unsecured career growth, scarcity of manpower, shortage of training programs, lack of advanced technical and technological knowledge, absence of mechanism in action, lack of infrastructure development, workforce adjustment, system loss, lack of supply, high demand, and inadequate financial incentive. Their mutual interrelationships were discussed using the Total Interpretive Structural Modeling Technique (TISM). After that, Matrice d'Impacts Croisés, Multiplication Appliquée à un Classement is known as MICMAC analysis, helps to identify the indirect relationship between barriers having high driving intensity. is known as MICMAC analysis, helps to identify the indirect relationship between barriers having high driving intensity. Finally, the DEMATEL approach was developed to establish the cause-effect relationship model between the barriers. Its purpose is to provide HR managers with an understanding of the relationship between the barriers and indicate the most critical ones that attach talent management with green human resource management for sustainability of an organization in the power sector of Bangladesh.

KEYWORDS: Talent management, green human resource management, sustainable human resource management, power sector, human resource manager.

1. INTRODUCTION

The power sector is essential for the technological and economic development of Bangladesh. The future economic development of the country will mostly depend on the demand for energy. In a developing country like Bangladesh, power generation ability is very limited, although it is necessary to increase. Moreover, the power sector of Bangladesh is very important for the economic development. The sustainable development of a country depends on the power sector. The development of the social, economic, and political power sectors is essential.

In the power sector, talent management is very important for the development of financial growth. Talent management (TM) may be defined as the activities and techniques that involve the systematic attraction, identification, development, engagement, retention, and deployment of this talent that are of particular value to a corporation to create sustainable strategic success. [1] The remarkable complexity of today's power sector-marked with the help of globalization, technology, and broader socio-economic, and geographic changes, even increases the need for attention to attracting, identifying, developing, recruiting, and keeping talent to navigate the demanding situations of it. [2] States that Because of a shortage of talent management, talent management has emerged as a critical strategic domain for the growth and survival ofnational and multinational businesses. Talent readiness is important for effective and efficient leadership. Furthermore, it is crucial for industrial growth, development, and sustainability [3]. The shortage of a skilled work force is a major challenge in the power sector in Bangladesh. Talent management is an important matter in the power sector to achieve its sustainability. The talent tries to make ensure profitability, a positive brand image, and a major advantage for the power sector industry.

Talent management plays a major role in the power sector. A highly skilled or good human resource is a resource for the power sector, because skilled and talented employees or management are always necessary for an organization. Talent management helps and

organization helps with their different kinds of activities. Talent management gives proper direction to the employees. If there are any barriers related to the organization, it affects the sustainable growth of an organization. Sustainable economic growth is necessary for a country's economic and social development. Sustainable development helps to develop the country's long-term benefits. If the power sector is a good example of sustainable development, then make sure its barriers of power sector is removed.

Ref. [4] says that Green human resource management is a part of the HRM functions that encourage an organization to take up green initiatives. Green human resource management comes from the policy, philosophy, and practice of green management. GHRM tries to help an organization perform their programs to decrease carbon emissions, gain carbon credits, and other areas pertaining to manpower, performance, supervision, induction, training, and development, compensation, and reward management.

Moreover, green human resource management is defined as an effective management system that combines and joins environmental management (EM) and sustainable performance. In recent years, environmental issues have become one of the most important managerial challenges. At the same time, an organization tries to reduce its negative impact on the environment and, at the same time, tries to improve sustainable performance [5]. [6] Sustainable human resource management process plays a significant role in accomplishing sustainability and giving flexibility to the employees. Sustainable human resource management can assist the organization in achieving its sustainability goals. [5] Green human resource management (GHRM) tries to provide sustainability insocial equity, health, wellness, and well-being for the organization and its employees. It helps to achieve the goals of economic stability and environmental balance [5]. A while ago, profit was the only way to evaluate an organization's success; presently, it is not true in business purposes. Now, an organization needs to combine its objective with environmental conservation and sustainability.

GHRM is the use of human resource management policies to stimulate firms, businesses, organizations, and enterprises to increase environmentalism and to encourage employees' morale and satisfaction toward the environment. Because of this, GHRM will achieve better proficiency, lower cost, and better employment engagement and retention. [7] GHRM is important for greening organizations. Many organizations follow GHRM to benefit their employees and financial performance. Besides the environment, GHRM also tries to increase the retention of its talent pool. According to [8] an organization gets substantial achievement in engagement, commitment, morale, retention, and work-life commitment through fair and equitable GHRM. Many researchers say that organizations can focus on environmentally sustainable business practices by instigating a greener corporate culture that leads to efficacy, lower expenditure, and better employee relationships. GHRM encourages employees' well-being by cultivating positive work surroundings. It mediates the well-being and performance of organizations constructively. The advancement of GHRM comprises expenditure reduction, corporate social responsibility, talent management, and competition benefits [8]. Besides that, GHRM connects green talents by establishing a green image for employers and improving the company's brand image as a potential marketing strategy. It contributes to the quality of an organization and improves relationships with multiple stakeholders, such as customers, suppliers, vendors, shareholders, government agencies, employees, media, and so on. Proposed a model that highlights adequate environmental training is important at various levels as part of GHRM to develop financial and environmental performance, thereby obtaining a competitive advantage. Few studies have made special attention to the advantages of GHRM systems on organizational performance rather than individual performance. For instance, [9] the result of a set of green human resource management practices as a bundle on the environmental and financial performance of an organizations.

This paper tries to address the barriers to sustainable green human resource management (SHRM) with a focus on talent management and its objectives are

1. Indicating barriers to talent management in the power sector in the context of green human resource management
2. To determine the context and casual relationship among the barriers.
3. To provide managers and others with the means to overcome the identical barriers.

In this paperwork, the most important barriers to green human resource management are identified with a focus on talent management through literature review and suggestions from some experts from relevant work fields. After that, an approach called (Total interpretative structural Model) TISM and Decision Making Trail and Evaluation Laboratory (DEMATEL) was developed for the contextual and cause-effect relationships barriers.

This paper has been little contribution on the area of employee motivation in the power sector [9]. [9] Tells that for analyzing the sustainability of the work force, scientific management is one of the major eras of an organization. This paper does not concern this idea. There is a significant need to analyze employee sustainability issues by employing an integrated TISM-DEMATEL approach. It may be very shocking that many organizations are unaware of why employees are leaving and why they stay [10].

2. MATERIAL AND METHODS

2.1. DATA

Twenty-six Human Resource Management experts were contracted for the phase of the study from more than seven different offices. Out of twenty-six experts, there are fifteen from the public sector and the other is private and autonomous sector, Bangladesh Rural Electric Board (BREB) and Northern electricity Supply Company Limited (NESCO). Among the experts, there are eleven employees (42 percent) are female. The average age of the employees was Forty-two (42). Out of Twenty-six experts fourteen (53 percent) were top level management, eight (30 percent) were mid level management, and Four (17 percent) are the junior level management.

2.2. MODELS

2.2.1. TISM

Ref. [11] tells that TISM helps to make the interrelation among the different factors. Total infrastructure structure modeling method developed by Warfield in 1973 [12]. Basically, TISM method explores the different types of complex hierarchical inter-relationships among the various elements. TISM model deals to find out possible interdependencies among the factors. TISM model not only explore the nature and inter-relationship of the elements such as ISM but also explains the logic behind the interdependence. It is more approachable well articulated hierarchical structured model, [12] TISM model involves some steps. These steps are following

1. The first step is to define and explain the factors whose inter relationships are modeled through the literature from group of experts.
2. Developed a model structure relating the elements, it is very necessary to state applicable relationship between the elements. Experts and HR managements are requested to capture the contextual relationship among the barriers.
3. The third step is to explain the interrelationship among the elements. This step helps to make the relationship nature; it fails to explain "how" the relationship works. In TISM methodology, it is very important to make/establish the interpretation of the relation, and it need to remember that the interpretation would be specific for each elements.
4. Ref. [13] tells that following the interpretation of relationship, next step is to explain the logic of pair-wise comparisons. This time answer is recorded "Yes" (1) or "no" (0). For each c-d link the entry code could be Yes (1) or No (0) to be further illustrated.
5. In the next step, create a reachability matrix and checks for transitive links. Wherein 1 is assigned for "Yes" and 0 is for "No". Then the matrix is checked for the transitivity rule to achieve final Rechability matrix (FRM), [13]
6. After that, the reachability matrix needs to be partitioned under various levels. In FRM, there is rechability sets, antecedent sets, intersection sets. Barriers which are the same set value in reachability matrix will be eliminated. All the barriers repeatedly used to obtaining different levels of elimination.
7. Develop a diagraph by their factors at their elimination level and draw a direct links subsequently. It is needed to remember that critical link of transitivity may be consign.
8. Create the interaction matrix with the help of final diagraph to binary matrix, representing all the significance interactions. 1 is considered. If there is relation and it is necessary to write down interpretation statement in the interpretive matrix.
9. Finally, set up TISM model. TISM model emphasize the interpretation of the corresponding comparison besides with the hierarchical model.

2.2.2. MICMAC

Ref. [13] tells that Matrice d'Impacts Croisés Multiplication Appliquée à un Classement is known as MCMAC analysis Was Developed by Duperrin and Godet in 1973. This Method is helps to identifying the indirect relationship between the systems. [13] state that MICMAC analysis classifies its factor into Autonomous, Dependent, Linkage and Driving Factors as cluster I, II, III, IV. Autonomous factors states are weak driving power and week dependence that means weak relationship with other variables. Dependent Factors means which have weak driving power but it has strong dependent power. Linkage factor has strong driving power and strong dependence power. Finally, driving factor that has strong driving power but weak dependence power MICMAC analysis is used to identify the driving pier and dependence power. MICMAC analysis helps to analysis all the elements of a problem. Normally MICMAC analysis uses binary Systems (0 and 1).

2.2.3. DEMATEL APPROACH

Ref. [14] tells that DEMATEL approach helps to solve real world problems by taking into account and analyzing several dimension and factors. DEMATEL is familiar with examine the cause and effect relationship associated with different component of system. [15],

DEMATEL approach was developed by Batella Geneva Research Center. This method used to help of the correlation and importance of the factors. [16] DEMATEL Approach states the relationship among the factors by casual diagram in a natural manner. It associates with direct and indirect influence among different elements, which express in quantitatively.

DEMATEL approach is following these steps

1. Determine the indicator which is used to model diagram.
2. Develop a direct relationship matrix between the criteria. Ask all the experts to fulfill the tables considering "3" for highly influenced; "2" for average influenced; "1" for less influenced; "0" for no influenced. Then make the average of all the entities. Consider "A" is the variable, and P is the average matrix

   P_{11}.....P_{1d}.....P_{1a}

   P_{c1}.....P_{cd}.....P_{ca}

   P_{a1}.....P_{ad}.....P_{aa}

   3. Normalized the direct relation matrix

   "c" and "d" are identified the row and column respectively.

   Normalized the direct relation matrix "X" is derived from "P", multiplied by "M".

   Where "M" is M= min $\{1/\max i \sum|P_{cd}|, 1/\max i \sum| P_{cd} |\}$
4. After that formulate the total relation matrix (T) of the giving relation: $T= X (I -X)^{-1}$

   where "I" is the identity matrix.
5. develop a casual diagram which is used to find the values of "r" "c", sum of rows and sum of columns respectively.

   Their calculation is given below.

   $T= [t_{cd}]$ $mxm^{c,}$ d=1,2,3, ...p

   R= (r1, rc, &rp) = (ri) p

   r+c states the significance of each factor, it ranks all the factors. Here, r-c expresses the relation. If r-c shows positive value, it follows cause category and if r-c shows negative value, it follows effect category.
6. Finally, taking the average of the T matrix, threshold value (α) need to calculate. Threshold value (α) filters the unimportant relation among the elements. The greater value α considers as important and it is showing in the cause effect diagram.

2.3. DEVELOPMENT OF THE INTEGRATED TISM-DEMATEL MODEL

In order to develop TISM and DEMATEL model, nineteen barriers were identified in talent management through literature review. After that experts and academicians identified barriers were filtered, and some of the barriers were merged. Twenty-six Personnel of power sector were connected. Their age range was 25 to 55 years old. After a lot of discussion with experts and academicians nineteen barriers were filtered /merged to twelve.

After merging nineteen barriers to twelve, the experts were appealing for fill table 2 based on their experienced and knowledge.

After collecting the answer from the experts, all the relationship and its interpretations were recorded. Then they were sent back to the experts for their opinions. After three iterations, experts have agreed the interrelation between the barriers and the same are supplied in the supplementary material; for which initial reachability matrix was developed (Table 1).

After that a significant transitive links was developed and final rechability matrix was formulated (Table 2).

Final rechability matrix helped to build the rechability and antecedent sets, and their intersections were noted. It helps to find out their level of partitioning. 12 barriers were partitioned into 3 levels in this study (Table 3)

FRM formed a diagraph by maintaining a significant transitive links, and the final diagraph was developed. Then the final diagraph was changed in binary matrix displaying the relationships and after that interaction matrix was formulated. Final diagraph helps to developed TISM model by exchanging nodal values with barriers statements (Figure 1).

The interpretations of the barriers were indicated in TISM model from the binary matrix (Supplementary material). In FRM there is influenced power and dependency form, with the help of this the driving and dependency diagram was formulated (Figure 2).

All the twenty-six (26) experts were requested to fill the direct relationship matrix, and the rage of the relationship. It helps to develop DEMATEL cause effect relationship model. After obtaining all the matrices, the entities were averaged (Table 4).

Then the average decision matrix was standardized, and the total influenced matrix was generated respectively. Table 5 represents total influenced matrix.

After that T matrix calculated with the values of r+c and r-c. The values of r+c and r-c with ranking of the challenges were displayed in Table 6.

For α, average of the T matrix was considered. The value which was lower than α were removed and inner dependency matrix was developed (Table 7).

3. RESULTS

Table 1. Initial Reachability Matrix of Barriers

No	Barriers	1	2	3	4	5	6	7	8	9	10	11	12
1	Insufficient Talent Supply (B1)	1	1	0	1	1	0	0	0	1	0	0	1
2	Unsecured Career Growth (B2)	1	1	1	0	0	0	0	1	0	0	0	1
3	Scarcity of Man power (B3)	0	1	1	0	1	0	0	1	0	0	0	1
4	Shortage of Training Program (B4)	1	1	1	1	0	0	0	1	0	0	0	0
5	Lack of Advance technological and Technical Knowledge (B5)	0	0	0	1	1	0	1	0	0	0	0	0
6	Absence of Protection in Mechanism (B6)	0	0	0	0	1	1	0	0	0	0	0	0
7	Lack of Infrastructure Development (B7)	0	0	0	0	0	0	1	1	1	0	1	0
8	Workforce Adjustment (B8)	1	1	1	0	0	0	0	1	0	0	0	0
9	System Loss (B9)	1	0	1	1	0	1	1	1	1	0	0	0
10	Lack of Supply (B10)	0	0	0	0	0	1	1	0	0	1	1	0
11	High Demand (B11)	0	0	0	0	0	1	0	0	0	1	1	0
12	Inadequate Financial incentive (B12)	0	1	0	0	0	0	0	0	0	0	0	1

Table 2. Final Reachability Matrix (FRM) Barriers

No	Barriers	1	2	3	4	5	6	7	8	9	10	11	12	Driving power
1	Insufficient talent supply (B1)	1	0	1	0	0	0	0	0	0	0	0	0	2
2	Unsecured career growth (B2)	1	1	1	0	0	0	0	0	0	0	0	0	3
3	Scarcity of manpower (B3)	1	0	1	0	0	0	0	0	1	0	0	0	3
4	Shortage of training program (B4)	0	0	1	1	0	0	0	0	0	0	0	0	2
5	Lack of advance technological and technical knowledge (B5)	0	1	1	0	1	0	0	0	0	0	0	0	3
6	Absence of protection mechanism in action (B6)	0	0	1	0	0	1	1	0	0	0	0	0	3
7	Lack of infrastructure development (B7)	0	0	1	0	0	0	1	0	0	0	0	0	2
8	Workforce adjustment (B8)	0	0	1	0	1	0	1	1	1	1	0	0	6
9	System loss (B9)	0	0	1	0	0	0	1	0	1	1	0	0	4
10	Lack of Supply (B10)	0	0	1	0	0	0	0	0	1	1	0	0	3
11	High demand (B11)	0	0	1	0	0	0	0	0	1	0	1	1	4
12	Inadequate financial incentives (B12)	0	0	1	0	1	0	0	0	0	0	0	1	3
	Dependence	3	2	12	1	3	1	4	1	5	3	1	2	38/38

Table 3. Level Partitions of the Final Reachability Matrix Iteration I to Iteration III

S.N	Reachability Matrix	Antecedent set	intersection	Level
1	1,2,4,8,9	1,3	1,2	**II (1)**
2	1,2,3,8,12	2,5	2	**I** (2)
3	2,3,5,8,12	1,2,3,4, 5,6,7,8,9,10,11,12	2,3,5,8,12	**III** (3)
4	1,2,3,4,8	4	4	**I** (4)
5	4,5,7	5,8,12	5	**I** (5)
6	5,6	6	6	**I** (6)
7	7,8,9,11	6,7,8,9	7,8,9	**III** (7)
8	1,2,3,8	8	8	**I** (8)
9	1,3,4,6,7,8,9	2,3,4,8,9,10,11	3,4,8,9	**III** (9)
10	6,7,10,11	8,9,10	10	**I** (10)
11	6,10,11	11	11	**I** (11)
12	2,12	11,12	12	**I** (12)

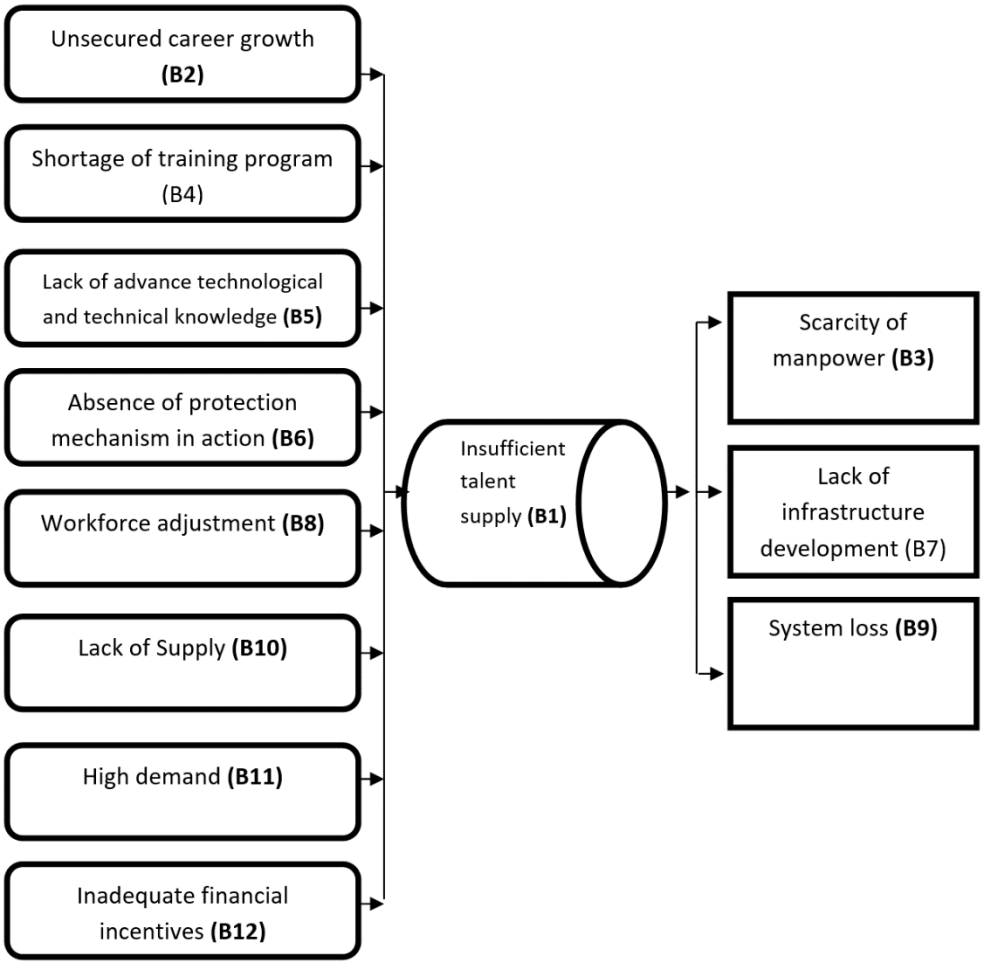

Fig. 1. TISM based model of challenges

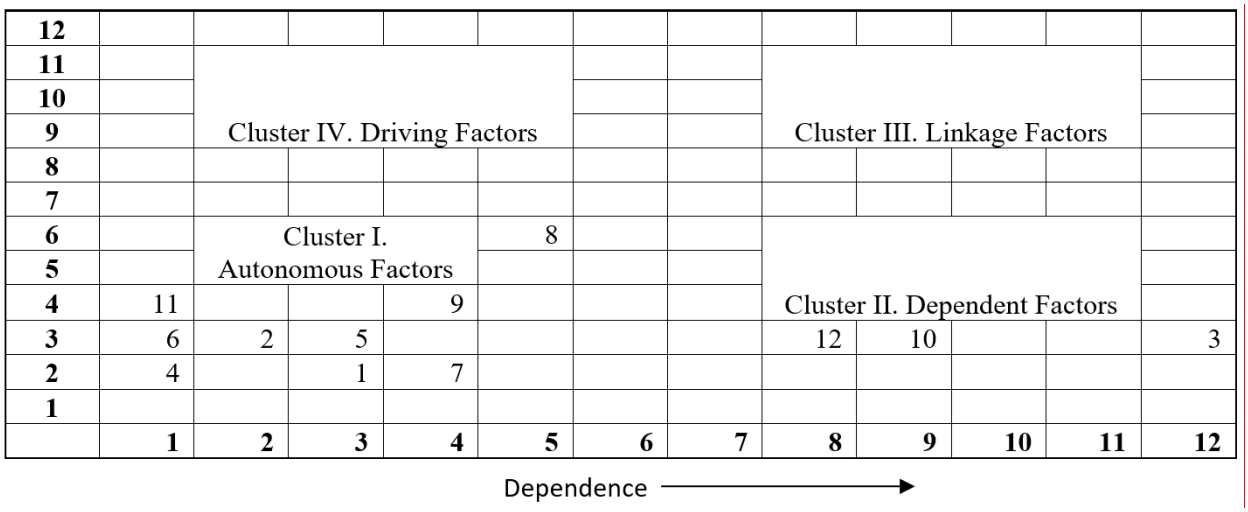

Fig. 2. Driving power and dependence diagram of barriers

Table 4. Average Decision Matrix

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
B1	0	2	0	1	3	0	0	0	0	0	1	0
B2	2	0	1	0	0	0	0	2	0	0	0	1
B3	3	0	0	1	1	0	0	0	0	0	0	0
B4	3	0	0		0	0	0	3	0	0	0	0
B5	0	0	0	0	0	0	0	0	0	0	0	0
B6	0	0	0	0	0	0	1	1	0	0	0	0
B7	0	0	0	0	0	0	0	0	0	0	0	0
B8	1	1	1	0	0	0	0	0	0	0	0	0
B9	1	1	1	1	1	0	0	1	0	0	0	0
B10	0	0	0	1	1	0	0	0	0	0	1	0
B11	0	0	0	0	0	0	0	0	0	0	0	0
B12	1	0	0	1	0	0	0	0	0	0	0	0

Table 5. Total relationship matrix

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	ri
B1	1	0.125	0	0.0625	0.1875	0	0	0	0	0	0.0625	0	1.4375
B2	0.125	-1	0.0625	0	0	0	0	0.125	0	0	0	0.0625	-0.625
B3	0.1875	0	-1	0.0625	0.0625	0	0	0	0	0	0	0	-0.6875
B4	0.1875	0	0	-1	0	0	0	0.1875	0	0	0	0	-0.625
B5	0	0	0	0	-1	0	0	0	0	0	0	0	-1
B6	0	0	0	0	0	-1	0.0625	0.0625	0	0	0	0	-0.875
B7	0	0	0	0	0	0	-1	0	0	0	0	0	-1
B8	0.0625	0.0625	0.0625	0	0	0	0	-1	0	0	0	0	-0.8125
B9	0.0625	0.0625	0.0625	0.0625	0.0625	0	0	0.0625	-1	0	0	0	-0.625
B10	0	0	0	0.0625	0.0625	0	0	0	0	-1	0.0625	0	-0.8125
B11	0	0	0	0	0	0	0	0	0	0	-1	0	-1
B12	0.0625	0	0	0.0625	0	0	0	0	0	0	0	-1	-0.875
Cj	1.6875	-0.75	-0.8125	-0.6875	-0.625	-1	-0.9375	-0.5625	-1	-1	-0.875	-0.9375	

Table 6. Values of casual parameters

	Ri	Cj	ri+cj	ri-cj	Nature
B1	1.4375	1.6875	3.125	-0.25	Effect
B2	-0.4375	-0.75	-1.1875	0.3125	Effect
B3	-0.6875	-0.8125	-1.5	0.125	Effect
B4	-0.625	-0.6875	-1.3125	0.0625	Effect
B5	-1	-0.625	-1.625	-0.375	Effect
B6	-0.875	-1	-1.875	0.125	Effect
B7	-1	-0.9375	-1.9375	-0.0625	Effect
B8	-0.8125	-0.5625	-1.375	-0.25	Effect
B9	-0.625	-1	-1.625	0.375	Effect
B10	-0.8125	-1	-1.8125	0.1875	Effect
B11	-1	-0.875	-1.875	-0.125	Effect
B12	-0.875	-0.9375	-1.8125	0.0625	Effect

Table 7. Inner dependency Matrix (α= -.625)

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
B1	1	0.125		0.0625	0.1875						0.0625	
B2	0.125		0.0625					0.125				0.0625
B3	0.1875			0.0625	0.0625							
B4	0.1875							0.1875				
B5												
B6							0.0625	0.0625				
B7												
B8	0.0625	0.0625	0.0625									
B9	0.0625	0.0625	0.0625	0.0625	0.0625			0.0625				
B10				0.0625	0.0625						0.0625	
B11												
B12	0.0625											

4. DISCUSSION

There are four levels in the TISM-based model. These levels were graded into four segments. They are “highly”, “average”, “less”, and “no”. In highly specialized areas, there are eight barriers such as: unsecured career growth (B2), shortage of training program (B4), lack of advance technological and technical knowledge (B5), absence of protection mechanism in action (B6), workforce adjustment (B8), lack of supply (B10), high demand (B11), inadequate financial incentives (B12). These barriers can control the top 3 levels. These eight barriers are highly significant for policy/ decision makers. In average significance, there is only one barrier such as insufficient talent supply (B1). This barrier can control top levels and is being driven by the bottom-most level. “Less” is the last level; there are 3 barriers, such as scarcity of manpower (B3), lack of infrastructure development (B7), system loss (B9). These barriers are dependent on the two levels (highly significant and average significant). Their control power is low, and decision makerspay less attention of these variables.

The power matrix of the MICMAC analysis shows the driving and dependency intensities of all twelve barriers. MICMAC analysis has been divided into four clusters, such as Cluster I autonomous factors, Cluster II dependent factors, Cluster III linkage factors, and Cluster IV driving factors. Autonomous clusters are less important because they have less driving and dependence intensity. In our study, eight barriers were identified namely insufficient talent supply (B1), unsecured career growth (B2), shortage of training programs (B4), lack of advance technological and technical knowledge (B5), absence of protection in mechanism (B6), lack of infrastructure development (B7), workforce adjustment (B8), system loss (B9), high demand (B11). The dependent cluster factors are less considerable than the independent factors. As the factors of the previous cluster have a high dependency and less driving possibility. In this section, there are three barriers, namely: scarcity of manpower (B3), lack of supply (B10), inadequate financial incentives (B12). In the terms of the linkage and driving factors, there are no barriers to the study.

The output result of DEMATEL analysis has been tabulated in Table 6. All the barriers are divided into two parts, namely "Cause" and "Effect". In this group, all the barriers, namely "insufficient talent supply (B1), unsecured career growth (B2), scarcity of manpower (B3), shortage of training programs (B4), lack of advanced technological and technical knowledge (B5), absence of protection in mechanism (B6), lack of infrastructure development (B7), workforce adjustment (B8), system loss (B9), and lack of supply (B10), high demand (B11), and inadequate financial incentives (B12)

Integrated TISM and DEMATEL-based structural models, which are developed by imposing weights of the inner dependency matrix (Table 7) on the TISM model. The important transitive links have been retained in the integrated model, and weight indicates the strength of the relationship between the barriers.

The output of the TISM approach shows that eight barriers, namely unsecured career growth (B2), shortage of training programs (B4), lack of advanced technological and technical knowledge (B5), absence of protection mechanism in action (B6), workforce adjustment (B8), lack of supply (B10), high demand (B11), inadequate financial incentives (B12). These barriers can control the top three levels. These eight barriers are highly significant for decision makers. In average significance, there is only one barrier such as insufficient talent supply (B1). Furthermore, the cause-effect diagram of the DEMATEL approach indicated that B2, B3, B4, B6, B9, B10, and B12 have the most significance. The variation in this result may be differences in the judgments of the experts. DEMATEL methodology demands transitory of the relationship of the relationship, where as TISM methodology only shows direction of the relationship is needed. It is worth mentioning that the most critical barriers indicated by all three methodologies are the same. Policy and decision makers need to focus on these factors to improve sustainability of the human resources.

INSUFFICIENT TALENT SUPPLY

Because school and college students are unaware of the job opportunities and career paths (short and long term) in the power sector, the power sector is no longer a favored area among in younger generation. The present educational system is unable to assure manpower stability. So the gap between demand and supply for a qualified workforce is increasing every year.In an organization, employees are hired to assist the organizationin continuing to engage with its customers for profits. A scientific management theory known as "Tailors" that gained popularity at the turn of the century n 1917. This idea has three simple standards which such as "locate the only quality manner to carry out every mission, cautiously healthy every different employee to every mission, carefully supervise employees and use rewards, punishment, and motivators" [17].The merger of scientific management bureaucratic theory and administrative theory emphasizes on the three major steps mentioned above, and the issue of carefully matching each other to each task explains why every organization should have enough employees. The third point explains the fact that the manager should have close supervision of their workers, using rewards and punishment as motivators. Also, in achieving organizational goals or objectives, not only employees are needed, but quality personnel who are well trained are needed to work closely and embrace the three management concepts as demanded by their superiors.

UNSECURED CAREER GROWTH

Today's [17], an individual's career is no longer tied to a single organization, as career changes and job mobility have become common phenomena. Sorensen et al. (2005) said that to be successful in one's career, employees today have to balance the relationship between their desire for career growth and their attitudes toward their current organizations. Organizations that provide mechanisms for employee career growth create a mutual investment type of relationship with their employees over one's work life or career stage, and across organizations, in contrast to viewing career growth experiences from the perspective of one's experiences in their present organization. Consequently, in this research paper, career growth is shown in the power sector. That shows that due to the power sector, career growth opportunities are very low. So, talented people do not want to go this sector. Uncertain career growth discourages employees. Moreover, other countries economics like Middle East and western countries, Bangladeshi marginal wage package makes it difficult to retain talented employees.

SCARCITY OF MANPOWER

Ref. [18] examined there is a general consensus that there is a scarcity of talent in the power sector is a long term problem. It increases project cost and risk. The flow of talent into the power sector has been gradually drying up as candidates have sought an alternative and often more lucrative career option. The government is trying to solve this problem. The education system does not often deliver the minimum number of specialists in the power sector, engineering, estimating, surveying, and contract management. Facing a desperate game of catch up, the industry needs a genuine collaboration between power sectors, contractors, and government to attract more school leavers and graduates. Organizations should seek to stay in touch with changing employee aspirations. By encouraging various in its employee's practices and by offering them better flexibility in working hours, the sector can reach out to a wider potential

audience that perhaps would not previously have considered such a career. Investment in current employees is important in order to offer better defined career structures, with a greater focus on training and higher salaries if possible.

SHORTAGE OF TRAINING PROGRAMS

Training [18] is important because it enhances the capabilities of an employee. A training program helps an employee's skillful specific knowledge of. Many power sector companies reduce or cancel training programs during the slack period to save money. However, when the economy gets better, training programs do not expand at the same rate. Ref. [19] says that this makes employees feel uncomfortable about their jobs, which [20] leads to attrition.

LACK OF ADVANCED TECHNOLOGICAL AND TECHNICAL KNOWLEDGE

The lack of advanced technological and technical knowledge, and also job specific skill, is an institutional weakness. It prevents growth in the country's power sector. [21]. It is extremely important in the operation of a power sector company. It is necessary to create databases. Data bases must be created in the company. Second, mathematical calculations are essential for the construction of [20] marketing products. HR managers must keep in mind that the employees they are hiring for the power sector must be comfortable with technology so that they can operate efficiently and freely. In order to do so, HR managers must be able to determine the precise skills of the new applicants they will hire.

ABSENCE OF PROTECTION IN MECHANISM

Ref. [21] says that this enabler is associated with the secure of the filed employee. Protection is very necessary in field operations. Without it, life becomes at stake.

LACK OF INFRASTRUCTURE DEVELOPMENT

Infrastructure development is one of the major factors of economic development in a country, especially in power sector. But there are some problems that relate to the infrastructure developed in Bangladesh. Improvement of this sector will bring Bangladesh at par with other development Asian countries and it will increase national income by up to 6 percent by 2030.

WORKFORCE ADJUSTMENT

Working in the isolated, and in some cases, threatening conditions and away from the family for longer period's influences the degrees of inspiration of the representatives. Ref. [22] said that It turns into a challenge for the representatives to adjust to the food, environment, nausea, antagonistic territory, and nearby culture. Additionally, generalizing of professions for the situation area as 'low-gifted' goes about as a detour to draw in youthful ability.

SYSTEM LOSS

Ref. [23] states that the conducting wires which are utilized for power transmission have a definite measure of resistance. Thus, to overcome this obstruction, a piece of the electrical energy is converted to heat. This deficiency of energy is known as system loss. In Bangladesh, the major system loss occurs at a system loss of around 14.02%.

LACK OF SUPPLY

Raw material is very important of organizations. Without raw material it is impossible to produce electricity. Natural gas is most important raw materials. Due to the shortage of supply, day by day the number of supply is decreasing, [24]. If supply of the raw materials is available in market then power sector industry tries to make up this shortage of electricity [25]

HIGH DEMAND FOR ELECTRICITY

As Electricity markets are liberalized; consumers become exposed to more volatile electricity prices and may determine to modify the profile of their demand to cut down their electricity costs. According to the World Bank Development Report, Bangladesh's energy demand has been expanding at a normal speed of 10% over the last ten years. But, supply of the commodity presently can't seem to arrive at a similar speed. Right now, the nation has an age limit of 20,133 MW, an enormous part of which is unutilized because of a shortage of gas, problematic old plants, and an absence of improvement in the power framework, and it's estimated that inconsistent

power supply has been costing the country 2% of GDP annually. In FY18, 2,817 MW of new capacity was added, expanding the all out age ability to 15,953 MW, an increment of 17.69% from the earlier year. However, there is a shortage on the lookout; the power area has been taking critical steps to oblige the objectives of arriving at the more prominent populace staying aware of expanded requests.

INADEQUATE FINANCIAL INCENTIVES

Financial incentive [26] is defined as a monetary benefit offered by an organization to encourage its employees. A financial incentive motivates actions that otherwise might not happen without the monetary benefit. An incentive always motivates employees in different ways. [24] Targeted incentives and strategies have proven a effective in encouraging the implementation of power projects. It may be bonus, promotion, etc.

5. CONCLUSION

Globalization leads to connections and acquisitions, new product developments, technological advancements, changes in regulatory conditions, etc. These are the factors that act as barriers to the power sectors attracting, developing, and retaining knowledge-based and skillful manpower. The human resource management department has to manage all the factors the basic factors of the labor market in the power sector by realizing workforce demand, which is governed by the demographics, and is structural in the long term.

The nature of the power sector is changeable. This day's energy domain is accepting better practice from various other sectors, which is improving the overall efficiency of the power sector. The human resource department has played an important role in improving overall business performance, and it focuses on the various activities. It helps with the expansion and growth of industries. Employee motivation must be high in the workplace, and this must be ensured by the human resource team.

In this study, an integrated TISM-DEMATEL based methodology has been developed for analyzing the barriers to sustainable talent management in the context of power sector industries. This paper tries to help the HR manager understand the relationship between the barriers and indicates the most critical ones for the corporate sustainability of an organization in the power sector. Insufficient talent supply, unsecured career growth, scarcity of manpower, and shortage of training programs were the most significant in this paper. There are also various factors that influence the sector in various ways. Also, various factors have been suggested and discussed to achieve human resource sustainability.

In this research paper, expert judgments may be biased. The results of the present study apply in the Bangladeshi economy in the power sector. However, the studies may be applied to other sectors or industries and economies by carrying out significant modifications to the integrated model. A comparative study can be conducted in any other industry sector. When we compare the results to the other results, then it will come out what the similarities and dissimilarities. In the future, researchers would like to validate the findings. Other researchers may use to different decision-making techniques to analyze the identified barriers, such as the analytic hierocracy process, best-worst method, interpretive ranking process, or fuzzy sets.

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