



Full Length Research Paper

Verifying Effects of Human Capital of Taiwanese CPA Firms on Managerial Performance: Using Organizational Commitment as a Moderator

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The main purpose of this study is to verify the effects of human capital of Taiwanese CPA firms on managerial performance, with organizational commitment being the moderator. An interview was conducted on the owners and all staff of Taiwanese CPA. Stratified sampling was used to yield knowledge from the population according to the list of the Taiwan Provincial CPA association, R.O.C.. The overall model's goodness-of-fit effects concerning the overall mode, structural model and measurement model were verified using linear Structural Equation Modelling (SEM). Research results showed that: among the effects of Taiwanese CPA firms' human capital in Taiwan on managerial performance, the variable, "organizational commitment" plays a positive role in moderating or interactively action significantly, which also implies that organizational commitment has speedy power in the effects of Taiwanese CPA firms' human capital on managerial performance significantly.

Keyword: Human Capital, Organizational commitment, Managerial Performance

INTRODUCTION

At the end of the 20th century, the world entered into the so-called "era of knowledge economy", where "knowledge workers play vital roles in the operational activity within a company; such staff with knowledge become the human capital of company and while in the face of global challenges, with the best level of knowledge, technology and skills, they are also the ones whom many firms are pursuing.

"Talent is the company's largest asset"; this sentence is believed to become the motto of many entrepreneurs; in

an era of industrial revolution, a plentiful supply of cheap labor has become the most important talents within a company and in an era of knowledge economy, staff with knowledge shall be the talents creating wealth for an enterprise; furthermore, regardless of the era in which companies find themselves, one employee who can create wealth for the enterprise is the company's most valuable asset, and such human capital is required by the business desperately. However, it shall be the responsibility of the top management in the Department of Human Resources within a company to look for the right people, develop and retain such talents for assurance of the organization to ensure a strong and competitive edge, so that human resource personal and services become the key element in a company's creation of competitive advantage(Chen, 2006).

From the perspective of managerial accounting, strategic integration becomes more and more important, and it has gradually deviated from the traditional single type of performance evaluation criteria, going toward a composite performance scale linking the critical success factors of each level in an organization (Kaplan, 1984; Johnson, 1999; Hall, 1990). Four dimensions of the Balanced Scorecard (BSC), in addition to its maintaining traditionally financial performance indicators, also have additions of three dimensions of non-financial performance indicators such as the customer, internal processes, innovation and learning; such four dimensions shape an organization's vision and strategy into a brand new measurement system by objectives and measures where these are the main keys of motivation in future competitiveness.

In addition, in order to increase the human capital, a company shall consider employees as internal customers who should be respected and have attention paid to them, as well as build loyalty and make them willing to give every effort in the contribution of the company and organization; besides, through internal marketing, a company can develop product lines meeting the needs of employees for the effect of attracting and motivating others, such as supervisors' support in the work and training, etc., so as to seek ways to enhance performance in the organizational and individual work, enabling employees to achieve organizational expectations.

In summary, the owners and all staffs of Taiwanese CPA firms served as the subjects in the interview. The author, with findings reflected in the literature, built a research model for verification in order to grasp its goodness-of-fit. Accordingly, the specific purposes of this study are as follows:

1. To verify and understand whether the human capital of Taiwanese CPA firms has positive and significant effect on the managerial performance.
2. To verify and understand whether organizational commitment of Taiwanese CPA firms has a positive and significant effect on the managerial performance.
3. To verify and understand whether the human capital of Taiwanese CPA firms and organizational commitment has an interactive effect on the managerial performance positively and significantly.

Literature review

The section in this study is to understand any correlation between previous findings and the topic of this study. The hypothesis was deduced and the framework of this study was built from the literature review. Theories and studies relevant to this study are stated as follows:

Human Capital

Roos, Roos, Edvinsson and Dragonetti (1998) suggested that the value of human capital is created from the

investment in knowledge, skills and expertise.

Edvinsson and Malone (1997) considered that intellectual capital is composed of manpower, system and market; the human capital is mainly composed of staff's knowledge, skills and experience.

Davenport (1999) considered that the human capital includes innate ability, experience, nurtured skills, attitude and behavior

Mayo (2001) defined human capital and the characteristics as: Human capital is a kind of talent, knowledge, skills and network; the foregoing features have abilities to achieve organizational overcome and develop potentiality. Besides, he also considered that human capital also consists of individual motive, vision and leadership.

Hitt, Bieman, Schimizu and Kochhar (2001) considered that the human capital usually can be reflected by virtue of individual education, experience and special skills.

Gerald, Matthew, Zafar, Judy and Joyce (2002) considered that the human capital is organized by knowledge, skills, competence, attitude and experience for achievement of organizational mission; besides, it also consists of an organization's competence to recruit and retain talent individuals.

Lepak and Snell (2002) divided the human capital into four types with the value and uniqueness as the dimensions, which are (Chen, 2006):

(1) Knowledge-based human capital: When staff is capable of creating value and bringing competitiveness to the company, the company will prefer internal development; besides, when the staff are core to the competitiveness, in order to expand the behavior scope of the staff and increase their motivation in learning special skills within the company, the company would place more emphasis on the employment relationship with the organizational focus; furthermore, in order to support or create such relationship, the company would rely on its nurturing staff investment and maximizing the interests of investment in the human capital by a promise-based human resource system; hence, more or less of the productivity within a company is significantly connected with how much employee's promise was focused in such a system.

(2) Job-based human capital: An employee with sophisticated experience selected from the HR market can save significant capital in development obviously, and obtain multiple abilities to enter the market expediently for benefit of the investments.

(3) Contracting human capital: A company can subcontract those works with fewer contributions to the competitiveness relatively such as administrative works, documentation, or internal basic level of works and so on. Therefore, the company can focus on the skills which are helpful to the development of a company's competitive advantage.

(4) Alliance human capital: This kind of human capital furnishes a kind of consolidated mode in the employment

where internalization and externalization are mixed and any issues arising out of this are solved (such as expenses being too high).

Indicated from the above, in this study, the human capital was conceptually defined as “the human capital is organized by knowledge, skills, competence, attitude, and experience required for accomplishment of organizational missions. A staff member within such an organization is the individual unit of the human capital; the organization has to conduct the deployment of duties so as to utilize the human capital effectively”. In addition, concerning the human capital dimension, four categories divided by Lepak and Snell (2002) were used for measurement of dimension.

Organizational commitment

The concept of organizational commitment was derived from *The Organization Man* by Whyte (1965), who described the organization man as one that “not only works for the organization, but also belongs to it.” (Tsai, 2001). Moreover, organizational commitment is a key factor for understanding employees’ work behavior inside the organization.

Organizational commitment can be considered the relative intensity of an individual’s recognition of, and dedication to, the organizations’ goals and missions (Porter, Steers, Mowday and Boulian, 1974). Not only does it improve the solidarity among employees and the organization that hires them, it also creates a specific sense of pride for those belong to the organization (Jaworski and Kohli, 1993); besides, Mowday, Porter and Steers (1982) considered that individuals with outstanding performance have good interaction and effects with each other through organizational commitment and connection.

Price and Mueller (1986) considered that organizational commitment is a kind of loyalty reflected to the organization and a kind of dependence to the organization; it also considered costs related to the departure from the organization, which is a kind of obligation kept therewith (Meyer and Allen, 1990). Scholars have differed in the definition for such organizational commitment viewing varied theories and directions in the research.

Mowday et al. (1982) further named such three inclinations as value commitment, retention commitment and effort commitment in the study of questionnaire survey for public sector entities.

In their study on employees of psychologist’s training centres, Porter, Steers, Mowday and Boulian (1974) concluded that organizational commitment is the degree of an individual’s recognition of, and dedication to, a specific organization. They argued that members generally show three inclinations regarding the organization they belong to: (1) strong belief and

acceptance of the organization’s goals and values; (2) the longing for staying a part of that organization; and (3) the willingness to work in that organization’s best interest. Meyer and Allen (1991a) said the foundation on which organizational commitment is defined can be explained in three aspects: (1) affective attachment; (2) attachment due to the perceived cost; and (3) attachment due to moral factors such as obligations and rules. Mayer and Allen (1991b) named the three findings as affective commitment, continuance commitment and normative commitment, respectively.

Robbins (2001) considered organizational commitment an attitude toward work, which is the degree of an employee’s recognition of a specific organization and its goals, as well as how much he/she wishes to maintain the relationship with fellow organization members.

Wu (1993) underscored the importance of how much an individual identifies with his/her organization and shows commitment/loyalty toward it. The higher degree of commitment, the more eagerly an individual considers him/herself an integral part of the organization.

Hsieh (1999) argued that the organizational commitment is the degree of subjective feelings or emotional responses of an individual member with regard to various situations/dimensions of his or her organization.

According to Chen and Yu (2000), organizational commitment is an attitude/behaviour displayed by an organizational member who approves of the organization’s objectives, feels proud of being part of the organization, behaves in loyalty to the organization, and expresses willingness to strive toward organizational goals.

According to the findings of the study made by Tsai (2007), the main factor to the effect on the value, quality or quantity of work contributions behind an accounting staff member is the attitude such person upholds of his/her recognition to the organization. Such attitudes are mainly based on the degrees of his satisfaction in the promotion of position, remuneration and praise, company policy and the implementation method, technical guidance and supervision, as well as the satisfaction to interpersonal relationship.

In summary, the definitions of organizational commitment vary depending on the research approaches, subjects and purposes, but the above-mentioned scholars all agreed that an individual’s approval of, and dedication to, an organization is an important concept behind organizational commitment. Many Taiwanese studies were conducted using the retention commitment, value commitment and effort commitment (Mowdady et al., 1982) as major dimensions (Ding, 2000). The three dimensions have been proven highly valid in measuring organizational commitment. This study’s author, therefore, adopts the definition proposed by Mowdady, et al. (1982) to conceptually define organizational commitment as “the degree of members’ approval of organizational goals and values, and how much they are

willing to work extraordinarily hard to help the organization accomplish its goals" (Hsieh, 2006).

As suggested by Mowdady et al. (1982), organizational commitments are categorized and defined in this study as: (1) retention commitment (2) value commitment and (3) effort commitment, which operational definition is as the followings: (1) value commitment: an organizational member's faith in, and genuine acceptance of, organizational goals and values; (2) effort commitment: a member's willingness to seek the organization's best interests and make considerable efforts in this regard and (3) retention commitment: it refers to the staff's desire to maintain his identity as the member within an organization.

Managerial Performance

Russo and Fouts (1997) suggested that the indicators or variables in the assessment of managerial performance are mostly based on Return on Assets (ROA) and Return on Sale (ROS).

Li (2005) suggested that the company's managerial performance is the measurement indicator based on variables of financial performance that such variables consist of:

(1) ROE: refers to the managerial performance assessed by ROE after tax before interest generated from all assets used by the company for measurement. Therefore:

$$\begin{aligned} \text{ROA} &= \frac{\{ \text{Net after - tax profit} + \text{Interest} \times (1 - \text{Tax rate}) \}}{\text{Average gross asset}} \\ &= \text{Net after - tax profit margin} \times \text{Asset turnover} \end{aligned}$$

(2). EPS: It indicates profitability reflected in each share; expressed as:

$$\begin{aligned} \text{EPSW weighted average} &= \frac{\text{Net after - tax profit} - \text{Preferred stock dividends}}{\text{Average number of outstanding common stock shares}} \end{aligned}$$

Chung (2009) utilized ROE, Net Profit Margin, Total Asset Turnover and FLM as the measurement indicators.

Furthermore, there is a massive amount of previous studies on the measurement dimensions of organizational performance. Since the benefits of organizational performance will eventually be fed back to the financial dimension, most scholars adopt financial performance as one of the measurement indicators. In an environment characterized by convenient means of information delivery and fast-changing markets, nevertheless, a company nowadays shall never solely rely on financial performance for survival and competitiveness. That is to say, it is impossible to sufficiently gauge organizational performance using financial performance as the sole indicator (Ling and

Hong, 2010).

Moreover, Ling and Hong (2010) argued that organizational performance is the sum of accomplishments attained by all businesses/departments involved with an organizational goal within a given period of time, with the goal either meant for a specific stage or on the overall extent.

Kaplan and Norton (1996) emphasized that for the sake of achieving a strategic target, a company shall not rely on the financial dimension excessively where financial and non-financial dimensions shall be needed simultaneously. In other words, the measurement of financial performance shall derive from a company's financial dimension and non-financial dimension, which shall consist of: (1) Customer Perspective; (2) Internal procedural dimension and (3) Learning and Growth Perspective.

Summarized as above, the "conceptual definition" for "company's Managerial Performance" was generated from the study herein referring to studies made by Ling and Hong (2010), which was: For the sake of achieving a specific stage or the overall objective, the performance that each relevant undertaking or sector within the organization shall accomplish within a period of time. Besides, among the "financial dimension" and "non-financial dimension" applied from the dimension of balanced scorecard suggested by Kaplan and Norton served as the measurement dimension for company's Managerial Performance, the financial dimension designated each shareholder's ROE and EPS to be the measurement indicator; non-financial dimension shall consist of three dimensions including (1) Customer Perspective; (2) Internal Procedural Dimension; and (3) Learning and Growth Perspective.

Effects of Human Capital on Managerial Performance

Chen (2008) considered that the human capital aggregated in small-to-medium enterprises or the top management team shall have positive effect in the enhancement of the spirit of entrepreneurship and performance, while it shall be the mediating effect brought between the human capital and the spirit of entrepreneurship having direct influence on the organizational performance instead of practices regarding human resource management with outstanding performance.

Hsieh (2011) considered that in the human capital dimension, international CPA firms have more effect on the Managerial Performance than non-international CPA firms do.

Chen (2011) suggested that the human capital investment shall have a certain level of efficiency on organizational financial performance, while it shall have a deferred effect, that is, a higher level behind the human capital investment, on better performance the

Research Framework

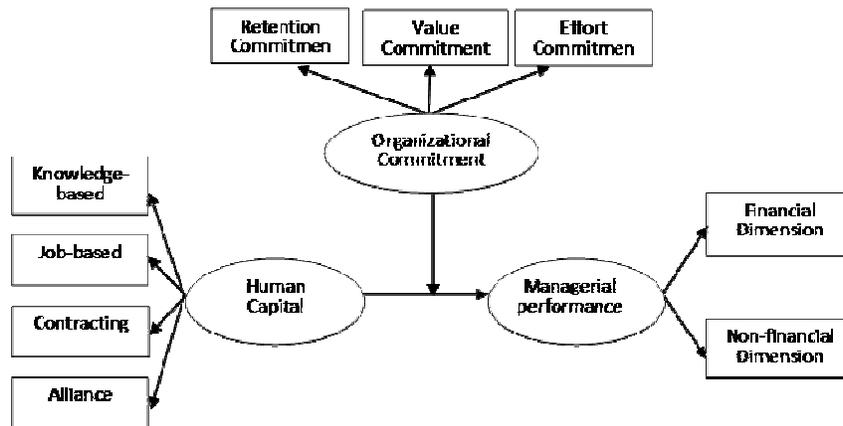


Figure 1. Research Framework of This Study

Table 1. The results of CMV test

Model	χ^2	DF	$\Delta\chi^2$	ΔDF	P
Single Factor	1458.610	209	915.277	27	0.003
Multi-Factor	543.333	182			

Table 2. Number of Questionnaire Items under each 'Implicit Variable' and 'Observable Variable'

Implicit Variables	Explicit Variables	Total Number of Questionnaire Items	Referential Sources
Human Capital (X)	Knowledge-based	3	Lepak and Snell (2002)
	Job-based	3	
	Contracting	3	
	Alliance	3	
Organizational commitment (Mo)	Retention commitment	4	Mowdady et al (1982)
	Value commitment	4	
	Effort commitment	4	
Managerial Performance (Y)	Financial Dimension	8	Kaplan & Norton (1996)
	Non-financial Dimension	8	

organizational finance shall present.

Luo (2011) mentioned in an article titled "The Association between Human Capital and Operating Performance for Partnership Accounting Firms", "human capital" and an employee's "educational background", "experience", "advanced studies" and "salary" are all factors to the effects of a CPA firm's Managerial Performance. Indicated from the empirical results, (1) the better an employee's educational background presented in a CPA firm, the better the Managerial Performance; (2) the richer an employee's experience presented in a CPA firm, the better the Managerial Performance; (3) the more expense invested in an employee's advanced studies, the better the Managerial Performance; and (4) the more salary the employee in the CPA firm earns, the better the Managerial Performance.

Even though some subjects discussed in these studies are classified within the scope of differentiated industry or

scale, similar perspectives remain; hence, the study extrapolates the following hypothesis:

Hypothesis 1 (H1): Human capital has a significant and positive effect on Managerial Performance.

Effects of Organizational Commitment on the Managerial Performance

Chuang (2008) suggested in an article entitled "The Perceived Environmental Uncertainty, Management Accounting Systems and Managerial Performance : The Study on the Moderating Role of Organizational Commitment" that a manager's perceived environmental uncertainty, under high level of organizational commitment, shall be able to regulate the effect of usefulness of perceived MAS information displayed on the management performance.

Table 3. Judgment Indicators in the Measurement Model Standardized Regression Weights: (Group number 1 - Default model)

Unobservable/implicit variables	Observable/explicit variables	Factor loading	Composite Reliability, C. R.	Cronbach's α	Average Variance Extracted, AVE
Human Capital (X)	X1C	.834	.841	.832	.672
	X2C	.833			
Organizational commitment (Mo)	M1C	.831	.832	.813	.664
	M2C	.833			
X*Mo	X1C* M1C	.901	.881	.874	.751
	X2C* M2C	.912			
Managerial Performance (Y)	Y1C	.834	.833	.821	.671

Table 4. Estimated Values for Discriminated Validity within the Confidence Interval

Parameter	Estimate	$\Psi_{\pm 2\sigma}$		Bias-corrected		Percentile method	
		Lower	Upper	Lower	Upper	Lower	Upper
X \longleftrightarrow Y	.461	.362	.571	.352	.561	.372	.592
Mo \longleftrightarrow Y	.483	.382	.584	.371	.572	.373	.583
X*Mo \longleftrightarrow Y	.591	.484	.692	.482	.673	.484	.691

Table 5. Path Analysis Results of Structural Model

Path Coefficients between Implicit Variables			Estimate	S.E.	C.R.	P	Label
Human Capital (X)	→	Managerial Performance (Y)	.461	.032	14.406	***	a
Organizational commitment (Mo)	→	Managerial Performance(Y)	.483	.036	13.412	***	b
X*Mo	→	Managerial Performance (Y)	.591	.043	13.744	***	c
X	→	X1C	.863	.142	6.077	***	
X	→	X2C	.872	.131	6.654	***	
Mo	→	M1C	.843	.134	6.291	***	
Mo	→	M2C	.822	.132	6.227	***	
X*Mo	→	X1M1C	.844	.073	11.561	***	
X*Mo	→	X2M2C	.893	.071	12.577	***	
Y	→	Y1C	.831	.038	21.868	***	
Y	→	Y2C	.842	.037	22.758	***	

Note: * indicates $P < 0.05$; ** indicates $P < 0.01$; *** indicates $P < 0.001$

Huang (2010) considered that the higher the degree of satisfaction accounting personnel showed on their work, the higher the organizational commitment, while such degree of satisfaction and organizational commitment shall have both positive effects on the job performance indicating that the more accounting personnel are satisfied with their job, the higher the organizational commitment.

Chang (2012) mentioned the significantly positive correlation between organizational commitment and organizational performance in "A Study on Organizational Culture, Organizational Performance, Job Stress and Organizational Commitment for Public Sector."

Hong (2012) suggested that organizational commitment has significant effect connected to the job performance.

From the above, the following hypothesis is inferred:
Hypothesis 2 (H2): Organizational commitment has positive effect on Managerial Performance.

The following hypothesis is derived from the discussions above:

H2: Organizational commitment exerts a significant and positive effect on managerial performance..

Effects of Human Capital and Organizational Commitment on Managerial Performance

Chiu (2008) suggested that organizational commitment has influence on employee's behavior and attitude, and the critical key to a company's Managerial Performance

Table 6. Coefficients^a of Determination

Coefficients of Determination	R ²
Human Capital (X) on Managerial Performance (Y)	0.212
Organizational commitment (Mo) on Managerial Performance (Y)	0.233
X*Mo on Managerial Performance (Y)	0.349

Table 7. Assessment of Fit of the Overall Model

Determination index	χ^2	DF	GFI	AGFI	NFI	CFI	RMR	RMSEA
Fit value	12.705	14	0.912	0.904	0.903	0.904	0.035	0.031

is dependent on how much the contribution the employee makes might affect Managerial Performance, then, organizational assessment of employee’s performance is through the awards and incentive procedures where organizational commitment, human capital and award and incentives system are connected with the company’s Managerial Performance closely.

In addition, indicated from the studies referred to the above two sections, whether the human capital and organizational commitment have multiple effect or synergy on Managerial Performance is a critical topic worthy to be discussed and explored; hence, this study derives the third hypothesis as follows:

Hypothesis 3 (H3): Human capital and organizational commitment have positively and interactively significant effect on Managerial Performance.

RESEARCH METHOD

Research hypotheses and a conceptual research framework were derived from the above-mentioned research motives, objectives, and literature review, as shown in Figure 1.

Designing the questionnaire and the CMV test

Designing the questionnaire

Consisting of observable dimensions mentioned earlier, the questionnaire was designed on the basis of multi-dimensional measurement and all answers were measured on a 7-point Likert Scale, with 7 being Strongly Agree and 1 being Strongly Disagree. A higher score represents a greater degree of agreement, and vice versa. Further, “centralization” was applied in the figures collected from the samples; that is, the score of each question in the questionnaire deducting the sum of means was zero, so as to diminish linear overlap between independent variables and extraneous variables for facilitating the test of their interactive actions; and the mathematical formula for such “centralization” is:

$$\Sigma(Y_i - \bar{Y}) = \Sigma Y_i - n\bar{Y} = 0$$

The 12-item questionnaire for human capital referred by the viewpoints proposed by Lepak and Snell (2002) on the balanced scorecard shall consist of dimensional scales named “Knowledge-based”, “Job-based”, “Contracting” and “Alliance” for the design with 12 questions.

The 12-item questionnaire for the organizational commitment followed the perspective proposed by Mowday et al. (1982) based on three dimensional scales that consist of “retention commitment”, “value commitment” and “effort commitment”.

The 16-item questionnaire for the measurement indicators of “managerial performance” followed the perspective proposed by Kaplan and Norton (1996) which shall consist of “financial dimension” and “non-financial dimension” for the design.

CMV Test

This questionnaire tested issues of CMV through CFA Comparison Method; indicated from Table 1, $\Delta\chi^2$ value is huge which means there are no issues of CMV in this questionnaire (Chang, 2011).

Method of Sampling

This study used Stratified Sampling method and owners and all staffs were the subjects in the interview; 10 copies of expert questionnaire were given out in a pilot-test. A post-test was conducted after modifying the questionnaire in accordance with expert suggestions. Three hundred copies of the official questionnaire were given out, with 206 valid copies returned at a return rate of 68.7%.

Data Obtained from the Questionnaire and the Measurement System

Linear Structural Equation Modelling (SEM) was used in a Confirmatory Factor Analysis (CFA) of this study’s research framework. The questionnaire was constructed

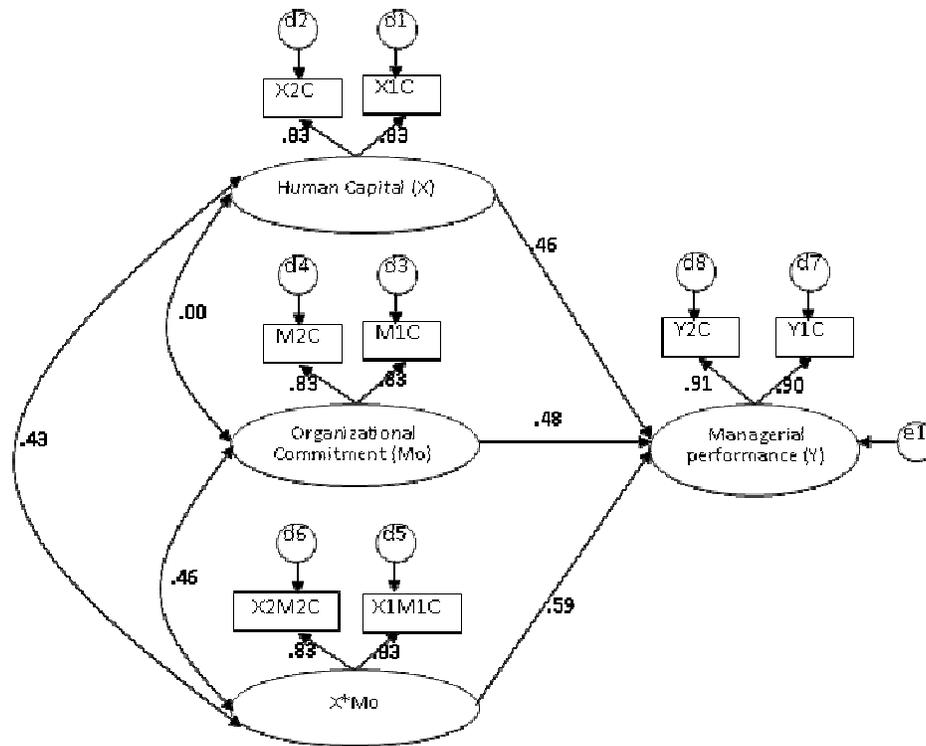


Figure 2. Standardized results of SEM analysis

on the basis of three latent variables, i.e., human capital, organizational commitment, and Managerial Performance; each divided into observable/explicit sub-variables containing several questionnaire items. The data collected was processed to create a primary file for questionnaire compilation. As for the measurement model, this study's author employed the multi-dimension measurement to design the questionnaire but adopted the dual measurement method to ensure successful data processing by computer software (Chen, 2010). Table 2 shows the number of questionnaire items under each implicit and explicit variable, along with the referential sources.

RESULTS AND ANALYSIS

Analysis of linear structural model

This study's author conducted a CFA, which is an analytical approach contrary to the Exploratory Factor Analysis (EFA), on each pair of the three unobservable/latent variables (i.e., human capital, organizational commitment, and Managerial Performance). Made up of structural and measurement models, the SEM effectively addresses cause-effect relations among the implicit/latent variables. Models in this study were verified in three regards: (1) goodness-of-fit of the measurement model; (2) goodness-of-fit of the structural model; and (3) whether the overall model

conformed to the goodness-of-fit indices. In other words, relevant fit indices were employed to determine the overall goodness-of-fit effect of SEM (Diamantopoulos and Siguaw, 2000; Leea, 2012).

Analyzing fit of the measurement model

To a large extent, factor loading is intended to measure the intensity of linear correlation between each latent/implicit variable and a manifest/explicit one. The closer the factor loading is to 1, the better an observable variable is in measuring latent variables. Since this study's reliability is supported by the fact that factor loadings for all observable variables range between 0.8 and 0.9, all observable/explicit variables in the measurement model appropriately gauged the latent/implicit ones. The Average Variance Extracted (AVE), on the other hand, gauges an implicit/implicit variable's explanatory power of variance with regard to an observable one, with the AVE value growing in proportion to the reliability and convergent validity of that particular implicit/latent variable. As a rule, AVE must be larger than 0.5 for an observable variable's explainable variance to exceed the measurement error (Fornell and Larcker, 1981). Since the factor loadings and Composite Reliability (C.R.) values in this study all exceeded 0.7, with AVE values invariably larger than 0.5, the latent/implicit variables have excellent reliability and convergent validity (see Table 3, Table 4 and Figure 2).

Table 8. Coefficients^a of the regression analysis and *t*-test of centralized Y for X, Mo, X*Mo

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	4.816	.471	.452	10.225	.000
X	9.753	.911	.472	10.706	.000
Mo	6.884	.413	.310	22.206	.000
2 (Constant)	5.041	.551	.453	9.149	.000
X	9.753	.911	.472	10.706	.000
Mo	6.374	.413	.310	15.433	.000
X*Mo (c)	15.411	.528	.591	29.188	.000

a. Dependent Variable: Organizational Effectiveness(Y)

In this study, the discriminant validity among model dimensions is determined using the AVE method. Fornell and Larcker (1981) said there would be discriminated validity among the dimensions only when the AVE exceeds the square of correlation coefficients in each dimension. Table 4 shows the discriminant validity among this study's dimensions (i.e., corporate governance, productivity, intellectual capital, and organizational performance).

Analyzing fit of structural model

Path analysis results of structural model

This study's author made sure that the overall model passed the goodness-of-fit test before calculating the parameter estimates, Standard Errors (S.E.) and Critical Ratio (C.R.) results among latent variables, as shown in Table 5. Besides, indicated from Table 5, the human capital and organizational commitment (X*Mo) has a significant interactive action on the managerial performance (Y) ($c=0.591$) which means the human capital may be able to consider "organizational commitment" while affecting on the managerial performance for achievement of multiplied synergy.

Coefficient of Determination

The so-called coefficient of determination refers to Squared Multiple Correlation (SMC) which indicates how well an implicit independent variable explains an implicit dependent one of each implicit variable. In Table 6, each implicit independent variable has middle-to-low level of explanatory power regarding the implicit dependent ones respectively.

The indices of fit of the overall model

The purpose of adopting SEM in the modeling phase of this study is to explore the relationship between

unobservable variables within the structural model, to examine whether the measurement model has measurement reliability or not, and also to measure the overall goodness-of-fit effects of this study using such indices as χ^2 , d.f., GFI, AGFI, NFI, CFI, RMR and RMSEA. In most cases, they are $\chi^2/d.f. < 5$, $1 > GFI > 0.9$, $1 > NFI > 0.9$, $1 > CFI > 0.9$, $RMR < 0.05$ and $RMSEA < 0.05$ (Bagozzi and Yi, 1988). The goodness-of-fit of the overall model in this study is satisfying, given the fact that $\chi^2/d.f. < 5$ and GFI, AGFI and NFI all exceed 0.90, with RMR smaller than 0.05, as shown in Table 7.

Standardized results of SEM analysis

Figure 2 shows the overall framework resulted from computer-aided standardization (Leeb, 2011):

Analytical testing of path effects for the structural model

The test of extraneous variables in this study has conducted hierarchical regression analysis first, followed by the regression analysis and *t*-test of centralized Y for X, Mo, X*Mo, so as to verify whether the significance of partial regression coefficient *c* is established or not (i.e., whether *c* equals to zero or not) as shown on Table 8.

As indicated from the foregoing Table 8, the path coefficient Mo*X for Y was 0.591; hence, Mo*X has moderating effects on Y.

The above-mentioned analysis generated some verified results:

1. Human capital has a significant and positive effect on managerial performance significantly, with 0.461 standardized path coefficient; hence, substantiating H1. (Hypothesis substantiated)
2. Organizational commitment has a significant and positive effect on managerial performance, with 0.483 standardized path coefficient; hence, substantiating H2. (Hypothesis substantiated)

3. Human capital and organizational commitment have positive and interactive effects on the managerial performance, with 0.591 standardized path coefficient; hence, substantiating H3. (Hypothesis substantiated)

CONCLUSIONS AND SUGGESTIONS

CONCLUSIONS

The following specific conclusions are derived from the afore-mentioned data analyses and results:

1. For the verification with SEM mode, the SEM constructed in the study herein had goodness-of-fit with the Measurement Model, Structure Model and overall structure, which indicated good condition of fit among these models.

2. For verification as to the practices: Taiwanese CPA firms' human capital and organizational commitment have significant, positive and interactive effects on the managerial performance; in other words, the variable, "organizational commitment", referred in the study herein has positive moderating effects. Indicating what Shun-yu Chen (2010) suggested in his study, when the extraneous variables and independent variables simultaneously have significant interactive effects on the dependent variables significantly, the effects of independent variables on dependent variables or the effects of extraneous variables on dependent variables have less meaning. Besides, when 'organizational commitment' has moderating effects, both of the variables, human capital (independent variable) and organizational commitment, might not have correlation (i.e., both of the variables are independent, please refer to Figure 2).

CONTRIBUTIONS OF THIS STUDY

1. Innovative applications of research method

In the Review literature as to the similar topic, most of the field used multi-regression method in the exploratory research with less consideration in the research framework of empirical factor analysis for the moderating effects behind the latent variables; the major dimension of the topic selected in this study concern the implicit variables; hence, it is more suitable for CFA and SEM and served as the measurement tool and model framework herewith; therefore, the research method used in the study is more innovative.

2. The research topic with practicability

Unlike the previous studies, which were EFA in nature, this study's author built a model according to the literature review, with the model's goodness-of-fit effects

examined subsequently. The present study, consequently, is a CFA-based one addressing topics with importance in business practice. Its research results provide a reference for further studies in relevant fields, and also for the reference of decision-makers of Taiwanese CPA firms with managerial connotations.

Limitations and suggestions

1. This study is only for the CFA mode applied in Taiwanese CPA firms; future researchers might consider verifying different industries to determine difference of fitness in the same mode.

2. Regarding the modeling for a CFA-based study like the present one, it is advisable that a simple verification model be built to avoid excessive complexity, and the subsequently poor goodness-of-fit (Chen, 2010); hence, the study herein only considered the effect of human capital on the managerial performance and organizational commitment served as the extraneous variable.

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