

## Research on the Relationship between Intellectual Capital and Enterprise Performance: Perspective of Organizational Learning

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**Abstract**—In the era of knowledge economy, Chinese enterprises are exposed to the more turbulent and complicated competition environment, with the ever-accelerating change of market demand and technological development. For corporate development, intellectual capital and organizational learning turn out to be the key factors. By way of questionnaire survey on over 300 privately-run small and medium-size enterprises in Zhejiang, this paper empirically researches the relationship between intellectual capital and enterprise performance from the perspective of organizational learning. The findings show that under the combined effect of human capital, structural capital and relationship capital, intellectual capital influences the enterprise performance with organizational learning as an intermediate.

**Keywords**—Intellectual Capital; Organizational Learning; Enterprise Performance

### I. INTRODUCTION

Nowadays, knowledge economy and economic globalization turn out to be the two major trends of economic development in the world. Under the backdrop of economic globalization, knowledge economy proves to be the new power driven by knowledge and information. Besides, enterprise core competitiveness turns from traditional resources such as material and hardware into the intellectual capital such as talent, brains and innovation. In corporate competition, intellectual capital holds the balance, acting as the source of increasing corporate value and the guarantee of corporate stable operation and sustainable development. Closely bound up with organizational learning, intellectual capital exerts a great influence on enterprise performance through organizational learning.

### II. LITERATURE REVIEW

Intellectual capital was firstly presented in 1969 by John Keneth Galbraith, an American economist. Though intellectual capital is an intangible asset in company organization, it cannot be fully displayed in balance sheet. Held by enterprises, intellectual capital is an important strategic resource that can increase corporate value and create competitive edge. From different perspectives, scholars vary greatly in their knowledge about the basic composition of intellectual capital as well as present many different views on the classification of intellectual capital. However, on the whole, they focus on the research mainline

consisted of human capital, structural capital and relationship capital[1]. Enterprise performance, which refers to a series of tasks and profits achieved by enterprises for goal-attainment purpose in the production and operation process, proves to be the realization process and result of corporate goal.

Intellectual capital has a significant influence on enterprise performance, about which domestic and overseas researches have reached a consensus. Because intellectual capital can raise the value and profitability of a company, there is a need to research the intellectual capital role in different economies. Investors consider that high intellectual capital is of higher value; either at present or in the future, it shows high profitability and brings large income growth, and besides, with more intellectual capital including human capital, structural capital, and relationship capital, a company will display stronger profitability as well (Cheng, 2005).

Organizational learning ability refers to the ability that is demonstrated in the process of knowledge absorption, sharing and integration based on environment change of organization[2-3]. Many domestic and overseas researches show that organizational learning plays an obvious role in enterprise performance. Chen Guoquan and Zheng Hongping (2005) have made an empirical study on the positive correlation between organizational learning and enterprise performance based on their “6P1B” model. By way of empirical study, Bing Mingjie et al (2005) have verified that organizational learning indirectly affected enterprise performance through organizational innovation. Through much investigation on enterprises in Pear River Delta[4], Xie Hongming (2005) has empirically proved that organizational learning served as an intermediate between intellectual capital and organizational performance.

In the era of knowledge economy, organizational learning ability plays a key role in the development of enterprises with the ever-accelerating change of market demand and technological development. However, there is little study about the relationship between organizational learning and enterprise performance in domestic and overseas research literatures. In particular, for the influence of intellectual capital on enterprise performance, effect of organizational learning still produces many ambiguities. This paper attempts to verify the effect of organizational learning in this influencing process by means of researching the approach in which intellectual capital influences enterprise performance[5].

### III. RESEARCH DESIGN

#### A. Research hypothesis

Based on the above literature review, we put forward the following hypotheses.

- Hypothesis 1: Intellectual capital has a positive influence on enterprise performance, and according to the three dimensions of intellectual capital from three specific assumptions to prove, hypothesis 1a: Human capital has a positive influence on enterprise performance; hypothesis 1b: Structural capital has a positive influence on enterprise performance; hypothesis 1c: Relationship capital has a positive influence on enterprise performance.
- Hypothesis 2: Intellectual capital has a positive effect on organizational learning, and according to the three dimensions of intellectual capital from three specific assumptions to prove, hypothesis 2a: Human capital has a positive influence on organizational learning; hypothesis 2b: Structural capital has a positive influence on organizational learning; hypothesis 2c: Relationship capital has a positive influence on organizational learning.
- Based on the previous hypothesis 1 and hypothesis 2, we presented hypothesis 3: Organizational learning plays a role of intermediary in the relationship between intellectual capital and enterprise performance.

#### B. Data and sample selection

This research was carried out from early June to the end of October in 2011, taking the small and medium-sized private manufacturing enterprises at the different area of Zhejiang province as studying objects. It had mainly cover cities including Taizhou, Ningbo, Huzhou, Hangzhou and Wenzhou, etc. There were 360 questionnaires given out in total, among which 315 were returned. The returning rate is 87.5%, among the returned questionnaires, there were 268 valid. The valid returning rate is 74.4%, which was in accordance with the sample size of analytical method. Among the enterprises who provided valid samples, state-owned enterprises account for 4.1%, private account for 74.6%, Joint Venture account for 19.4%, and others account for 1.9%.

#### C. Variable design

This paper finally sorts out 47 items through consulting a large quantity of literatures for designs of related variables. The first part including 4 items investigates basic corporate information; the second part including 43 items measures corporate intellectual capital, organizational learning ability and enterprise performance. Every item adopts Likert Scale and the integers from 1 to 5 respectively represent “strongly disagree”, “disagree”, “neither agree nor disagree”, “agree”, “strongly agree”, based on which the respondents are required to grade every item according to their will.

With master's thesis of Gong Li as main referential material, corporate intellectual capital scale including 13 items measures the human capital from four aspects, namely,

staff's ability and attitude, staff's stability, corporate investment in human capital and ability of management personnel. Also, it measures structural capital with 8 items from organizational structure, corporate culture, business process, and innovation and R & D. Finally, it measures relationship capital with 8 items from customer orientation, customer loyalty, and relationship with partners.

With related researches of Calantone et al (2002) as main referential material, organizational learning scale including 7 items makes a measurement from organizational commitment, common vision, open mind, and the support and sharing inside organization.

There are various measurement methods for enterprise performance. This study mainly consults the researches of Jin Junling (2005) and Gong Li (2009) to make a measurement with 7 items based on three indicators, namely, financial performance, market capacity, and innovation and growth. Finally, it designs the above-mentioned indicators into questionnaire.

### IV. EMPIRICAL ANALYSIS

#### A. Reliability and Validity Analysis

It adopts Cronbach's Alphas, a coefficient of internal consistency, to test the reliability in our scale. See the test result as follows. Human capital, structural capital, relationship capital, organizational learning and enterprise performance Cronbach's Alpha coefficients respectively were 0.882, 0.863, 0.872, 0.833, 0.903, all value is more than the minimum acceptable level 0.7, indicating that the questionnaire reliability is better.

All the measuring items of variables in this study are got through combing the scale study of every variable by predecessors. Therefore, the content validity of the questionnaire is can be reassured.

#### B. Correlation analysis

TABLE I. CORRELATION ANALYSIS

Variables	Human capital	Structural capital	Relationship capital	Organizational learning	Enterprise performance
Human capital	1	.703**	.528**	.675**	.603**
Structural capital	.703**	1	.587**	.730**	.661**
Relationship capital	.528**	.587**	1	.498**	.606**
Organizational learning	.675**	.730**	.498**	1	.585**
Enterprise performance	.603**	.661**	.606**	.585**	1

Correlation analysis refers to the degree of correlativity between two variables. Table I of correlation analysis shows the statistical correlation among the variants in the research, from which can be learned that intellectual capital, organizational learning and enterprise performance correlated significantly to each other on the significance level of 0.01, thus hypothesis 1 and hypothesis 2 were proved.

### C. Multiple linear regression analysis

This research mainly uses multiple regression analysis to test the hypotheses of relationship among intellectual capital, organizational learning and enterprise relationship. First the various dimensions of intellectual capital on enterprise performance regression analysis (Details refer to the table II), then the various dimensions of intellectual capital on organizational learning regression analysis (Details refer to the table III), finally combined the various dimensions of intellectual capital and organizational learning as a independent variable on enterprise performance regression analysis (Details refer to the table IV).

TABLE II. REGRESSION ANALYSIS (A)

model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error			
(Constant)	.050	.206		1.244	.807
Human capital	.257	.075	.206	3.407	.001
Structural capital	.381	.071	.342	5.384	.016
Relationship capital	.354	.064	.296	5.565	.043
Independent variable: relationship capital, human capital, instruction capital Dependent variable: enterprise performance					

From table II can learn the following conclusion: the each dimension of intellectual capital and enterprise performance has significant effects, further verify the hypothesis 1 (including hypothesis 1a, 1b and 1c).

TABLE III. REGRESSION ANALYSIS (B)

model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error			
(Constant)	.448	.168		2.658	.008
Human capital	.334	.062	.308	5.422	.000
Structural capital	.470	.058	.483	8.110	.023
Relationship capital	.054	.052	.052	1.037	.021
Independent variable: relationship capital, human capital, instruction capital Dependent variable: organizational learning					

From table III can obtain the following conclusion: There is a significant effect between intellectual capital and enterprise performance, while the effect of relationship capital was not significant. While verify the hypothesis 2a, 2b and further verify the hypothesis 2.

As seen from table IV, the P value of relationship capital is 0.76, compared with table III, it is 0.21, this shows the relationship capital plays a fully intermediary role. The P value of human capital and structural capital are 0.08 and 0.25, and the B value of them are 0.212 and 0.318, compared

with table III, they are 0.334 and 0.470, the value are smaller, this means the human capital and structural capital play a partly intermediary role. Thus indicates that organizational learning plays a role of intermediary in the relationship between intellectual capital and enterprise performance, and at the same time hypothesis 3 is proved.

TABLE IV. REGRESSION ANALYSIS (C)

model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error			
(Constant)	.110	.207		-.532	.045
Human capital	.212	.079	.170	2.677	.008
Structural capital	.318	.079	.285	4.035	.025
Relationship capital	.347	.064	.290	5.463	.076
Organizational learning	.134	.075	.117	1.797	.073
Independent variable: relationship capital, human capital, instruction capital, organizational learning Dependent variable: enterprise performance					

### V. CONCLUSION AND IMPLICATIONS

The following conclusions are reached through empirical research:

1. Intellectual capital exerts a significantly positive influence on enterprise performance. That is, increase of intellectual capital investment will contribute to the improvement of enterprise performance, which will thus boost the sustainable development of enterprises.

2. Organizational learning acts as an intermediate between intellectual capital and enterprise performance. As intellectual capital investment is a systematic project, enterprises are required to fully unlock the potential of organizational learning, and meanwhile promote the conscious learning behavior of staffs through effective organizational learning, which will thus improve the enterprise performance.

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