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A Quantitative Approach to Human Capital Management

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Abstract

The objective is to provide a quantitative technique to help managers to make decisions by objectively evaluating their Human Capital Management (HCM) and projecting profit increase generated by HCM. This study approach is divided into two steps. In the first step, this study selects and formulates the factors which represent HCM practices by means of principal component and factor analysis. In the second step, personnel adjusted added (PAV) value is defined as the corporate output. Multiple regression model is constructed to identify the HCM factors which influence PAV. This process establishes the model for objectively judging their success of HCM.

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Keywords: Human capital management; Human capital; Intangibles; Factor analysis; Multiple regression model.

1. Introduction

In recent years, competition among companies has been intensified by globalization, innovation, and consolidating IT technologies. Management structure changes have been carried out in companies. Profit structure supported by tangible assets has been changed to be supported by intangible assets (Lev, 2001). Regarding the percentage of GDP in the United States, tangible investment was about 1.5 times more than intangible investment in around 1980. However around 2000, intangible investment has exceeded tangible investment (Corrado, 2006). In Japan, tangible investment was about three times more than intangible investment in around 1980, but around 2000, tangible investment decreasing to about 1.5 times more than intangible investment (Fukao, 2008). Thus intangible investment

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as percentage of GDP has been increasing in Japan, intangible investment will be greater than tangible investment in the future. Intangible assets have grown to become an important part of business resource.

1.1. Intangibles

In financial accounting, intangible assets are defined as claims to future benefits that do not have a physical or financial form (Lev, 2001). As noted above, intangibles are the source of corporate value. To evaluate intangibles, various ideas are born from various points of view, not only accounting. Intangibles in the RBV (Resource Based View), Intangible assets and IC (Intellectual Capital) are the three main ideas that are represented regarding this issue.

The concept of intangible assets is born in accounting theory, where it is intended to be accounted as the assets on the balance sheet classifies intangibles into three categories: innovation-related, human resource, and organizational intangibles (Lev, 2001).

RBV (Resource Based View) is a concept of management strategy where the internal resources are a source of competitive advantage. Hofer and Schendel (1978) classifies the internal resources into five main part. Human resources, organizational resources, and technological resources are in the intangibles category.

The MERITUM project report (2002) is a representative study of IC (Intellectual Capital) where intangibles is a component of the kind of company's value, classified into human capital, structural capital, and relational capital.

This study recognize that internal resources are constructed from financial resources, physical resources or tangibles, and intangibles, which are human capital, organizational capital and relational capital.

The value of human capital originates from competence and attitude (Roos, 1997) (Fujita, 2007).

- Competence; the content part of human capital; the knowledge, skills, talents and know-how of employees.
- Attitude; the employees' willingness to use their abilities to the advantage of the company: motivation.

The organizational capital consists of process and intellectual property.

- Process; those are accumulating in the organization and not protected by law: organizational structure, process, regulations and knowledge database.
- Intellectual property; those are intangibles in the organization, and protected by law; patents, licenses, copyrights, and self-developed software and applications.

The relational capital is consists of networks, brands and customers.

- Network: material procurement, funding procurement and finding new partners.
- Customer: sales base, partnerships, formation provision capability and closeness of relationship.
- Brand: awareness potential, contribution to finding new customers and contribution to finding new partners.

1.2. Human capital management

The common concept of these is denoted as human capital or human resources. In general, human capital is more important than other capitals. Thus, human capital management is an important research subject. The research subjects of so-called human resource management are the schemes at every stage of employees between their employments and their exits.

Recently, human resource management coupled with financial performance becomes the "Human resource management and organization performance model", which is an important issue. Bratton and Gold (2003) cites the main approaches of this model.

- Statistical evaluation; measuring change due to personnel measures by the correlation relationships and achievement variables
- Financial evaluation; measuring ROI (return on investment) of the measures.