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A Study on the Historical Development of Human Resource Accounting and Suggestions for Future Research Directions in Korea*

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〈Abstract〉

The purpose of this paper is to provide a history of HRA and suggestions for future direction in Korea. We adopt Flamholtz et al.'s classification of periods ; however, they describe papers only in chronological order for each period.

Thus, we try to reclassify research papers and we also complement research papers after 2002 and add evaluations for contributions of authors per each period. The first stage is the period when basic HRA concepts were derived. Hermanson suggested a model to measure human resource value in external financial reports. Research during the second stage was characterized by a period of basic academic research to develop and assess the validity of models. The term "Human Resource Accounting" was used for the first time. The third stage was characterized as a period of rapid growth of interest in human resource accounting. The American Accounting Association published reports on the development of HRA. Research during this period is expanded focusing on three areas. The fourth stage was characterized by a decreased interest in HRA. The final stage is characterized by the increasing interest for HRA among researchers internationally and the beginning of new approach to HRA.

Recently, a human resource liability approach in the measurement model was proposed and HRA is examined in the context of as one of intellectual capital disclosures and balanced scorecard.

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There has been little HRA research activities in Korea and very little HRA application cases from Korean firms. It would be highly appropriate for researchers and firms in Korea to cooperate for developing HRA disclosure cases associated with external reporting and internal decision making. Voluntary disclosure efforts of firms are also necessary to increase the understanding level of HRA. And, interdisciplinary efforts including accounting, human resources management, and finance are necessary to derive disclosure rules of HRA.

<Key words> Human Resource Accounting, Intellectual Capital, Balanced Scorecard

Ⅰ. Introduction

Traditionally, financial accounting has treated costs related to human resource management activities such as recruiting, training, and retirement as expenses on the income statement, rather than as assets on the balance sheet. Financial reporting has treated intangible assets as expenses because the fair value of most intangible assets involves much subjectivity and estimates and it hurts the reliability of accounting information. Intangible assets, however, like human resources, have the nature of assets because they provide future benefit to companies even though it is hard to estimate and compare their values among firms. If intangible asset information is recorded as assets and managed in the firm, it could provide relevant information to important decision making settings for manager and investor. There is a tradeoff relationship between information that is reliable or easily measurable and information that is relevant to decision making. Human resource accounting(HRA) involves accounting for a firm's human resources as assets or one of intellectual assets[1] that provide future benefits to firms. Although HRA measures incorporate

1) Intangible asset, intellectual capital, intellectual asset and balanced scorecard have been used in the similar context. Intangible assets are a asset category of financial accounting report and defined as identifiable non-monetary assets that cannot be seen, touched or physically measured, which are created through time and/or effort and that are identifiable as a separate asset. Intellectual assets and intellectual capital refer to all non-financial resources that determine the value and the competitiveness of an enterprise such as relational capital, human capital and organizational capital and have been used extensively in most of academic business areas and among practitioners. Balanced scorecard is a performance measurement system that includes a systematic approach for linking strategy to planning and control and consists of financial perspective, customer perspective, internal business perspective and innovation and learning perspective. Balanced scorecard began to be used in the managerial accounting area and has been used widely in most of academic business areas. Human resource accounting is to record, summarize and provide human resource data to internal decision maker and external stakeholder and thus can be closely linked to these four similar terms.

subjectivity, they are quite relevant in a variety of decision making contexts for managers and investors. In particular, HRA information is relevant to organizations whose human resources are very critical such as advertising, entertainment, technology, consulting firms and research and academic institutes.

Relative to the importance of the topic, HRA research in accounting area have not been so active recently compared to before 1980. The main stumbling blocks identified in the last decade include lack of a meaningful system of measurement, appropriateness of measuring human assets by a monetary value and the reluctance in organizations about the disarranging of the existing social order due to HRA implementation(Flamholtz, Kannan－Narasimhan and Bullen, 2004). Regardless of various barriers, HRA research in managerial accounting area has been quite active. Recently, the research focus is shifted from the United States to other countries. The purpose of this paper is to provide a history of HRA and suggestions for future direction in Korea. Basically, we adopt Flamholtz et al.'s classification of periods to review the history of HRA (Flamholtz et al., 2002). However, they describe papers in chronological order for each period and do not organize research papers based on accounting areas and measurement issue, which we believe their major shortcomings. Thus, we try to reclassify research papers based on external financial reporting perspective, internal managerial accounting perspective, measurement perspective. Further, we also complement research papers after 2002, when Flamholtz et al's paper was published, to very recent times. It is noteworthy that, after 2002, much HRA research have been implemented in linkage with the intellectual capital research.

Evidently, not enough attention has been paid to the HRA research in Korea. Starting from the introduction of HRA, the research focus has shifted to the intellectual capital research, where HRA is one of measures to show the status of intellectual capital of firms. In this paper, we provide future research directions for HRA in Korea. Section Ⅱ reviews the history of HRA following Flamholtz et al.'s classification and evaluates strengths and weaknesses of each period. Section Ⅲ reviews HRA research in Korea and provides future direction in Korea. Finally, we describe a conclusion in section Ⅳ.

Ⅱ. Historical Development of Human Resource Accounting

We adopt Flamholtz et al.'s classification scheme to review the history of HRA(Flamholtz et al., 2002). The authors classified the development of HRA as five stages as follows：

Stage 1(1960－1966) : Derivation of basic HRA concepts from related bodies of theory.
Stage 2(1967－1970) : Basic academic research developing measurement models.
Stage 3(1971－1977) : Rapid growth of interest in HRA.
Stage 4(1978－1980) : Period of declining interest in academia and corporations.
Stage 5(1981－Present) : Renewed international interest in HRA theory and practice and linkage with intellectual capital.

1. Stage 1(1960－1966) : Derivation of Basic HRA Concepts from Related Bodies of Theory

The first stage is the period when basic HRA concepts were derived in accounting area. Early accounting theorists(Scott, 1925 ; Paton, 1962) provided support for treating people as assets and accounting for their value. Early social psychologist, like Likert and Odiorne, studied leadership effectiveness and a new human resource perspective based on premise that people were truly valuable organizational resources. One of earliest works in HRA was accomplished by Hermanson. In his pioneering monograph, *Accounting for Human Asset,* Hermanson (1964, 1986) suggested a model to measure human resource value in external financial reports and provided inspiration for the next phase of early HRA development.

He proposed two possible techniques for developing surrogate measures of the monetary value of human resources : (1) the unpurchased goodwill method, and (2) the adjusted present value method. The former involves forecasting future earnings and allocating any excess above normal expected earnings for an industry to human resources. The latter method involves using the present value of the system of future wage payments to people adjusted by a performance efficiency factor to approximate human resource value. The efficiency factor is a ratio based upon the return on investment of the specific firm relative to other firms for a specified period. Thus the value of human resources is based on expected compensation adjusted for their efficiency relative to other human resources in the economy(Hermanson, 1986).

2. Stage 2(1967－1970) : Basic Academic Research Developing Measurement Models

Research during the second stage was characterized by a period of basic academic research to develop and assess the validity of models for the measurement of human resource cost and its

value. We assess this stage as the foundation of HRA research and this movement is initiated by University of Michigan. It was a time of research designed to formulate the present and potential uses of HRA as a tool for human resource professionals, managers, and external users of corporate financial information. In addition, exploratory experimental applications of HRA in actual organization were conducted.

Research during the early stages of development of HRA was conducted at the University of Michigan. A research team included Likert, founder of the University of Michigan Institute of Social Research of which he was a director of from 1946 to 1970, and well known for his work on management styles and management theory, and a faculty member Brummet and Ph.d. candidates, Pyle and Flamholtz. They worked on a series of research projects designed to develop concepts and methods of accounting for human resources. One of the outcomes of this research is Brummet et al.(1968a)'s paper representing one of the earliest studies dealing with human resource measurement, and the one in which the term "Human Resource Accounting" was used for the first time in the academic arena.

The authors derived multiple measures of human resources and concluded that human resource accounting is future oriented and primarily used as a managerial tool. In their concepts, for example, acquisition cost refers to conventional accounting concept of historical cost and provides a basis for determining firm's cost to acquire human resources. Replacement cost is a measure of the cost to replace the firm's existing human resources and indicates what it would cost the firm to recruit, hire, train and develop people to their present level of technical proficiency and familiarity with the organization and its operation. Economic value is the present value of the portion of the firm's future earnings attributable to human resources. (Brummet et al., 1968a)

In another article published the same year, "Accounting for human resources"(Brummet et al., 1968b), the authors assess the impact that HRA has on management. Flamholtz's Ph. d. dissertation is an exploratory study which formulated a theory of an individual's value to an organization and how it could be measured by HRA. One year later, Brummet et al.(1969) emphasized HRA as a tool for increasing managerial effectiveness in the acquisition, development, allocation, management and utilization of its human resources. These authors described one of the first attempts to develop a system of HRA for a firm's investments by reporting on an actual application of HRA on R.G. Barry Corporation, a relatively small public entrepreneurial company which produced a variety of soft goods such as slippers, robes and pillows.

3. Stage 3(1971－1977) : Rapid Growth of Interest in HRA

The third stage of development of HRA was characterized as a period of rapid growth of interest in human resource accounting. During this stage, the American Accounting Association established committees on HRA in 1971－1972 and 1972－1973 ; and these committees published reports on the development of HRA(American Accounting Association Committee of Accounting for Human Resources, 1973). The committee considers the use of HRA for management decision making as unduly restrictive and considers that the development of HRA should fully take into account its potential usefulness to external parties. It is ironical that external financial reporting use of HRA has not been active and managerial decision use of HRA has become relatively popular after 1980 unlike AAA's expectation. It also suggests that future research is required to 1) develop valid and reliable methods of measuring human resource cost and value, 2) develop operational systems of accounting for human resource cost and value and 3) study the cognitive and behavioral impact of HRA. The committee's involvement plays a role of catalyst for rapid growth of research during this period.

Research during this period is expanded focusing on three areas which are HRA measurement models, external reporting and internal managerial decision. Relatively active research for HRA measurement models have been implemented in this stage ; however, these measurement models have not widely been tried and accepted among practitioners in future years. In the external reporting area, only the importance of HRA information has been focused in the experimental and behavioral research and this does not extend to research related to specific HRA guidelines for external reporting in future years. HRA research related to internal managerial decision making in this stage has been implemented in a variety of human resource decision making context such as personnel selection, layoff, job assignment and extended to more diverse decision making contexts in the future stage.

(1) HRA Measurement Models

Research during the third stage involved the continued development of concepts and models for measuring and accounting for human resource cost and value. Flamholtz (1971, 1972a, 1972b) utilized both non－monetary and monetary measures in drawing upon behavioral and economic variables. The Flamholtz model, which is called as the Stochastic Rewards Valuation Model (SRVM), proposes that an individual's value to an organization is based on future services that are expected to be rendered to the organization in future roles or service states. The SRVM views

the movement of people among organizational roles over times as a Markovian stochastic or probabilistic process with service rewards. The SRVM is a multi－step process that begins with defining the various service states or organizational positions that an individual may occupy in the organization, and then determines the value of each state to the organization, the service state values which can be calculated either by using a number of methods such as the price－quantity method or the income method. Next the person's expected tenure or service life in the organization is calculated and the person's mobility probability or the probability that a person will occupy each possible state at specified future times is derived from archival data. The model follows with discounting the expected future cash flows that the person generates in order to determine his or her present value.

Lev and Schwartz(1971) consider the human capital concept calculated by using census and average firm earnings data and discount the employee's future earnings to the present value. Interestingly, Morse(1973) divided HRA into two components : human asset accounting and human capital accounting.[2] He combined the Flamholtz model and the Lev and Schwartz model into one which specified the present value of the organization's human assets to equal the present value of human resources less the present value of payments to employees. Gambling(1974,1976) extended the Flamholtz model by applying a dynamics simulation in order to capture the relevant variable in accounting for human resources.

Sadan and Auerbach(1974) synthesized the Flamholtz and Lev and Schwartz model in their stochastic model for valuation of human resources. They relied on the economic concept of value and applied a Markovian process to account for the multiple probabilities of potential changes in service states by employees. Using an actuarial approach, their model generated a matrix of transitional probabilities on a group basis. Drawing on the Flamholtz, the Lev and Schwartz, and the Morse model, Jaggi and Lau(1974) also suggested a model for valuing human resources. This model is based on valuation of groups, which refer to a homogeneous group of employees working in a firm, rather than individuals. The probabilities of career movement and of exit from the firm can be estimated on the basis of historical data and the Markovian chain technique.

Friedman and Lev(1974) suggested a surrogate measure of the firm's investment in human resources after indicating problems of market price, replacement cost and opportunity cost. The investment in human resources is operationally measured by the difference between two kinds of

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2) Human asset accounting is concerned with determining the value of the human resources employed in an organization to the organization. Human capital accounting is concerned with determining the value of the human resources employed in an organization to the employees of that organization(Morse, 1973).

human resource values for the firm : (a) "internal human resource value" measured as the discounted value of actual wages to be paid to current employees over their expected service life, and (b) "external human resource value" measured as the discounted value of the hypothetical (opportunity) wage bills based on the average wages prevailing in the relevant labor markets.

Ogan(1976) developed a model which focused on measuring an individual employee's "certainty equivalent net benefits"[3]. Grove et al.(1977) attempted to clarify and evaluate the various methodologies for HRA by using measurement theory. Other models that combined behavioral and economic approaches were Likert and Bowers(1973) and Myers and Flowers(1974).

(2) HRA Research Related to Decision Making for External Users

As a matter of fact, putting people on the balance sheet was a dominant and controversial issue in HRA. Some researchers objected to HRA by claiming that it implied and communicated ownership and control of employees by management. Nevertheless, overall interest in HRA for external financial reporting have still increased in this stage. We assess this period as the stage where only the importance of HRA information has been focused in the experimental and behavioral research and this does not extend to research related to specific HRA guidelines for external reporting.

Elias(1972) determined by his experiment that external users' decisions on investments in common stock were made differently with the inclusion of HRA information. Research participants were certified financial analysts, certified public accountants, intermediate, advanced, and senior accounting and finance students. They received financial statements of two companies which were randomly assigned to either historical costs only, human assets only, or historical costs and human assets. One company reflected higher net income and "looked better" in the historical cost statements ; whereas the other company reflected higher net income and "looked better" by regular investment standards if the users understood and accepted human assets. Participants were asked to choose in which company they would invest 10 percent of their annual income. The results indicated that the choice of the company was associated with the experimental treatment, and providing HRA information influenced stock investment decisions. Similarly, Hendricks(1976) found that stock investment decisions were significantly affected by the addition of HRA information to conventional accounting information by using 99 graduate

3) Each employee's certainty equivalent net benefits stream has two elements : (1) his or her net benefits which are a function of the employee's expected benefits and total costs ; (2) a certainty factor which is comprised of the employee's probability of continued employment and probability of survival(Ogan, 1976).

students as subjects. The results indicated that the degree of openness in the students' belief system did not seem to contribute to explain decision differences when HRA information was added to conventional accounting system. Individuals who were more affected by the HRA information were inclined to believe that valuing human assets would be meaningful improvement in historical cost financial statements.

Schwan(1976) extended the Elias and Hendricks works by investigating the effects of HRA cost information on financial decisions in comparison with decisions based on conventional financial information. Forty－four managers and analysts employed in credit, investment, and trust departments of nine large banks were sent questionnaires and asked to make decisions about the capabilities of a firm based on two sets of typical annual reports containing either (a) HR costs immediately expended as incurred or (b) HR costs expended over a five－year period and reported as "investments in HR" with a brief description in a footnote. He found that the firm with HRA information was considered better prepared, and that inclusion of HRA information resulted in statistically significant predictions of a firm's net income.

Acland(1976) presented quantified behavioral indicators to financial analysts who were asked to make an investment preference decision, to indicate the strength of their preference, and to list the factors most influential in their decision. A "Human Resource Indicator Report" was created composed of five sociopsychological variables measuring : organizational environment, employee morale, management achievement motivation, employee consistency with the system, and managerial job satisfaction. This format represented a different, more behavioral－oriented approach than earlier studies which presented HRA information. The results showed that financial analysts prefer a firm with improving financial operating performance but with declining behavior indicators ; however, such preference will decrease when the human resource indicators are provided. The written comments indicated that some analysts felt that high moral and other behavioral characteristics were not necessarily required for profitable operations.

(3) HRA Research Related to Internal Managerial Decision Making

The HRA research associated with internal managerial decision received considerable attention as opposed to that associated with external financial reporting which was not much developed due to difficulties of measurement. HRA research related to internal managerial decision making has been implemented in a variety of human resource decision making contexts such as personnel selection, layoff, job assignment and extended to richer decision making context in future stage.

Zaunbrecher(1974) examined the effect of HRA on personnel selection decision. The result

indicated that HRA information was used even when conflicting traditional information was presented along with it. Tomassini(1974) studied differences in decision preferences involving the length of a layoff. In the control group subjects received a controller's estimate of payroll cost savings for various layoffs alternatives and a personnel manager's narrative(qualitative) statements about the hidden cost of a layoff. In addition to the control group information, the experimental group received quantified estimates of the expected retraining and replacement costs. The results suggested that HRA data can affect managerial decisions, both at the choice and process levels.

In a later study using the same research procedure as in his prior study, Tomassini(1977) investigated if managers show different decision preferences in a personnel layoff situation with (a) access to only conventional accounting data versus, (b) access to both conventional and monetary HRA information. The results showed that the additional monetary HRA information made a significant difference in decisions made by the students. The result should be viewed in light of several limitations. For example, students were used as surrogate managers, limiting the range of generalizability of the results.

In the study whether human resource value numbers influence the decisions made by certified public accountants, Flamholtz(1976) found statistically significant differences in job assignment decisions made using (1) traditional personnel numbers, and either (2) nonmonetary HR value numbers or (3) monetary HR value numbers, but not differences using nonmonetary versus monetary measures. The author suggested the results may have been due to the nature of the research design, and called for future research.

Mirvis and Macy(1976) presented interdisciplinary approach to measure costs and social and financial benefits of human resource development program. On the other hand, Dermer and Siegel(1974) found no significant or systematic relationship among any of the four behavioral variables measured by motivation, effort, group cohesion and satisfaction and performance measured by sales, earnings, return on investment and stock price by using a laboratory study with students participating in a business simulation game. They suggested that the measurement of behavioral variables cannot at present play a role in accounting for human resources, but if behavioral scientists can establish valid relationships and reliable bases upon which accountants can base measurements, such measure can be used to supplement traditional accounting information.

4. Stage 4(1978－1980) : Declining Interest in HRA

The fourth stage in the evolution of HRA from 1977 and 1980 was characterized by a

decreased interest in HRA. One reason for declining interest in HRA was that most of the relatively easy preliminary research had been accomplished. The remaining research required to develop HRA was complex, and could only be accomplished by a relatively few scholars, and required the cooperation of organizations willing to serve research sites for applied research studies. The required research involved the application of HRA in organizations and the cost of subsidizing such research was significant, while benefit either were uncertain or would accrue to the field as a whole and not necessarily to the sponsoring firm(Flamholtz et al., 2002). Although it waned, interest in HRA did not completely die, and some worthwhile research took place. Particularly, attempt to link HRA with other areas such as management science, statistics and management system theory was peculiar.

Ansari and Flamholtz(1978) suggested that the development of management science has facilitated the development of HRA as a managerial tool and the rationality and multidisciplinary problem solving approach which characterize management science were applied to HRA. Oliver and Flamholtz(1978) found that the provision of replacement cost data in a layoff decision experiment reduces the uncertainty that decision made was optimal for a broad group of subjects. In addition, persons intolerant of ambiguity perceive information content more often than those tolerant of ambiguity and persons utilizing a heuristic style of reasoning perceived information content in more instances than did persons who utilized an analytic reasoning style within the group who were tolerant of ambiguity.

As an extension of measurement model research, Lau and Lau(1978) presented a procedure for matching depreciation amounts with the expected HR contributions as determined by Jaggi and Lau's(1974) Markovian model and formulas for making probabilistic estimates of HR assets under the Markovian model. Further, as an extension of HRA research related to internal managerial decision, Lombardi and Flamholtz(1979) found a difference in decisions between traditional information and HRA information, but no difference between monetary and non－monetary HRA information.

Contrary to Flamholtz findings, Harrell and Klick(1980) investigated whether decision makers place different emphasis on or make different decisions using monetary versus nonmonetary HRA information in making decisions. Using a variance analytical design, 166 Air Force colonels were asked to make decisions about a promotion in 36 cases containing either nonmonetary replacement cost information, monetary replacement cost information, or both. Participants placed significantly greater weight on the monetary information, and the decisions made were significantly more consistent when the monetary information was used. Flamholtz(1979), on the

other hand, described the HRA paradigm in terms of "psycho－technical systems" approach[4] to organizational measurement and focused on the importance of process functions in the process of measurement. He suggested that there is a need to develop a broader concept of measurement theory to reflect the existence of measurement's process functions.

5. Stage 5(1981－present) : Renewed International Interest in HRA Theory and Practice and Linkage with Intellectual Capital

The first sparks of renewal occurred during 1980, and since that time there have been an increasing number of significant new research studies dealing with the development and application of HRA as well as an increasing number of attempts to apply HRA based on the theory. There has been considerable interaction between theory and application(Flamholtz et al. 2002). A major catalyst to the resurgence of interest in HRA was international interest initiated by the "Stockholm" school of HRA. Scandinavian countries, especially Sweden, might have the organizational social orders suits well HRA.

We also assess the period after 2002, when Flamholtz et al.'s paper published, as the stage where HRA research has mainly been implemented in association with intellectual capital research.

HRA measurement research in recent times has not been very active. This research pattern takes place because many HRA measurement models suggested in stage 3 have not widely been tried and adopted among practitioners. HRA research related to external financial reporting has not developed with fervor because of lack of recognized valuation tools, practitioners' hesitance to adopt HRA, concern of appropriateness of measuring human assets by a monetary value. The importance of HRA information has been focused in the experimental and behavioral research in stage 3, but it does not extend to active research in stage 5. Several papers were published as to the reasons why HRA research related to external financial reporting has not developed recently. In contrast, HRA research related to internal decision making has been implemented in richer contexts such as layoffs, planning, budgeting and organizational development based on corporate culture recently following stage 3.

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4) The PTS approach is based on the notion that there are two distinct types of functions of measurement in organizations : (1) process functions and (2) numerical or informational functions. The former are functions performed by the process or act of measurement itself ; the latter are functions performed by using the numbers or measurements derived from the measurement process(Flamholtz, 1979).

(1) HRA Measurement Models

HRA measurement research in recent times has not been conducted actively. The sluggishness occurs primarily because many HRA measurement models suggested in stage 3 have not widely been tried and adopted among practitioners. Using the Stochastic Rewards Valuation Model, originally developed by Flamholtz(1971), Flamhlotz, Bullen and Hua(2003) provided a practical method for calculating ROI on management development and reported the incremental cash flows that an organization would receive due to investment in management development. Flamholtz (1987) also presented an application, by using the Stochastic Rewards Valuation Model, by which the value of human assets may be determined separate and distinct from goodwill in the acquisition case of a securities brokerage firm.

As previously noted, Lev and Schwartz(1971) measured human capital by calculating the present value of a person's future earnings. Dobija(1998) proposes an alternate model for capitalization, where rate of capitalization is determined through the natural and the social conditions of the environment. Utilizing a compound interest approach, this method takes into account the three factors, which are the capitalized cost of living, the capitalized value of the cost of professional education and the value gained through experience, for valuing the human capital embodied in a person. Turner(1996) refers to the framework issued by the International Accounting Standards Committee and recommends the use of the present value of the value added by enterprise and measures assets by the four methods of historical cost, current cost, realizable value and present value.

Cascio(1998) proposed a method for measuring human capital based on indicators of human capital of innovation, employee attitudes and the inventory of knowledgeable employees. Innovation commands a premium and needs to be measured by comparing gross profit margins form new products to those from old products in this model. Abeysekera(2003) suggested a conceptual approach that intellectual assets and liabilities can be recognized in the financial statements using market to book value as a reference point. If intellectual assets are more than intellectual liabilities, that indicates a net intellectual assets position and if intellectual assets are less, then that indicates a net liability position. Flamholtz(2005) showed the empirical support that culture, human capital of the third kind, is a significant component of overall financial success. While results are not completely definitive, we assess that he opens the way to a new approach to HR value measurement. Recently, Theeke and Mitchell(2008) claims that a human resource liability approach, which would fully account for the future human resource expense necessary to utilize current labor stock, would enhance financial analyst's opportunities to understand and value firms. Recognizing human resource expenses will tend to depress asset turnover and cash flow coverage.

(2) HRA Research Related to External Financial Reporting

Financial reporting has treated intangible assets as expenses because fair values of intangible assets involves much subjectivity and estimates and it hurts the reliability of accounting information. HRA research related to external financial reporting has not developed primarily for this reason. Several papers were published why HRA research related to external financial reporting has not developed.

Jensen(2001) found that the most severe barriers to measuring intangibles included lack of concrete tools, time and resources and that one of the significant barriers for reporting of human resources included the lack of recognized valuation approaches. Another barrier is the perception of managers of organizations that the outcome of reporting is not worth the effort of reporting. Johanson and Mabon(1998) suggested that managers of organizations hesitate to adopt new routines such as HRA because they are skeptical that the costs of conducting such exercises outweigh the benefits. Hedlin and Adolphson(2000) argued that intangible assets like human assets have been excluded from the financial statements because of their uncertain benefits and lack of transferable values. Uncertain benefits refer to the possibility that benefits from investment in intangible assets are uncertain both in terms of economic feasibility and the duration of benefits. Lack of transferability refers to the possibility that intangible assets are firm specific and cannot be transferred from one organizational entity to another in case of liquidation.

Flamholtz, Kannan－Narasimhan and Bullen(2004) also argued that the main barriers identified in the last decade include lack of a meaningful system of measurement, appropriateness of measuring human assets by a monetary value and the fear in organizations about the disarranging of the existing social order due to HRA implementation. To our judgement, for reasons indicated above, researchers have not succeeded in convincing the accounting regulator and practitioners of the logic behind the monetary value of human resources in the financial statements.

(3) HRA Research Related to Internal Managerial Decision Making

As opposed to external financial reporting, managerial reporting does not require adherence to a strict set of Generally Accepted Accounting Principles. HRA information can provide the useful assistance to a variety of human resource decision making like acquisition, assignment, development and layoff. HRA research related to internal decision making has been implemented in richer contexts such as layoffs, planning, budgeting and organizational development based on corporate culture recently following stage 3.

In the early 1980s, the U.S. Office of Naval Research(ONR) sponsored a research project

dealing with the feasibility of the application of HRA to naval human resource management issues. The resulting study(Flamholtz and Geis, 1984 ; Flamholtz, 1999) involved the development and application of a model for measuring the personnel replacement costs of industrial engineers in the U.S. Navy. This project was one of the first projects of significant scope by a major institution in either the public or the private sector.

Hermanson, Ivancevich and Hermanson(1992) commented on the pitfalls of layoff decisions made based solely on traditional financial accounting measures which treat employees as expenses. Because financial accounting emphasizes the good side of layoffs and ignores the bad side of human resource depletion, it is easy to see how companies can be led astray when the decision makers focus primarily on the traditional financial statement effects on their decisions. The authors suggested that firms would use management accounting reports showing the total potential impact of a massive downsizing, including reduced quality of goods and services, lower morale and loyalty of the remaining workers, higher turnover rates in the future due to employee burnout and additional costs of training new workers in the future. In a similar vein, Wilson(2001) noted that downsizing may result in more problems than it solves because it puts the organization's survivors on overload and often doing work for which they were not trained, stressed and burned out sometimes even to the point of leaving and often resulting in decline of morale which may adversely affect the bottom line.

Davidove and Schroeder(1992) suggested that although many business leaders still view training as an overhead expense, with thorough ROI evaluations, training departments can convince business to view them as partners in creating the assets crucial to organizational success.

Notedly, four studies focused on the importance of the benefits of HRA measurements and the process of measuring human resources. Firstly, Johanson and Mabon(1998) indicated that expressing human resource interventions in cost－benefit analysis terms is more effective than using soft accounting information like data on job satisfaction. Secondly, Toulson and Dewe (2004) conducted a survey study utilizing component analysis and found two reasons why measuring human resources is important. The first is that measurement reflects the strategic and competitive importance of human resources and the second suggests that human resources must be expressed in financial terms to earn credibility. Thirdly, Mckenzie and Melling(2001) suggested that, if properly implemented, the human capital planning and budgeting process will become a key diver of strategy in that strategic human capital planning and budgeting which ensures that the best resources are mobilized for each internal process. And, finally, Flamholtz (2005) stated that although the field of HRA has made significant progress in defining and measuring the cost and value of human capital, it can be expanded to conceptualization and

measurement of the economic value of "human capital of third kind", which is the incremental value of the synergy of the human organization as a whole distinct from the value of its individual members and operationally defined as the incremental positive or negative value of the organization's culture as an economic determinant. The results of Flamholtz's empirical study of a medium-sized industrial company engaged in organizational development program provide support for the notion that corporate culture or human capital of the third kind is a significant component of overall financial success.

(4) International Interest in HRA

This stage is characterized by the increasing interest for HRA among researchers internationally. The period after 2002 is the stage where HRA research has been implemented in relation to intellectual capital research. A major catalyst to the international interest in human resource accounting was research conducted at Stockholm University by members of the faculty of the Personnel Economics Institute, including Grojer, Johanson, and Olsson[5]. This "Stockholm" school of human resource accounting has led to a critical mass of scholars who are concerned about the development of the field(Flamhlotz, 2002). Grojer(1997) gives an interesting perspective on why HRA has taken roots in Scandinavia especially Sweden, as compared to other parts of Europe, by suggesting that human resource accounting measures can be successfully introduced only when it suits the social orders in organizations and Scandinavian management and the Swedish organizational social order suits HRA. A possible conclusion from this perspective is that human resource measures may be introduced smoothly only in organizations when these measures would conform to the organizational social order. Hansson(1997) presented evidence that supports the hypothesis that HRA information is critical for increased accuracy in investment-related decisions, particularly in knowledge-intensive organizations. Johanson(1998), in seven Swedish case studies, compared the inhibiting factors in the implementation of HRA. The lesson was that

5) Historically, Swedish legislation makes human resource decisions expensive and long-term. Since their introduction in the 1970s, the Swedish Joint-Codetermination Legislation & Job Security Legislation have radically reduced the opportunities for management or the HR-function to make decisions relating to the labour force. Since then, such decisions can only be made on the basis of extended negotiations with the unions and often with considerable legal restrictions as to what course of action may be taken. This has resulted in an increasing interest in the functioning of the labour force and in developing methods to avoid poor HR decision-making, which can be rectified after an extended period and at considerable expense. As a research institute to support developing HR methods, Personnel Economics Institute has conducted a number of highly visible empirical studies concerning working hours, job attitude, competence development, downsizing, company valuation (Johanson and Mabon, 1998).

training, information, reward, target setting and cultural systems have to be worked actively to overcome inhibiting factors when trying to implement HRA. Efforts should focus on : (1) knowledge of human resource costs, values and outcomes as well as how to calculate these ; (2) top management demand as well as other elements in the reward system ; (3) HRA target setting ; and (4) openness for change.

Two Swedish studies experimented with reporting HRA measures in financial statements. The Statement of Human Resources, published by Telia, a Swedish National Telecommuting Company(Telia, 1996) and the Statement of Human Resources reported by the Swedish Civil Aviation(Swedish Civil Aviation Administration, 1998) provided some insights on the reporting formats. In case of Telia, in addition to a human resources report, the financial statements included a profit and loss account and a balance sheet that included investments in human resources. The statement reported by the Swedish Civil Aviation Administration provided the human resource income statement and a human resource balance sheet showing the change in the percent of value of human capital, number of employees and the calculated value of human capital, in addition to other key personnel indicators.

Roy(1999) reported on a case study on Skandia Group which is one of the first companies known for its work on intellectual capital. The case study includes the process of development of the Skandia Navigator and the Dolphin Navigator under the guidance of Edvinsson, vice president and corporate director of Intellectual Capital and Skandia Future Centres. He also discussed the case study from the standpoint of pitfalls and the risks of implementation of such a system and the ways organizations can learn through feedback. Olsson(1999) studied measurement of personnel through human resource accounting reports as a procedure for management of learning in the hospital sector of Northwest of Stockholm and reported that learning in smaller groups is an effective means to make organizational communication regarding intellectual capital within the organization, helping organizations learn better on how to report human resources value.

Further, Olsson(2001) also provided information on annual reporting practices related to human resources in corporate annual reports of major Swedish companies. This study showed there is a very low share of information, on average below 4%, disclosed about human resources in 18 big Swedish companies. Sandervang(2000) developed the Value Driving Talks(VDT) model and tested in an empirical study in a Norwegian business firm in the electrical sector. The VDT, founded on the basic premise of participant's involvement and motivation in the process of competence development, begins with analyzing the company's expected economic results and defines the competencies required among the workforce to achieve these results. He calculated financial returns on organization's investments in competence development. The firm focused on

employee training or competence development as its strategic focus and aligns investment in competency development to the overall business strategy to help organizations with their strategic human resource management goals.

Interestingly enough, several comparative studies are available in the context of the international comparison for HRA disclosure and HRA in other countries. Subbarao and Zehgal(1997) gave a macro－level perspective to HRA disclosure in financial statements by analyzing the differences across countries in the disclosure of human resource information. They analyzed the human resource information disclosure in annual reports across six countries, finding differences in disclosures of HR information across countries and providing accounting and financial professional insights on the HR information areas they need to focus on in their countries. Gul(1984) examined the impact of HRA turnover costs on managerial decision making in regard to turnover of audit seniors in three Australian accounting firms. The overall results of the study indicate that decision makers felt significantly more confident after being provided with HRA turnover costs and also indicated the experiment included adequate and relevant information. Morrow(1996, 1997) investigated the concept of football players in the United Kingdom as human assets and the importance of measurement as the critical factor in asset recognition. Tang(2005) developed a heuristic frame addressing the link between human resource replacement cost and decision making. The system measures direct and indirect costs of human resources, which is then applied to a company within the metro industry in china.

Recently, HRA is examined in the context of as one of intellectual capital disclosures. Bontis(2003) conducted a content analysis on the annual reports of 10,000 Canadian corporation. A list of intellectual capital related terms was searched within the annual reports yielding a significantly small number(68) of instances in which intellectual capital took place. Olsson(2004) analyzed annual reports of 15 firms of the Swedish retail industry from 1998 to 2002. For the year 2002, the information on human capital in annual reports was 8.4% of the total text mass, with 14.9% pertaining to external capital, 21.2% to process capital and 7.4% about innovation capital. Bozzolan et al.(2006) analyzed differences in intellectual capital disclosure practices by using matched sample of both high－technology and traditional firms in Italy and the UK. Size and industrial sector are found to be predictors of levels of intellectual capital disclosure, but the hypothesis relating nationality of origin to intellectual capital disclosure is not supported.

Based on the preceding descriptions and arguments on the each stage of HRA, we construct a table where we readily identify major researchers and overall contribution, and focal research topics. Primarily, the table 1 is designed to provide general characteristics of each stage for the purpose of comparing the major events among five stages.

〈Table 1〉 A Summary Table of Five Stages on HRA

Stage	Stage Ⅰ	Stage Ⅱ	Stage Ⅲ	Stage Ⅳ	Stage Ⅴ
Year	1960－1966	1967－1970	1971－1977	1978－1980	1981－present
Charac－teristics of Stage	HRA Concept Derived	Academic Research Initiated	Widespread Interest in HRA	Decreased Interest in HRA	Resurgence of International Interest
Key Resear－chers	Hermanson, Likert, Odiorne, Paton	Brummet, Flamholtz, Pyle	Acland, Auerbach, Elias, Flamholtz, Friedman, Gambling, Lev, Macy, Mirvis, Ogan, Sadan, Schwan, Schwartz, Tomassini, Zaunbrecher	Ansari, Flamholtz Harrell, Jaggi, Klick, Lau, Lombardi	Abeysekera, Adolphson, Bontis, Bozzolan, Bullen, Bullen, Cascio, Dewe, Dobija, Grojer, Hansson, Hua, Ivancevich, Jensen, Johanson, Lev, Mabon, Mckenzie, Melling, Mitchell, Morrow, Olsson, Roy, Theeke, Toulson, Turner, Wilson
Overall Contri－bution	• accounting theorists, social psychologist support for treating people as assets	• develop－ment and assessing the validity of model • foundation of HRA research	• development of three areas of HRA approach • active research for HRA measurement • widespread internal use of human resource decision	• linking HRA with management science, statistics, and management systems theory	• interaction of theory and application • association with intellectual capital research • shift of HRA interest into European countries
Major Research Topics	• modelling to measure human resource value	• multiple measures of human resources • HRA impact on general management	• SVRM • Human Capital Concept • experimental and behavioral research • managerial decision by HRA monetary information	• decision making style and HRA information availability • managerial decision making with traditional vs HRA information, monetary vs non－monetary, etc.	• practical method of HRA measurement proposed • new HR value measurement suggested (e.g., human liability) • international comparative studies
Notes	• surrogate measures for values for human resources	• HRA formally used • Univ. of Michigan's leading role	• AAA's report on HRA • no guidelines for external use	• hesitant cooperation from companies • most of easy preliminary studies accomplished	• Stockholm school's decisive role as critical mass researchers • self－reflection on the HRA barriers

Ⅲ. HRA Research in Korea and Suggestions for Future Directions for Research

Overall, we assess that there has been little HRA research activities in Korea[6]. That may be related to the fact that HRA research has not been active in the U.S. and other countries because accounting rules and regulations in Korea keep up with those in the U.S.. From the perspective of HRA information supply, most of Korean firms have the perception that human resource cost is just one of expenses and don't have any need to produce HRA reports. From the perspective of HRA information demand, there is no anecdotal evidence that institutional investors or financial analysts have used HRA in their valuation of firms and individual investors even may have not much knowledge of HRA. Independent HRA research is limited to the introduction of HRA surrounding this background. The research focus has shifted to intellectual capital research recently, where HRA is one of measures to show the status of intellectual capital of firms.

First of all, several research papers tried to briefly describe a general research trends and suggested future implications for the further studies in Korea. Kim and Chung(2002) introduced some companies' cases for introducing HRA (Barry, Telia, and Skandia Navigator) to show the way HRA systems are used in a real world. Han and Kim(2004), Lee(2002) provided the research stream of valuation model of human resources and suggested future implications in Korea. Chang(2005) summarized HRA research development and practical cases.

Secondly, some researchers tried to examine the measurement issues and disclosures of intellectual capital[7]. In their studies, human resource capital measure is used as one of intellectual capital measures of firms. Hong and Yoo(2004) suggested that future research that is associated with the measurability and disclosure of intellectual assets would need to develop the specific firm case study which could contribute to the development of industry intellectual capital measures. Hong and Yoo(2004) found in their questionnaire survey that different subjects preferred various disclosure styles for each human resource asset items. Accounting information

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6) In this study, we focus only on the measurement and disclosure of HRA and do not include papers related to impact of HRA on valuation or stock price response corresponding to literature review in other countries.

7) Accounting disclosure rules associated with human resources have required very limited information except executive compensation disclosures in the U.S. and in Korea alike. Song and Song(2008) make a comparison between disclosure rules and practices associated with executive compensation in Korea and in the United States.

providers preferred footnotes, supplementary schedules, and annual reports while accounting information users preferred footnotes, supplementary schedules and separate intellectual capital reports and accounting specialists preferred footnotes and supplementary schedules. However, they did not analyze why different groups show different preference for different disclosure styles. They also found that the accounting specialist groups put less importance on human resource assets than other groups.

HRA measurement research in recent times has not been conducted actively. The sluggishness occurs primarily because many HRA measurement models suggested in stage 3 have not widely been tried and adopted among practitioners. This may be due to the fact that it is hard to accept evaluation model based on academic efforts and evaluating human resources involves ethical dilemma. Practitioner and academic scholars in Korea would need to focus on developing a variety of indirect measures associated with human resources such as employee satisfaction index, employee competence measure, turnover so that outside stakeholders can assess the value of human resources of firms indirectly.

From the HRA information demand perspective, the Korean Labor Institution(1999) and Korea Accounting Standard Board(2000) issued research reports to examine the possibility of external reporting for HRA information. There are four possible methods of presenting investments in human assets in corporate annual reports. This information may be presented in the president's letter, in a statement of intangibles, in unaudited pro forma supplementary financial statements, or integrated into conventional financial statements(Flamholtz, 1999, p.35). Korean Labor Institute (1999) suggests that firms consider disclosing HRA in footnotes of financial statements. Korea Accounting Standard Board(2000) also suggests that firms consider disclosing intellectual capital information including HRA in footnotes of financial statements or separate intellectual capital report. KASB, however, argues that two disclosure forms are not necessarily exclusive. However, follow－up research and practical implementation has not followed. Interdisciplinary efforts including accounting, human resources management, finance, and international business are necessary to derive disclosure rules of HRA. This could be operated by a separate project or by one of sub－projects of intellectual capital disclosure rules. Disclosure could include indirect intellectual capital measure associated with human resources like employee satisfaction index, employee compentence measure, turnover etc. in order to avoid the controversy that is related to the evaluation of human resources. It could be led by "The Knowledge Management Society of Korea" or "Korea Accounting Standard Board". Interdisciplinary research team would need to propose HRA measures, valuation and disclosure rules and consult with government authorities

and industries.

It would be highly appropriate for researchers in Korea to focus on the application cases of HRA for firms from the HRA information supply perspective. There are many research papers that examines application of HRA information in managerial decision making worldwide. Developing practical cases and deriving meaningful implication is one of the important functions of academia. There are not many papers that introduced HRA application cases in internal decision making within firms in Korea. For instance, Telia has published an annual statement of Human Resources since 1990. This statement includes a income statement visualizing different human resource costs and a balance sheet including investments in human resources (Telia AB,1996). Korean firms may develop similar reports with researchers and use for their decision making.

It is not necessarily limited to current application cases. Accounting history or quasi－natural experiment that is associated with the use of HRA information could give more insight to constituents surrounding accounting information.

Voluntary disclosure efforts of firms are also necessary to increase the understanding level of HRA of investors. Lev and Schwartz(2001) conclude that for all the intangibles, the least systematic information exists for human resources. They report that it is not even clear what expenditures on human resources create assets, and believe that more corporate disclosure will be needed to advance research on human resource intangibles. The starting point may be the sustainability reports that have been published by some renowned corporations. For instance, SK telecom has disclosed human resource development status such as employees, diversity, support for professional management, health and safety since 2008(SK Telecom, 2009). However, these disclosures are limited to simple statistics and boiler－plate languages and do not include detail contents associated with human resource accounting. Researchers can have an interest in and expand their research foci based on "Sustainability Report" even if this has a limited nature.

We would propose one suggestion that could give insights to accounting researchers. Market－to－book ratio is used in many accounting research papers to control the growth factor. Higher market－to－book ratio of industries, which are human resources oriented like consulting and advertising, might be derived more from the asset value of human resources than from growth potential. If that is the case, researchers should not use market－to－book ratio of human resources oriented industries to control growth factor.

In addition, as Flamholtz(2004) recommended, academia and practitioners need to focus on educating firms about the imperative need for HRA. One way of achieving this is linking HRA

to business strategies and balanced scorecards(Johanson and Mabon, 1998) so that consultants and company buy－in the importance of HRA. Most companies are in need of new innovative strategies to prepare for the uncertain future and rely on consultants, and naturally consultants have the opportunity to introduce HRA that is linked to business strategy and balanced scorecards. From the research point of view, further research that examines the relationship between balanced scorecard and human resource accounting is judged to be promising.

Lastly, the recent trend shows that HRA is examined as one of measures in intellectual capital(Jensen, 2001). Further research that examines the relationship between intellectual capital and human resource accounting is also judged to be very promising.

As a limitation, this paper is based only on prior accounting academic and practitioner journals associated with human resource accounting and do not include academic journals of other business areas and economics that examines human resource accounting.

Ⅳ. Conclusion

There is an old history associated with the HRA concept that human resource is a valuable asset for the company, not just an expense adopted currently by Generally Accepted Accounting Principle throughout the world. Numerous companies also place an emphasis on the asset value of human resource in their CEO greetings of annual reports. Accounting researchers, however, fail to persuade accounting regulatory institutions and practitioners that human resource value is recorded as an asset in the financial statements. HRA has been questioned on several grounds, including (1) difficulties of showing people as assets, (2) the uncertainty of human resource measures and possibility of manipulation, (3) difficulty of measurement(Sackmann et al., 1989). However, HRA has been used widely in the management decision making context, particularly in a variety of human resource decision making such as selection, job assignment, promotion, training, organizational development and layoff.

Research on HRA－related internal managerial decision making have been relatively active and will be implemented in future years. International interest on HRA these days have grown up in many countries starting from "Stockholm" school and HRA research tend to be implemented in linkage with intellectual capital research recently. Under this circumstance, researchers in Korea could focus their research on the application cases of HRA for firms. Accounting history or quasi －natural experiment that is associated with the use of HRA information also could give more

insight to constituents surrounding accounting information. Linking HRA to business strategies and balanced scorecards could be an innovative way to spread out HRA to firms and practitioners. Accounting researchers need to consider HRA implication in their research for market-to-book ratio and intellectual capital.

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인적자원회계의 역사적 발전과 향후 연구방향에 대한 제언*

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<요 약>

본 연구에서는 인적자원회계(Human Resource Accounting : HRA) 역사를 개괄하고 향후 한국에서의 연구를 위한 시사점을 제시하였다. HRA의 역사를 기술하기 위하여 Flamholtz et al.(2002)의 5단계 시대분류를 이용하였다. 그들의 연구는 연대기적으로만 관련 문헌을 정리하였지만, 본 연구에서는 회계분야 및 측정도구 관련된 분야로 연구문헌을 재분류하였으며, 2002년 이후의 문헌을 추가하였다. 또한 시대별로 저자들의 공헌에 대해 독립적인 평가를 추가하였다.

1단계(1960－1966)는 회계이론가들이 인적자원회계의 개념을 정립하던 시기이다. 2단계(1967－1970)는 다양한 인적자원 가치측정 모델의 타당성을 검증하고 발전시킨 시대였다. Likert, Brummet, Pyle, Flamholtz 등에 의해 주도되었다. HRA라는 용어가 Brummet et al.의 논문에서 처음 사용되었다. 3단계(1971－1977)는 HRA에 대한 관심이 급증하는 시대였다.

American Accounting Association은 위원회를 설치하여 보고서를 발간하였다. 측정모델, 외부 재무보고, 기업 내부 의사결정 측면으로 구분되어 발전하기 시작하였다. 4단계(1978－1980)는 연구에 대한 관심이 쇠퇴하던 시기이다. 초기의 쉬운 연구가 이미 달성되었고, 응용연구를 위한 기업들의 협조를 구하기가 쉽지 않았다. 5단계(1981－현재)는 HRA에 대한 관심이 국제적으로 다시 확산되고 다양한 측면에서의 연구가 시도되고 있는 시기이다. 가치측정모델측면에서는 부채중심 접근방식이 제기되고 있고, HRA가 지적자산 공시나 균형된 성과측정표의 한 부분으로 연구되는 경향이 있다.

우리나라에서의 HRA에 대한 관심은 높지 않은 편이며, 특히 기업의 응용연구는 거의 전무한 실정이다. 향후 공시사례 개발에 대한 학계와 산업계의 공동노력이 필요하며 인적자원에 대한 기업의 자발적인 공시노력과 더불어 학제적인 접근이 필요하다.

<주제어> 인적자원회계, 지적 자산, 균형된 성과측정표

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