The Study of Manpower Application of Supply Chain Management System for Occupational Disasters

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Abstract. After occupational disasters happen, the person with mild injury may suffer from temporary disability or temporary total disability. After receiving treatment and rehabilitation, the injured person can return to the workplace. However, those with serious conditions, such as mild or severe disability, will be less capable in work, resulting in income reduction. In order to assist the disabled in shaking off the difficulty in economy and life, returning to workplace is the core issue. In particular, occupational disasters are detrimental to the working ability of disabled workers and will cause inconvenience in life, resulting in salary reduction and even the poor motivation to return to workplace. This study focuses on the impact of innovative high-quality labor dividends on supply chain performance, and explores the mechanism that assists disabled laborers suffering from occupational disasters in returning to the workplace after occupational rehabilitation. This paper discusses the “manpower supply chain management system” that functions among the labor factor, government factor, and capital factor, adopts the state responsibility mechanism to improve the human resource utilization model of the disabled suffering from occupational disasters, and conducts analysis through literature review and logical deduction. The “supply chain management system” can be divided into five factor constructs: 1) customer service factor: the order delivery rate reflects the real time of the manpower application of talent recruitment websites; 2) cost factor: the independent legislation of the occupational disaster insurance law transfers responsibility to the state; 3) quality factor: the auxiliary facilities needed for the professional skills of the disabled suffering from occupational disasters are provided in accordance with the type of business; 4) productivity factor: employers are provided with the auxiliary facilities needed for assisting the disabled suffering from occupational disasters in returning to work (or returning to previous position); 5) asset management factor: policies supporting the disabled suffering from occupational disasters to return to workplace should be implemented to alleviate employment discrimination.

Introduction

According to the data of Bureau of Labor Insurance, the number of cases of payment for occupational disaster disability was 2,556 by Wu[1], and the survey regarding the employment of the disabled suffering from occupational disasters shows that 34.4% of the disabled laborers are out of job currently, 24.2% of whom have not returned to workplace. In order to assist the disabled in shaking off the difficulty in economy and life, returning to workplace is the core issue. In particular, occupational disasters are detrimental to the working ability of disabled workers, and will cause inconvenience in life, resulting in salary reduction and even the poor motivation to return to workplace.

Su [2] proposed that supply chain performance can be assessed from five factors: customer service factor, cost management factor, quality factor, productivity and asset management factor. In order to enable the workforce of occupational disaster to rebuild the workplace mechanism and alleviate employment discrimination, this study discusses the current standards in Taiwan for rebuilding the workplace for the disabled laborers suffering from occupational disasters, analyzes the manpower application of supply chain management system, and focuses on the impact of innovative high-quality labor dividends on supply chain performance.
The study is divided into three parts, namely medical rehabilitation, functional rehabilitation and social rehabilitation. Medical rehabilitation is sub-divided into medical support services, career counseling assessment and consultation; functional rehabilitation is sub-divided into work ability assessment, intensive work training, job redesign, entrepreneurship counseling, supportive employment service, employment safety and monitoring of reintegration services; social rehabilitation is sub-divided into psychological support, social adaptation, labor rights and interests, quality of life at home, barrier-free transportation services and early retirement. The framework for workforce reconstruction of disabled laborers suffering from occupational disasters is shown in Figure 1. [4] [5] [6] [7] [8][10].

**Practice of Manpower Application of Occupational Disasters in Taiwan**

The current manpower application mechanism for occupational disasters is based on the level of disaster relief for workers, medical rehabilitation, physical and mental conditions, and the communication and coordination between the previous work unit and the employer. Besides, the current mechanism involves public and private medical units, civil society, labor health service centers and occupational injury prevention and treatment center, all of which provide job-related psychological counselling and social adaptation-related assistance. If workers suffering from occupational disasters do not intend to return to the original workplace for re-employment, they are assisted through the employment safety system that includes vocational training, entrepreneurship counseling and employment services by Li and Kuo [3].

The mechanism also emphasizes that the workforce suffering from occupational disasters is the most important asset of the employer, and the provision of the auxiliary facilities necessary for work is a legal obligation of the employer. In addition, one of the keys to enabling the disabled laborers to return to workplace is the opportune recommendation and assistance provided by the original employer by Li and Kuo [3]. The practice of occupational disaster medical rehabilitation is divided as follows into medical rehabilitation, functional rehabilitation and social rehabilitation:
Status Quo of Medical Rehabilitation Practice

The occupational injury treatment centers are distributed in 1. North District Occupational Injury Treatment Center (a total of 3 hospitals, a total of 25 online hospitals); 2. Central District Occupational Injury Treatment Center (a total of 4 hospitals, a total of 18 online hospitals); 3. South District Occupational Injury Treatment Center (a total of 2 hospitals, a total of 22 online hospitals); 4. East District Occupational Injury Treatment Center (a total of 1 hospital, 3 online hospitals); a total of 4 areas (10 hospitals and 71 online hospitals) [9][10]. The distribution of regional occupational injury prevention and treatment centers and online hospitals is shown in Figure 2.

![Figure 2. Distribution of regional occupational injury prevention and treatment centers and online hospitals.](source: Website of Occupational Injury Management Service Center, Administration of Occupational Safety and Health, Ministry of Labor and [9][10])

Status Quo of Functional Rehabilitation Practice

The career reconstruction of disabled laborers suffering from occupational disasters can be divided into six parts, namely psychological counseling and social adaptation, work ability assessment and reinforcement, job re-design, career counseling assessment, vocational training and employment services, track and counseling and re-employment. At present the functional rehabilitation service is provided by the service personnel responsible for individual laborer, disabled laborers suffering from occupational disasters and employers, who jointly negotiate the relevant working conditions, working environment and auxiliary facilities[9][10].
| Region | Institutions Providing Services and Their Contact | Service Item |
|--------|--------------------------------------------------|--------------|
| Northern | National Taiwan University Hospital (physical treatment center) | Work ability assessment and reinforcement; Psychological counseling and social adaptation; Career counseling assessment |
| | Taipei Veterans General Hospital (department of rehabilitation) | Work ability assessment and reinforcement; Psychological counseling and social adaptation; Career counseling assessment |
| | Taipei Medical University Hospital (functional treatment group) | Work ability assessment and reinforcement; Psychological counseling and social adaptation |
| | Sunshine Social Welfare Foundation | Psychological counseling and social adaptation |
| | Taipei Medical University-Shuang Ho Hospital, MOHW (department of rehabilitation) | Work ability assessment and reinforcement; Psychological counseling and social adaptation |
| | Sijih Cathay General Hospital (work reinforcement center) | Work ability assessment and reinforcement; Psychological counseling and social adaptation |
| | Linkou Chang Gung Memorial Hospital (plastic surgery rehabilitation center) | Work ability assessment and reinforcement; Psychological counseling and social adaptation; Career counseling assessment |
| | Development Center for the Spinal Cord Injured | Psychological counseling and social adaptation |
| Central | Chung Shan Medical University (Reinforcement Center of Laborers of Occupational Disaster, Central District, Zhongxing Hospital) | Work ability assessment and reinforcement; Psychological counseling and social adaptation; Career counseling assessment |
| | China Medical University Hospital, East District, Taichung (rehabilitation section) | Work ability assessment and reinforcement |
| | Hui-Sheng Hospital (rehabilitation section) | Work ability assessment and reinforcement |
| | China Medical University Hospital (Tsaotun) (rehabilitation section) | Work ability assessment and reinforcement |
| | Changhua Christian Hospital (medical rehabilitation section) | Work ability assessment and reinforcement |
| Southern | National Cheng Kung University (room 304, 3rd floor, functional treatment section) | Work ability assessment and reinforcement; Psychological counseling and social adaptation; Job re-design |
| | Kaohsiung Chang Gung Memorial Hospital (rehabilitation section) | Work ability assessment and reinforcement; Psychological counseling and social adaptation; Job re-design |
| | Kaohsiung Veterans General Hospital (department of rehabilitation) | Work ability assessment and reinforcement; Psychological counseling and social adaptation; Job re-design |
| | Kaohsiung Medical University Memorial Hospital (work ability assessment and reinforcement center of rehabilitation section) | Work ability assessment and reinforcement |
| | Kaohsiung Municipal Siaogang Hospital (rehabilitation section) | Career counseling assessment |
| Eastern | Lotung Poh-Ai Hospital (rehabilitation technique section) | Work ability assessment and reinforcement; Job re-design |
| | Hualien Tzu Chi Hospital (rehabilitation section) | Work ability |

Source: Website of Occupational Injury Management Service Center, Administration of Occupational Safety and Health, Ministry of Labor [9][10]
Status Quo of Social Rehabilitation Practice

At present, social rehabilitation can provide various social welfare subsidies, bonus and links to relevant economic or material resources. In the future, it can also improve the quality of welfare services for the disabled, accompanying medical services and transportation support services Li and Kuo [3].

Summary

The greatest difficulty for the employment of disabled laborers suffering from occupational disasters is the insufficient employment information channels and employment discrimination. This study suggests that the return of disabled laborers suffering from occupational disasters to the workplace in Taiwan should be discussed in the short, medium and long run, respectively. The first thing taken into account is the cost benefit, then the improvement of the service mechanism and related laws and regulations, and the establishment of a customized one-stop service model to solve the existing problems, aiming to meet the international service standard for occupational disaster workers returning to the workplace by Li and Kuo [3].

Practice in the Short Run—Integrating Existing Service Mechanisms and Laws and Regulations

Some overlapping parts of the existing service mechanism are proposed to develop towards the operation mode of division of labor. The functional rehabilitation is suggested to be in the charge of the Administration of Occupational Safety and Health, Ministry of Labor; the career reconstruction is suggested to be in the charge of the Administration of Labor Force Development, Ministry of Labor, so that the division of labor can be professional without the repetition of service mechanisms and resources, and that disabled laborers suffering from occupational disasters in Taiwan are more willing to return to the workplace. In terms of financial assistance, small- and medium-sized enterprises are suggested to be subsidized properly given the extremely high proportion of personnel costs in the operating costs. In doing so, they are more motivated to allow disabled laborers suffering from occupational disasters to return to the enterprise, improving the service performance of the competent unit. An information technology service utilization model is adopted to allow disabled laborers suffering from occupational disasters to work at home, thereby improving the service performance of the competent unit by Li and Kuo [3].

Practice in the Medium Run—Integrating Service Windows and Building an Information Website Platform of One-stop Service Model

In addition to establishing a service model related to functional rehabilitation, the suggested one-stop service model involves a one-stop website service platform, the legislation of establishing employment service agencies that help the disabled become self-reliant laborers, and the professional assistance for employers who hire disabled workers. In doing so, the service windows can be integrated and the service model can be one-stop. The main services provided by the employment service agency include the collection, analysis and use of information regarding the employment progress and functional rehabilitation of the disabled, the investigation, research and technical analysis of big data on online platforms, which will improve the service performance of the competent unit. The disabled are provided with vocational guidance, employment counseling, occupational orientation test and vocational skill assessment. They are also provided with vocational adaptation training, vocational skill development training, job placement and post-employment adaptation guidance. In order to encourage institutions dedicated to the employment assistance of the disabled to engage in computer-based employment placement and related services, it is recommended that the relevant competent unit adopt this model that can improve its service performance by Li and Kuo [3].
Practice in the Long Run—Manpower Application of Supply Chain Management System

To promote the manpower mechanism for disabled laborers suffering from occupational disasters in the long run, it is necessary to evaluate and calculate the cost-effectiveness precisely, adjust the service mode in time and improve service efficiency and quality, and introduce the concept of the manpower application of supply chain management for analysis. According to the above-mentioned five facets: 1) Customer service factor: The order delivery rate reflects the real time of the manpower application of talent recruitment websites; 2) Cost factor: The independent legislation of the occupational disaster insurance law transfers responsibility to the state; 3) Quality factor: The auxiliary facilities needed for the professional skills of the disabled suffering from occupational disasters are provided in accordance with the type of business; 4) Productivity factor: Employers are provided with the auxiliary facilities needed for assisting the disabled suffering from occupational disasters in returning to work (or returning to previous position); 5) Asset management factor: Policies supporting the disabled suffering from occupational disasters to return to workplace should be implemented to alleviate employment discrimination.

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