

Human Resources and Business Result: An Empirical Approach Based On RBV Theory

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Abstract—Organization capacity learning is a process referring to the sum total of individual and collective learning through training programs, experience and experimentation, among others. Today, in-business ongoing training is one of the most important strategies for human capital development and it is crucial to sustain and improve workers' knowledge and skills. Many organizations, firms and business are adopting a strategy of continuous learning, encouraging employees to learn new skills continually to be innovative and to try new processes and work in order to achieve a competitive advantage and superior business results. This paper uses the Resource Based View and Capacities (RBV) approach to construct a hypothetical relationships model between training and business results. The test of the model is applied on transversal data. A sample of 266 business of Spanish sector service has been selected. A Structural Equation Model (SEM) is used to estimate the relationship between ongoing training, represented by two latent dimension denominated Human and Social Capital resources and economic business results. The coefficients estimated have shown the efficient of some training aspects explaining the variation in business results.

Keywords—Business results, Human and Social Capital resources, training, RBV Theory, SEM.

I. INTRODUCTION

BUSINESS today are facing a changing scenario caused by the acceleration and increasing complexity of a series of interconnected phenomena such as technological progress, globalization and market internationalization and also by more recent ones, the global financial crisis, the scope of the international markets extending to include "emerging" countries, which entails a great adaptation challenge, and coping with global competition, as well as the need for adequate resources and ever more diversified capabilities. In view of these circumstances, the survival of firms, let alone their success, largely depends on their capacity to adapt and develop sustainable competitive advantages. Therefore, the current response to this challenge is to develop competitive advantages based on quality, flexibility and differentiation. To this aim, companies need a highly qualified and skilled workforce. Today, in-company ongoing training is one of the most important strategies for human capital development and it is crucial to sustain and improve workers' knowledge and skills.

Furthermore, it is seen as one of the most viable actions companies can carry out in order to have properly trained employees. From this perspective, a skilled workforce, an

increasing business need, derives from this combined effect. One of the alternatives available to businesses when it comes to training and re-training workers is to carry out and boost in-company staff training and re-training. Ongoing training allows for the capacity-building and human development of companies' staff so that they can reach their objectives, which turns training into a strategic tool.

Ongoing training is a fundamental aspect in the development of human resources for companies to such an extent that in the context of a changing and competitive environment it becomes a factor of excellence and a key to success. In the last years the human element has grown in importance because knowledge has become a critical ingredient to gain a competitive advantage, particularly in the new economy landscape [12]. Thus, the Human Capital and the knowledge provided through in-company ongoing training are intangible resources, which together with finance capital; make up the wealth of a business.

Therefore, staff training and qualification is one of the most valued resources for companies in the framework of the Resource Based View (RBV) and the Intellectual Capital Theory. The accumulation of knowledge through learning constitutes a driving force in development and growth of firms, because acquisition of knowledge enhances the firms' ability to sustain a competitive position vis-à-vis its competitors [6]-[8].

II. THEORETICAL MODEL LINKING TRAINING AND FIRM PERFORMANCE

A. Human Capital, Training and Firm Performance

There are a considerable number of theoretical frameworks postulating a causal-relationship among human capital of firms, training and firm performance. In the last years has been subject to considerable debates of firm manager, politicians and scholarship discussion. One of the most influential theoretical studies is the Human Capital originated in the macroeconomic theory [5], [31] and with special reference to education and training under the assumption that the accumulation of human capital as crucial for sustaining in long-term growth of the economy. In [5] the human capital has been studied from different field including formal education (schooling), informal education (training course) and medical care. The principal assumptions of Human Capital theory are: i) education and training are important parts of production process and the investment in them increase the individual learning, ii) increased learning does, in fact, result in increased productivity, iii) the human capital increased productivity, increased wages and business earnings. Consequently human

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capital does contribute to the organizational advantages and profits.

In recent years new paradigms or disciplines has been developed with the purpose to construct measurement models of human capital, denominated Human Resources and Human Capital Management (HRM and HCM, respectively). The most recent is the concept of Intellectual Capital (IC). According to [31] the term “human capital” has been defined as a key element in improving firm assets and employee’s status in order to increase the business productivity as well as sustain competitive advantages. To develop and sustain the competitiveness in the organization human capital becomes an important. So the human capital refer is the nexus relating education, training, education and other professional initiatives in order to increase the levels of knowledge, skills, abilities and social values of an employee which will lead to the employee’s satisfaction and good business performance.

Human Intellectual Capital is defined as *Knowledge that can be converted into value* [27], [28]. Various models have been proposed with the emphasis in the interrelatedness and coherence between human resource and business performance. According to these models, training and other HRM activities aim to increase individual performance of workforce and the individual results leading to higher firm performance [14]. A theoretical framework engaged in design models that show how human firm policies affect the development the business outcomes, is HRM. This model is a valuable analytical framework for studying the relationship between human resources and business performance because it is expresses more careful, clear and easy for empirically testing.

References [14], [28] have presented six theoretical models altogether from the fields of organizational theory, finance, and economics. Three of them (resource-based view of the firm (RBV), cybernetic systems, and behavioral perspective)) consider the relationship between training and firm performance.

Human capital is an important input for organizations especially for employees’ continuous improvement mainly on knowledge, skills, and abilities. As [10] shows, the definition of the human capital concept has change in the last years, indicating that it should be understood as “...*investment in imparting knowledge, training and information to people. So employers have mayors’ capacities to increase individual job performance and firm productivity to the modern economy*”. Today the constantly changing business environment requires firms to strive for superior competitive advantages via dynamic business plans which incorporate creativity and innovativeness. This is essentially important for their long term sustainability. As consequence in the last decade the definition of human capital is changed and referred to as “the knowledge, skills, competencies, and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being”.

B. RBV Theory and Hypothetical Model

The Resources based-view and Capacities Theory (RBV) of the firm has received great attention in the strategic

management literature. Its orientation towards internal analysis of the firm offers to human or capital resource strategic management a valuable conceptual framework, through which to analyze the ways in which firms try to develop their human resources with the aim of transforming them in a sustained competitive advantage [4], [15], [16], [22]. RBV with its important post-theoretical developments such as the Dynamic Capability Theory and the Intellectual Capital Theory, which are versions of the RBV) is based on the fundamental premise about the existence of heterogeneity among firms according to their internal resources and capacities, which explains the different results. More specifically it is influenced by the type, quantity and nature of their resources and capacities [24], [25].

The RBV states that businesses compete in the market via internal resources and capabilities and that those companies which make a difference achieve success. The RBV approach internal resources include human capital resources, financial resources, technology, plant and equipment, innovative abilities and internal processes systems. These all are directly under the control of business and a business can influence it. While the external resources include the production processes, external links of organization and organizational behavior. The internal firms are divided between tangible and intangible resources. The intangibles resources are special and hard to imitate will outperform their rivals. It can be considered that they favors the economic development and the internal accumulation of intangible resources as well as the distinctive, exclusive and specific capacities for a particular firm. The firms have and develop their internal resources in a unique manner. This unique way to combine and to apply resources is linked mainly with the *innovation* (capacities to develop products), *brand recognition or practical experiences* (production, advertisement, promotion and sales), and *professional knowledge* (human resources and organizational capacity). Whenever the selection and use of those resources remain sustainable, they can be considered as competitive advantages which can mark differences among firms and they generate greater economic benefits. Under this approach businesses have to rely both on their tangible resources (equipment, technology, physical production input) and their intangible resources (workforce experience, knowledge and skills) as well as on organization capacities (structure, organization systems), etc.

The RBV consider business internal intangible-resources as key to competitiveness, based on the fundamental premise of assuming business heterogeneity in terms of the provision of internal resources and capabilities; a heterogeneity which explains the differences in business results [4]. Intangible assets can be classified into three groups: human capital (workers’ knowledge, attitudes, potentialities, satisfaction), structural capital (shared knowledge, programs, patents, data bases and organizational culture) and relational capital (relationships with suppliers, customers and society), which together form the so called intellectual capital of the business. According RBV theory intangible resources are the keys to generate superior advantage competitiveness and permit to

obtain superior profit respect others competitors and the diversity of resources explains the heterogeneity in business results [7], [11], [13], [17].

From this point of view the human resources are decomposed between human capital and social capital. The human capital is a latent variable which is composed by workers knowledge's, attitudes, abilities and skills. The social capital is created by potentialities relationship and satisfaction relationship among workers and business executive.

These characteristic of the workforce of the business are formed in two ways: formal learning and informal learning and experience. Therefore both human and social capitals are shape entirely by the ongoing learning-training way.

Therefore, the human capital is a latent variable formed by indicators of ongoing-training process, and include level of schooling, ongoing training on the job and in the job. While the potential relationship and satisfaction job formed the social capital. Both human and social capitals are the basis of the specific knowledge firm creation.

The first hypothesis of the work is the follow:

H1: *The Human Resources are formed by indicators of learning-training process and job inter-relation and represents a unique construct with two latent dimension denominated Human and Social Capital resource, respectively.*

Thus ongoing training leads an improvement in business competitiveness and results. The workers participating in training activities trying to maximize the own benefits, wages or merely subjective benefits, according to the circumstances they face. In the other words, a company will fully enjoy the benefits derived from training only if the training favors the work and personal situation of individuals. This perhaps accounts for the fact that on many occasions the benefits of training on the profitability of the worker-business pair is not always equal [19], [26]. Many empirical studies have shown that the training increases more the benefit of business that of own workers. So the learning-training process is a decisive factor in the exploitation of the workforce as the "intangible" resource which forms the human capital. Thus the most common indicators of human capital measure are the formal schooling, and training.

Most lines of business require specific skills which cannot be provided by general purpose education. Therefore, training includes a set of activities in-company training actions aimed at improving workers' professional skills and entails: i) clear improvement in competitiveness seen in competitive results such as satisfaction and retention of skilled workforce, corporate image, product quality and customer satisfaction and loyalty, and ii) the scope of business results, such as increasing profit, sales, productivity, etc. The importance of training activities lies in the improvement and refreshing of the workforce skills and knowledge, that is, those intangible business assets that are hard to assess in a direct way or include in the financial accounting model of companies.

Businesses need to meet at least three conditions in order to establish a set of essential competences regarding Human Resources: First, workers should be offered ongoing training

so that they acquire knowledge and learn new skills and so that their expertise is up-to-date at all times. Second, business competitiveness can be developed only if companies are capable of gathering groups of people who not only integrate company positions crosswise but also through organizational levels (development of staff polyvalence). The third and last, once training and qualification competences are established, they should be put to use, developed and re-shaped in different ways (transfer and application of training and knowledge to all business activities) [6]. These aspects compose the human capital of business. This discussion is the basis of the second and primordial hypothesis in this work as well help us to annunciate the third and third-one hypothesis as the derivation of the third.

H2: *There is a direct relationship between Human Capital and Economic Business Result.*

H3: *There is a direct relationship Human Capital and Non-economic Business Result.*

H3-1: *There is an indirect relationship between Human Capital and Economic Business Result through Non-economic Business Result.*

From this view point is expected that these relationships are empirically with positive sign.

These fourth hypotheses a related with the interrelationship between economic and non-economic business results:

H4: *The Non-economic Business Results exert a direct impact on Economic Results.*

In order to develop the fundamental competences and superior knowledge, any company should be to promote good inter-relationship and healthy competition amongst workers. Businesses need to invest in staff training and promote cooperation to achieve the competitive advantage based on the specific human resource force. The inter-relationship between employers and employers and staff firm direction help in created a good support for human capital development. About this topic the following hypothesis are related with Social Capital:

H5: *There is a direct impact from Social Capital to Human Capital dimension.*

H5-1: *There is an indirect relationship between Social Capital and Non-economic Business Results through Human Capital.*

H3-2: *There is an indirect relationship between Capital Social and Economic Business Results through Human Capital.*

All cause-effect relationships annunciated above hypothetically have been summarized in a formative hypothetical Structural Equation Model and exposed in the Fig. 1.

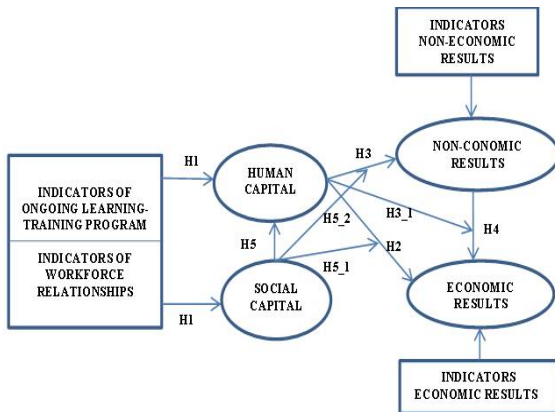


Fig. 1 Hypothetical Structural Equation Model (SEM)

The different assessment models reviewed in this section provide valuable insight and indicators in terms training and results. Regarding the variables used to measure the ongoing learning-training provided, some empirical studies use objective training variables and other use subjective variables. Objective variables can be in turn classified according to the type of information they provide, 1) training plans, training programming: number of courses offered by the company, modality and type of courses, 2) training intensity: percentage of trained workers, duration of courses in terms of hours, etc. 3) investment in training, direct and indirect cost and 4) access to training: differences in the probability of workers being trained.

To measure Social Capital some aspects of interpersonal relationship are used [18]. As to subjective variables, the most used ones are the following: reflections on the importance of training and/or opinions on the effectiveness of training and the objectives used by the company and the main conclusions of the empirical assessments reviewed (Fig. 2).

However, in these studies the effect of in-company learning-training process is skipped in the context of its impact on business results. In some works financial performance measures such as percentage of sales resulting from new products, profitability, capital employed and return on assets (ROA) [19]-[26]. Besides, return on investment (ROI), earnings per share can also be used as measures of financial performance. Others measures can be used: increment of sale or net profit, efficiencies of sale (sale/workers) and 'workers compensation' (workers' compensation expenses divided by sales). Respect non-economic results six dimension can be used: 'quality' (number of errors in production); 'shrinkage' (e.g. inventory loss, defects, sales return); 'productivity' (payroll expenses divided by output); 'operating expenses' (total operating expenses divided by sales) [23].

There are other studies where firm performance can be measured using 'perceived performance approach' where Likert-like scaling is used to measure firm performance from the top management perspectives [21].

Dimensions training evaluation	Indicators
Objective measure	
Training program	Training program Number of courses Course Modality Type of courses Course Content and areas
Training Intensity	Nº workers trained % workers trained Duration of course Previous training Initial education level
Training cost	Direct costs training Owen business Investment Foreign investment on total
Business criteria	Recruitment policies Initial level of training Status of workers Firm size Firm Strategy
Subjective measure	
	Objectives of training Effectiveness of training Level of satisfaction Usefulness of training Reasons of firm to train Worker's reasons training

Fig. 2 Indicators of Human and Social Capital

Furthermore, these studies provide a broad range of variables and indicators to measure both training and profitability. Fig. 3 summarizes in detail the business results variables and indicators.

Financial and Economic indicators	Non-Economic Indicators
Financial Buildings, equipment and materials (defect rates in production, inventory turnover, total assets) Auditing of accounts, income, expenses Surplus, profits or deficit Net worth of the company	Results comparing with objectives Success rates, defined according to the mission and vision of the company Volumen management Results of audits and inspections regulations
Economic Indicators Profitability Productivity Turnover Increase Sales Net profit before taxes ROI, ROS	Results of the processes Time to launch new product/ services R & D indicators Product and firm image Customer satisfaction Personal satisfaction Quality of product and service Zero defect production Market share
Process Productivity Value added in the product Effectiveness, Efficiency	Effectiveness marketing Effective management

Fig. 3 Results business indicators

III. EMPIRICAL STUDY: TEST OF THE SEM MODEL

A. Data source

To carry out the empirical study a data base provided by the Tripartite Foundation for Training and Employment] (FTFE), which covered the businesses concerned for triennium 2002-2004. In this data base the business were registered as users of the training credits administered by the FTFE and which were

willing to provide specific documentation regarding the kind of training provided, whether it was planned/carried out by the firm itself resources or taken from national or regional training financial plans. The data base utilized in this study contained individualized information about 16,500 firms registered as having carried out training between 2002 and 2004.

The first filter applied to the data base was to select those firms which carried out training consecutively in the years 2002-2004. The second filter had to do with the business service sector and the size of the firm in order to ensure their representation in the final sample. The result is a list of approximately 4000 firms from service sector and of various sizes was drawn up. From this list a sample of 1700 businesses was randomly selected whose directors (managers, heads of departments of human resources and training) were sent a personal and structured questionnaire. The fieldwork was carried out in the spring of 2006 and a response was received from 266 firms of service sector in Spain.

B. Questionnaire

The questionnaire contained three sections. The first covered general data regarding the business (main activity, number of permanent and temporary employees among others). The following two sections concerned the training carried out from 2002 to 2004 and the business economic and non-economic results obtained in the final year of 2006. The questions regarding learning-training and business results were grouped into themes. Each of these contained five important aspects of training related to training are: *planning*, *intensity* (number of courses, duration, training areas, content, qualified personnel), *investment made* (own investment and subsidies), initial level of education, previous training among others. These indicators are used to measure Human Capital dimension. While to measure Social Capital following indicators are used: relationship between direction staff and workers, interpersonal relationship among workers, degree of participation of workers in the decision and communication of goals and strategy by direction of business. With regard to results, two kinds of information were obtained, financial (% increase in turnover, % increase in net profit and workers sale ratio) and non-financial indicators (variation in the number of customers, degree satisfaction of costumers, personal satisfaction).

C. Measurement Model and Test of Hypotheses

To analyze the data a Structural Equation Model (SEM) is used. This estimation method is able to integrate the econometric aspects of prediction with the psychometric aspect connected to latent variables. Over the last years, a great discussion in the scientific community took part about the use of reflective versus formative indicators, and important studies [3], state that the model design has to be validated both theoretically (literature review) and empirically (statistical tests). The causal direction between the indicators and the latent variable has been considered; it is a direct consequence of the criterion described above, because if the causality goes from the indicators to the latent variable we are in the

formative case, whereas in the other way around we are in the reflective case. In this study we use the formative model to relate indicators and latent dimension why the latent dimensions are formed by its indicators and the RBV theory and others paradigm over the concepts used here are in continuous changes [9]-[11]. Other reason is the different measurement scale of observable indicators.

These variables were measured by continuous, ratio, scale, relative and dummy measures for two main reasons: facilitating the response by the managers since the absolute measures are not always available and obtaining a mix of information characterized by both managers' perception about these activities and their practical realization.

Performance is also a formative construct as we need indicators concerning its evolution over the years in order to define the variable. In other words, without these indicators about the evolution of turnover, net income and non-economic performance, the latent construct cannot exist [30]. When using a formative construct, it is important to build the latent variable on a large number of indicators, thereby ensuring that they have tapped into the multidimensional and multifaceted domain of the construct [2], [3].

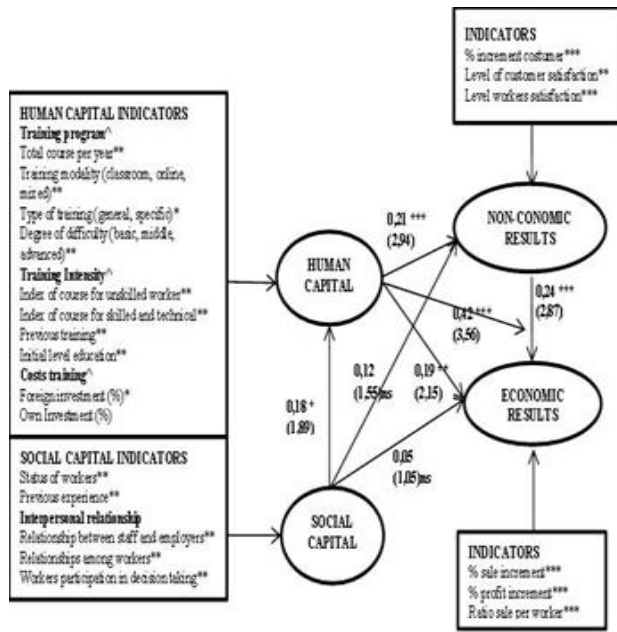
The structural relationships between learning-training, worker relationships and service sector business results have been estimated with the statistical package PLSGRAPH-3, considering both models, exogenous and endogenous, as formative[1], [29]. The partial least squares (PLS) method is a flexible technique (both formative and reflexive indicators can be used within a single model) aimed at the causal-predictive research to relate indicators with latent variables, notable for the absence of assumptions about the distribution of observable indicators. PLS path modeling assumed that each block of observed indicators can be summarized in a single latent variable and linear relationships exist among latent variables.

The results of the estimated coefficients are shown in Fig. 4.

IV. RESULTS DISCUSSION AND CONCLUSIONS

Following the theoretical approach of RBV, this study investigates two important issues: the importance of learning-training process and its representation by two latent dimensions Human and Social Capital. At the same time the interrelationship between these and Business Economic and Non-Economic Results has been studied.

According to the results obtained the most significant indicators related to learning-training process are number of course, type, difficulty level, level index of training skilled workers, with significance at 5% level.



^The data are available for 2004-2006

***Significant at 1%

** Significant at 5%

* Significant at 10%

The index are calculated:

$$\text{index} = \frac{n^{\circ} \text{ unskilled trained}_{2005} / n^{\circ} \text{ total trained}_{2005} + n^{\circ} \text{ unskilled trained}_{2006} / n^{\circ} \text{ total trained}_{2006}}{n^{\circ} \text{ unskilled trained}_{2004} / n^{\circ} \text{ total trained}_{2004}}$$

Fig. 4 Results of structural coefficients estimated

These indicators represent the Human Capital latent variable. Respect to Social Capital all indicators considered in the study, represents it satisfactorily. Thus in particular, concerning the H1 hypothesis this study confirmed the existence of two valid dimensions grouping the business resources human called Human Capital and Social Capital.

Regarding the structural coefficient estimated about the direct and indirect relationships the results confirm four of a total of six hypotheses (H2, H3, H3-1, H4 and H5). Also the coefficients of the relationship between Human Capital and Economic and Non-economic Business Results are positive and significant. The Human Capital dimension created from learning-training indicators, influence positively and significantly on Economic and Non-economic Business results. While respect Social Capital only the direct relationship with Human Capital is confirmed (H5). The coefficients of its indirect relationships are statistically insignificant.

From the empirical results can be deduced that businesses in the service sector have the chance to practice a deep workers training showed an efficient ability and transfer this inversion through Human Capital on its variability business results. The model confirms acquiring new skills and competence about the workplace influences positively on economic performance.

Given the importance of Human Resources more empirical studies are needed, focusing in enlarging the sample size and in the other sectors as well as investigating other kinds of

indicators of human resources, training process and its impact on business results.

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