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EXPLORING DIFFERENT PERCEPTIONS OF CUSTOMER VALUE BETWEEN  
MANAGERS AND CUSTOMERS

Chieh-Heng Ko

Dept. of Hospitality Management, Da Yeh University, Taiwan, R.O.C.

Email: [chko@mail.dyu.edu.tw](mailto:chko@mail.dyu.edu.tw)

Abstract

Delivering superior value to customers is very important in hotel operation. Most previous research have been done in customer value from the customer's perspective or the manager's perspective, but little research sought to achieve both perspectives in a single study. Therefore, the aim of this study is to integrate the perspectives of managers and customers to explore different perceptions of customer value. The results indicated that the perceptions of customer value between managers and customers are different. This differences also persist in different classes of hotel. Therefore, this study suggests that hotelier should adopt the customers' perspective as a useful guide to provide service and may benefit from research that increase knowledge about customers' needs and expectations.

Keywords: Customer value, Customer's perspective, Manager's perspective

Introduction

Delivering superior value to customers is important for business success (Spiteri and Dion, 2004). This is much more critical in hotel operation. Choi and Chu (2001) suggest that to be successful in the industry, hoteliers must provide the best quality, best prices,

and best service, they should view themselves as value-producing entities and must be done continuously and efficiently. A lot of research works have been done in customer value from the customer's perspective (Sanchez et al., 2005) or the manager's perspective (Liu et al., 2005) but little research sought to achieve both perspectives in a

single study, in particular in the hospitality and tourism sectors. Therefore, the aim of this study is to explore different perceptions of customer value between managers and customers in hotel industry.

### Literature Review

The process of delivering customer value in a hotel setting involves three parties, including employees, managers, and customers (Gowan et al., 2001); consequently, there are possibilities of errors in the complex and highly interactive service delivery process (Gowan et al., 2001). Since for managers customer service is a product, the customers' experience should be seen as the primary guideline of the quality of customer value hence hotel manager must be attuned to "listening to the customer" (Coyle and Dale, 1993). Specifically, Shoemaker and Lewis (1999) suggest that management should do informal research, such as "managing by walking around", and formal research on customer needs and customer expectations. There is additional pressure management in providing superior customer value consistently in that there needs to be effective human resource practices need to be in place.

The hotel classifications across many countries are predicated by differences in customer value. While a number of factors are included in hotel classifications, at the most basic these are aspects that differentiate hotels by cus-

tomers value. Higher classified hotels are expected to provide superior customer value through better quality of services and facilities as compared to lower classified ones. Hotel classification serves to provide uniform expectations and higher classified hotels can charge a higher price for the same product such over night rates, liquor and food. This is because they are seen as justified on the basis of customer value, heavier investment and superior training of staff. The findings of Cadotte and Turgeon (1988) study indicate that the atmospherics of hotel lobbies, and quality of food are the key factors in guest satisfaction. In addition, cleanliness of hotel rooms, quality of service, employee knowledge and service, and quietness of surroundings were found to be important factors of hotel guests' satisfaction. This leads to the following hypotheses.

**H1.** Different classes of hotels deliver significantly different levels of customer value as seen by the managers and the pattern of differences is hypothesized to be:

- (a) Reputation for quality: Prime hotel are perceived to have higher reputation for quality than standard hotels which in turn are considered to be higher than budget hotels.
- (b) Value for money: Standard hotels are perceived to be better value for money than prime hotel and budget hotels.
- (c) Prestige: Prime hotel are perceived as more prestigious than standard hotels which in turn are considered more

prestigious than budget hotels.

Using the same logic one can extend the argument to customers. Customers in higher classified hotels perceive themselves as receiving higher customer value than those in lower classified hotels. This is logical as one cannot see any logic in anyone paying higher hotel tariffs for inferior value. Thus, higher classified hotels are likely to provide better value both from managers and customers' perspectives. Thus, the following hypotheses are postulated.

**H2.** Different classes of hotels deliver significantly different levels of customer value as seen by the their customers and the pattern of differences is hypothesized to be

- (a) Reputation for quality: Prime hotel are perceived to have higher reputation for quality than standard hotels which in turn are considered to be higher than budget hotels.
- (b) Value for money: Standard hotels are perceived to be better value for money than prime hotel and budget hotels.
- (c) Prestige: Prime hotel are perceived as more prestigious than standard hotels which in turn are considered more prestigious than budget hotels.

Previous studies have identified potential discrepancies between management perception and customers' actual experience in the hotel industry. That is, managers overestimate the service they are providing (Tsang and Qu, 2000). In

addition, managers are likely to have high expectations for the level of service that the organization is providing (Gowan et al., 2001). This implies that managers do not have an in-depth understanding of customers' expressed and latent needs. Consistent with Tsang and Qu's (2000), we hypothesize that there are difference between customers' experiences and management perceptions of the level of customer value. More fundamentally, management perception is really one thing: perhaps planned or emerging customer value. On the other hand, customer value as from the customer's point of view is an experience; it is actual and lived experience. This may lead to differences in evaluating the same phenomenon.

**H3.** Managers and customers will differ in their evaluation of customer value

- (a) for reputation for quality
- (b) for value for money
- (c) for prestige

The delivery of services involves employees, managers, and customers; this may create differences between the perceptions of service delivered as seen by managers and services experienced by customers (Gowan et al., 2001). These differences arise as a result of lack of congruency between managers' plans and how they are carried out by employees. Differences between managers and customers could also arise from communication (what managers planned to communicate) and the messages re-

ceived by customers. Since employees have more contact with customers (Gowan et al., 2001), the differences between managers and employees would further exacerbate differences between managers and customers (Coyle and Dale, 1993; Tsang and Qu, 2000). Therefore, customers and managers are expected to evaluate delivered customer service. Accordingly,

**H4.** Managers and customers at the same class of hotel perceive significantly different levels of customer value.

- (a) Managers and customers at budget hotels perceive significantly different levels of customer value.
- (b) Managers and customers at standard hotels perceive significantly different levels of customer value.
- (c) Managers and customers at prime hotels perceive significantly different levels of customer value.

### Methodology

This research employed two self-administered questionnaires: one for hotel managers the other for hotel guests. To capture the information from hotel managers, all classified hotels from across Taiwan were included. In total, 83 hotel managers responded to the research. The sample of hotel guests was collected from hotels in Taiwan. Seven hotels participated in this guest study. The hotels were selected in such a way as to parallel the proportions in the managers' sample. The number of respondents who participated in the customer survey was 385.

This study applies the perceived value scale developed by Petrick (2002) to measure the perceived value of service in the hotel sector. The components of customer value in this study consist of "reputation for quality", "value for money", and "prestige". Respondents were asked the extent to which they agree or disagree with each of the statements. The scales ranged from 'strongly disagree' (1) to 'strongly agree' (7).

All measures were shown to have acceptable psycho-metric properties. To establish discriminant validity across the measures, the method suggested by Fornell and Larcker's (1981) was applied. This involves comparing the covariances (between latent factors) and average variance extracted (AVE) of the indicators of each dimension of customer value for both the managers'. Discriminant validity is established if the AVE is larger than the square root of the covariance. The results indicated that for both the managers and customer samples showed discriminant validity for reputation for quality, value for money and prestige are distinct constructs. This is a more rigorous test of discriminant validity than the chi-square difference from imposing unit (1) on the covariances. The results are presented in Table 1.

### Results and Discussion

The results of hypotheses testing H1 and H2 are shown in Tables 2 and 3. The aggregate measure of customer

**Table 1.** Internal consistency, square roots of average variance extracted, and correlation matrix for customer value

	Managers			Customers				
	Internal consistency	1	2	3	Internal consistency	1	2	3
1 Reputation for quality	0.92	0.77			0.91	0.77		
2 Value for money	0.89	0.67	0.73		0.89	0.67	0.76	
3 Prestige	0.88	0.56	0.44	0.84	0.92	0.56	0.44	0.86
	$\chi^2=102.267$ ; d.f.=44; $\chi^2/d.f.=2.324$ ; GFI=0.928				$\chi^2=160.965$ ; d.f.=44; $\chi^2/d.f.=3.658$ ; GFI=0.937			
	AGFI= 0.873; RMSEA=0.076				AGFI= 0.888; RMSEA=0.069			

The figures along the diagonal and in bold are square root of the average variance extracted for each construct. The figure in the table are correlations.

**Table 2.** Perceptions of customer value as seen by managers across different hotel classifications

	Hypothesis	Prime Hotel, N=31	Standard hotel, N=133	Budget hotel, N=67	F-Ratio	Different sets
Reputation for quality	H1a	6.35	5.83	5.39	16.09***	P>S>B
Value for money	H1b	6.21	5.94	5.63	6.49***	P>S>B
Prestige	H1c	6.07	5.32	4.77	14.69***	P>S>B

\*\*\* $p<0.001$ , P: Prime Hotel, S: Standard hotel, B: Budget hotel.

**Table 3.** Perceptions of customer value as seen by managers across different hotel classifications

	Hypothesis	Prime Hotel, N=65	Standard hotel, N=275	Budget hotel, N=45	F-Ratio	Different sets
Reputation for quality	H2a	5.18	5.06	4.07	31.01***	P>S>B
Value for money	H2b	5.07	4.96	4.01	25.32***	P>S>B
Prestige	H2c	4.73	4.69	3.79	15.02***	P>S>B

\*\*\* $p<0.001$ , P: Prime Hotel, S: Standard hotel, B: Budget hotel.

**Table 4.** Different perceptions of customer value as seen by managers across different hotel classifications

	Hypothesis	Managers, N=231	Customers, N=385	t-Value	Different sets
Reputation for quality	H3a	5.77	4.96	11.25***	Manager>Customer
Value for money	H3b	5.88	4.87	13.90***	Manager>Customer
Prestige	H3c	5.26	4.59	7.20***	Manager>Customer

\*\*\* $p<0.001$

**Table 5.** Different perceptions on customer value as seen by managers and customers

	Hypothesis	Managers	Customers	t-Value	Different sets
Budget hotel	H4a	N=67	N=45		
Reputation for quality		5.39	4.07	8.14***	Manager>Customer
Value for money		5.63	4.01	9.15***	Manager>Customer
Prestige		4.77	3.79	4.57***	Manager>Customer
Standard hotel	H4b	N=133	N=275		
Reputation for quality		5.85	5.06	9.37***	Manager>Customer
Value for money		5.94	4.96	10.97***	Manager>Customer
Prestige		5.35	4.69	5.82***	Manager>Customer
Prime Hotel	H4c	N=31	N=65		
Reputation for quality		6.35	5.18	6.49***	Manager>Customer
Value for money		6.21	5.07	7.47***	Manager>Customer
Prestige		6.07	4.73	6.33***	Manager>Customer

\*\*\* $p<0.001$

value is used to discuss the average rating across the three dimensions of customer value. The results indicate that the level of reputation for quality as seen by managers is higher for prime hotels than for standard hotels which in turn is significantly higher than budget hotels. Thus, H1a is supported. The same pattern of results is found for value for money and prestige; these results support H1c; while H1b was not supported.

When the results are looked at from the customers' received customer value, customers indicate they receive superior value at prime hotels which is significantly better than in standard hotels which in turn is higher than budget hotels for reputation for quality. The pattern of results is the same for value for money and prestige. The results support H2a and H2c; while H2b was not supported.

Results in Table 4 show that in general the level of customer value as seen by managers is higher than that customers report they are experiencing. The managers' score was approximately 5.76 out of 7; whereas, the customer score was about 4.90 on the same scale the differences were significant. The differences for reputation for quality (H3a) were significant, for value for money (H3b) and for prestige (H3c) were significant. These results show that in general managers are likely to overstate the level of customer value delivered by their hotels while custom-

ers are likely to under estimate the customer value they experience or both phenomena are occurring simultaneously.

Table 5 shows that for budget hotels the managers had much higher scores than customers for customer value across all the hotel classifications. For reputation for quality, the differences were significant and the differences were largest for standard hotels. For value for money, similar differences were found and the largest difference was in the standard hotels. The same findings apply for prestige. This indicates that all hypotheses arising proposition were significantly different. The findings vary from our expectations for value for money. The results show that for both budget and standard hotels value for money was seen by managers as the best customer value while for prime hotels it was reputation for quality. Across all classifications prestige was seen by management as the least important dimension of customer value. This was also consistent with the results for customers. Prestige was scored lowest. The differences were significant. The differences between managers and customers were significant for reputation for quality across all classes of hotels. Value for money was significantly different between managers and customers across all hotel classification. There is a clear indication that customers thought budget hotels were exactly what they expected. On the other hand managers



thought although they were running budget hotels, they were providing customers with more value than customers were paying for. From their perspectives, these customers can be seen as more demanding relative to what they were paying.

For managers of standard hotels, the average of customer value was 5.83 out of 7 and for customers it was almost 5 out of 7 and the differences were all significant ( $p < 0.001$ ). These results lead to the acceptance of H4b. The gap between management perceptions and customer-received value is narrower for budget hotels, managers still over-estimate the value they deliver and customers perceive they are receiving less than the promise. The biggest difference is on value for money. Managers believe they are delivering as promised and customers experience this as being less value than they are paying for.

For prime hotels, managers scores average about 6.33 out of 7 while those for customers average 5.09 out of 7. Relative to standard hotels this is much wider difference between managers and customers. The differences between managers and customers across the three value measures are significant. This supports H4c. Managers think they are delivering superior value and customers in general agreeing they are receiving superior value relative to customers in lower classified hotels. However, customers perceive significantly

less value for what they are paying. There is an indication of less satisfaction with the value received as is shown by the greatest difference occurring for value for money. The results clearly suggest there is a closer alignment between value delivery and value experienced in standard hotels. The differences are much wider in premium hotels followed by budget hotels. In all cases, probably, as expected managers believe they are delivering higher customer value than customers say they are actually experiencing.

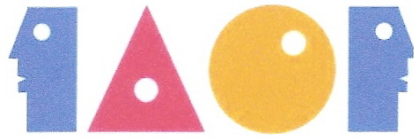
There are several reasons for the differences between management and customers. The delivery of service is usually not the direct responsibility of managers. They set the performance standards, and supervise the staff to achieve these targets but there is always a difference between planned and delivered service. Ideally one would like to involve the employees in the evaluation of customer value delivered but this is problematic for several reasons. The second source of differences could arise from promotional efforts of hotels. Again promotion is usually carried out by an advertising agency and not necessarily consistent with management expectations. Third, managers can genuinely believe they are delivering superior customer value relative to what the customers are paying. These results suggest that hotelier may benefit from research that increases knowledge about customers, their needs and their expectations. Finally, as noted by Slater



(1997) customers are increasingly more demanding and expect superior customer value at ever lower prices. This is a result

#### References

- Cadotte, E.R., Turgeon, N., (1988). Key factors in guest satisfaction. *Cornell Hotel and Restaurant Administration Quarterly* 28 (4), 44–51.
- Choi, T.Y., Chu, R., (2001). Determinants of hotel guests's satisfaction and repeat patronage in the Hong Kong Hotel Industry. *International Journal of Hospitality Management* 20 (3), 277–297.
- Coyle, M.P., Dale, B.G., (1993). Quality in the hospitality industry: a study. *International Journal of Hospitality Management* 12 (2), 141–153.
- Fornell, C., Larcker, D.F., (1981). Evaluating structural equation models with unobservable variable and measurement error. *Journal of Marketing Research* 18 (1), 39–50.
- Gowan, M., Seymour, J., Ibarreche, S., Lackey, C., (2001). Service quality in a public agency: same expectations but different perceptions by employees, managers, and customers. *Journal of Quality Management* 6 (2), 275–291.
- Liu, A.H., Leach, M.P., Bernhardt, K.L., (2005). Examining customer value perceptions of organizational buyers of the high competition among hotelier and the availability of alternatives. when sourcing from multiple vendors. *Journal of Business Research* 58 (5), 559–568.
- Petrick, J.F., (2002). Development of a multi-dimensional scale for measuring the perceived value a service. *Journal of Leisure Research* 34 (2), 119–134.
- Sanchez, J., Callarisa, L., Rodriguez, R.M., Moliner, M.A., (2005). Perceived value of the purchase of a tourism product. *Tourism Management* 27 (3), 394–409.
- Shoemaker, S., Lewis, R.C., (1999). Customer loyalty: the future of hospitality marketing. *International Journal of Hospitality Management* 18 (4), 345–370.
- Spiteri, J.M., Dion, P.A., (2004). Customer value, overall satisfaction, end-user loyalty, and market performance in detail intensive industries. *Industrial Marketing Management* 33 (8), 675–687.
- Tsang, N., Qu, H., (2000). Service quality in China's hotel industry: a perspective from tourists and hotel managers. *International Journal of Contemporary Hospitality Management* 12 (5), 316–326.



## OPTIMIZATION MODEL OF THE APPLICATION OF SHARIA PRINCIPLES IN ISLAMIC BANKS IN CENTRAL JAVA PROVINCE

Ibnu Khajar, Imam Munadjat  
Faculty Of Economics, Unissula, Semarang, Indonesia

### Abstract

This research is aimed at identifying the application of Sharia principles in Islamic Banks in Central Java and the effects on the Islamic banks performance and the employees' welfare. The research respondents were the employees of Islamic banks in four cities, as many as 180 respondents. The data were collected by using questionnaires and interviews. The data analysis used partial least square (PLS) and SPSS for windows 12.00 version as well.

The results showed that the application of Sharia principles affected the performance of Islamic Banks in Central Java. The better the application of Sharia principles in Islamic Banks in Central Java, the better the performance of Islamic banks in Central Java would be. The improved performance of Islamic Banks in Central Java affected the employees' welfare to be positive and significant. The Islamic Banks' performance gave impact on employment availability.

Key words: Islamic Banks, Sharia Principles, Islamic Bank Performance, Employees' Welfare.

### Introduction

Since the operation of Islamic Banking institutions in Indonesia (1992), in Central Java, there have been several Islamic banks operating, either Sharia Commercial Bank (BUS), Sharia Business Unit (UUS), or Sharia Financing Citizenry Bank (BPRS). In the last four years (2006-2009), Islamic Bank assets in Central Java had an average growth of 49.98%. Meanwhile, the financing and DPK

had an average growth of 49.88% respectively. The relatively high growth of Sharia Banking performance indicators in Central Java resulted from the expansion of the Sharia banking business areas. It was initiated by the opening of branch offices of new Islamic Banks in some areas. In 2006 in Central Java, there were 26 branches of Sharia Banks. In 2011, the branch offices of Sharia Banks increased to 43 branch offices.

The increasing number of these offices has a positive influence on the Financing to Deposit Ratio (FDR) which increases up to 109.97%. The increasing FDR is also balanced with an increase in the quality of financing provided by the Sharia Banks in Central Java. This is reflected in the decline of Non Performing Financing (NPF) level, where in 2011, NPF Islamic Bank was noted at 2.72%. Based on the Sharia Banking development data, in Central Java (2011), the potential development of Sharia Banking in Central Java was wide open. It is expected that there will be a growing number of alternative options of banking products offered to people according to the needs of society and its benefits.

The intermediation function of Islamic Bank as a manifestation of the Bank's performance, especially in third-party funding and funds distribution, determines the success criteria of Islamic Bank function as an intermediary institution. Islamic Bank as the public funds collector and the funds distributor is expected to be one of the means to achieve welfare of the community. In accordance with these functions, Islamic Bank is expected to be able to deliver the achievement of public welfare (Falah), holistic welfare, temporal and hereafter welfare. Before the Islamic Bank performs its function as a carrier of public welfare, in accordance with Islamic concept, the Islamic Bank should in advance pay attention to the welfare of the bank employees as its "environment community". The efforts in achieving welfare of the Islamic Banks "closest group"

should also affect the comfort of the employees/staffs in the environment.

The implementation of Sharia principles refers to a contract / agreement / transaction conducted between Islamic Bank with customers in accordance with the provisions of Bill No. 10 year 1998 article 1, paragraph 13 (UU, No.10,1998). Bill No. 21 Year 2008 Article 1, paragraph 12 states that Sharia principle refers to Islamic law principles in banking activities in accordance with the decree (fatwa) issued by institution which has an authority in setting the fatwa in the field of Sharia. Article 1, paragraph 13 of Bill No. 21 Year 2008 states that "Contract is a written agreement between Sharia Bank or UUS and other parties that contains rights and obligations of each in accordance with Sharia principles" (UU, No.21,2008).

The compilation of Sharia Economic Law (2008, book II on Contract) Section I Article 20 paragraph 1, states that contract is an agreement in a pact between two or more parties to conduct or not to conduct certain legal actions. (Media Editor Team, 2008: 14). Article 28 in the Compilation of Sharia Economic Law (2008) states that; legitimate contract is an agreement which meets its pillars and terms. The Compilation of Sharia Economic Law (2008) Article 22 states that the pillars and the terms of the contract consist of: Parties involved in the contract, contract Object, principal aim of the contract, and Agreement, (Media Editor Team, 2008: 19). The comprehensive and consistent implementation of Sharia principles (Kaffah and Is-

tiqomah) conducted by the Islamic Banks in Central Java is expected to have an impact on the bank's performance and employee's welfare. The effects of Sharia principles implementation on the bank's performance are identified through the development of third-party funds collection and funds distribution for a certain period of time. The effects of Sharia principles implementation on the employees' welfare refer to the concept of 'welfare' according to Islamic teachings which include holistic welfare, balanced covering material and spiritual dimensions. The welfare is viewed through the concept of maq'asid syari'ah welfare or the goals of Islamic law that guarantee the fulfillment of welfare which can be implemented or fulfilled in needs covering religion (al-din), wealth (al maal), intellect (al'aql), and heredity (al nasl) and soul (al-nafs). Besides, it will also be seen dealing with influence of the bank's performance on the employees' welfare and the effect of the bank's performance on the employment of Islamic Banks in in Central Java.

The problem in this research deals with the implementation of Sharia Islamic Banks in Central Java province is still not optimum yet. Specifically, the research questions are whether the Islamic Banks (Central Java) in their operations adhere to the provisions of Islamic Law or Sharia principles, whether the implementation of Sharia principles gives influence on the Banks' performance, whether the implementation of Sharia principles influences the employees' welfare, and whether the Islamic Banks' perform-

ance gives any effects on employees' recruitment.

## Literature Review

### *The Principle Of Sharia Bank*

Sharia Economy which is arranged on Islamic values and as the basis / foundation of economic activities to achieve public welfare spiritually and bodily will only have a meaning if it is realized in a real activity in the community. In this strategic position, Sharia Bank can be an agent of economic development. This is because the main task of bankings in economic infrastructure of macro-economic policy is directed in the context of how to make money effective and efficient to increase economic value (Muhammad, 2005).

Since Islamic Bank is a 'part' of the Islamic Economy, the philosophy of Islamic Bank establishment should be based on the basic philosophy of Islamic Economy. The philosophy of Islamic Economy (Syibly, in Nur Khalis, 2008: 27) gives a fruitful thought about economy with Islamic values and Sharia restrictions. Islamic Economy as a science seeks to look at, review, investigate and resolve the economic problems in Islamic ways (in the corridor and guidance of Islamic Law). Mahmud M Babali set out five principles of Islamic values regarding with Islamic economic activities, of which are fraternity (ukhuwah), good-deeds (al-Ihsan), giving advice (al nasihah), firm establishment (al Istiqomah), and the attitude of taqwa (al Taqwa) (Kara, 2005: 38). Several Is-

Islamic values underlying the philosophy of Islamic economy among others are: the principles of consensus (at taraadi), fairness (al is), mutual benefits (al tarabukhi) and mutual helps (mutual aid) and the prohibition of blackmailing and exploitation.

*The Differences of Sharia and Conventional Bank*

There is a fundamental difference between Islamic Bank and Conventional Bank especially relating to aspects of products and systems used.

The orientation of Conventional Bank as an inseparable part is to maximize the welfare (read: profits) of the bank owner (Shareholder-Oriented). Meanwhile, the orientation of Islamic Bank is in the interests of prosperity and welfare of stakeholders and society in general (stakeholders and society-oriented) as a manifestation of the principle of Rahmatan lil 'Alamin in Sharia Bank, see details Table 1.

Table 1. The Principle Differences Between Sharia Bank And Conventional Bank In Their Operational Activities

Sharia Bank	Conventional Bank
<p>1. Bank Products</p> <p>A. Sources of Funds</p> <p>a. <i>Wadi'ah Yad Dhamanah</i> clearings</p> <p>b. <i>Yad Dhamanah and Mudharabah</i> Savings</p> <p>c. <i>Mudharabah</i> deposits</p> <p>d. <i>Mudharabah muqayyadah</i> Special Savings (Restricted Investment)</p> <p>B. <i>Zakat, Infaq, Sadaqah</i></p> <p>C. Disbursement And Banking Services</p> <p>1. <i>Mudaraba</i> Financing</p> <p>2. <i>Musharaka</i> Financing</p> <p>3. Export Financing (<i>Mudaraba, Musharaka or Murabaha</i>)</p> <p>4. Inclusion (<i>Musharaka</i>)</p>	<p>1. Bank Products</p> <p>A. Sources of Funds</p> <p>1. Clearings</p> <p>2. Savings</p> <p>3. Deposits</p> <p>4. Certificates of Deposits</p> <p>B. Disbursement and Banking Services</p> <p>1. Valuable letters</p> <p>2. Loans in Rupiah</p> <p>3. Loans in Foreign Currency</p> <p>4. Assets in Foreign Currency</p> <p>5. Inclusion</p>

<p>D. Purchasing</p> <ol style="list-style-type: none"> <li>1. <i>Murabahah</i> financing (for investment)</li> <li>2. <i>Bai 'Bishaman Ajil</i> (for investment in instalment)</li> <li>3. <i>Bai'us-salam</i> (for agriculture)</li> <li>4. <i>Istishna</i> '(ordered items purchasing)</li> <li>5. Banking Services</li> <li>6. <i>Hawalah</i> (Factoring)</li> <li>7. L / C (<i>Wakalah, Musharaka, Murabaha</i>)</li> <li><i>Sharf</i> (Sale and Purchase of Foreign Currency)</li> <li>8. <i>Kafalah</i> (Bank Guarantee)</li> <li>9. <i>Ijarah Muntahiyah bit Tamlik</i> (Financial Lease / Hire Purchasing)</li> <li>10 <i>Rahn</i> (Pawn)</li> <li>11. <i>Wadi'ah Yad Al 'Amanah</i> (Safe Deposit Box)</li> <li>12. Collection (<i>Hawalah</i>)</li> <li>13. Transfer (<i>Kafalah</i>)</li> <li>14. <i>Al-Qardhul Hasan</i> (Social Loan / Virtue)</li> </ol> <p>2. Sharing System</p> <ol style="list-style-type: none"> <li>1. Determination of the profit sharing ratio is made at the time of the contract in accordance with possibility of profit / loss to be obtained</li> <li>2. If the customer fails to pay overdue effort and no fines or other liabilities.</li> </ol> <p>At the time of economic crisis, the profit</p>	<ol style="list-style-type: none"> <li>6. L / C</li> <li>7. Bank Guarantee</li> <li>8. Factoring</li> </ol> <p>C. Banking Services</p> <ol style="list-style-type: none"> <li>1. Collection</li> <li>2. Transfer</li> <li>3. Safe Deposit Box</li> </ol> <p>2. Interest System</p> <ol style="list-style-type: none"> <li>1. Determination of the interest rate at the time the contract was made without looking at the possibility of profit / loss to be obtained</li> <li>2. If the Customer fails in businesses and is late in payment, they will get interest</li> </ol>
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sharing ratio in accordance with the ability of customers at the time revenue	finances and possible bail confiscation
<p>3. In Islamic banks, in economic / monetary crisis, there will not be negative spread happening.</p> <p>4. Harmonising relationships between funders and users of funds through a mutually beneficial "partnership".</p>	<p>3. At the time of economic / monetary crisis, interest rates will rise thereby increasing overhead cost (interest cost), while income decrease.</p> <p>Contradictory relationship between the bank and its customers: To deposit funds, it is requested high interest but the bank is on the other side. Similarly, the bank asks for high interest to the debtor, the customers do not, instead.</p>

Source : Hardini, 2007 : 122 (Sharia Banking Dictionary)

### Previous Studies

Mooduto (2006) - Based on the results of his hypothesis testing research on the Effect of Sharia Implementation on Islamic Banks' Performance and Security in Indonesia, he concluded that:

1. The implementation of Sharia principles which gave significant effects on the performance of Islamic Bank was received. The meaning of such evidence is that the better, correct and consistent (*istiqomah*) implementation of Islamic Sharia in Islamic Bank operations will provide

a significant effect on the positive performance of Islamic Banks.

2. The implementation of Islamic Sharia influenced the resilience of banks significantly, but it had no significant effect.

3. The performance of Islamic Bank significantly influenced the resilience of the Islamic bank was accepted.

Mohammad Suyanto (2007) - His research was about the influence of the implementation of Sharia principles on the performance and welfare of the employees and



community related with Sharia Banks' activities in Indonesia. He concluded that:

1. The implementation of Sharia Bank principles in Indonesia is getting better and consistent and sustainable impact turns out to higher profitability and greater solvency as well as more useful for small entrepreneurs who become customers of Sharia Bank.
2. The implementation of Shariah principles on Sharia Bank in Indonesia is getting better and consistent and continuous does not affect the increase in the portion of financing and that of *qordhul hasan*.
3. The implementation of Sharia principles on Sharia Bank in Indonesia is getting better and consistent and sustainable and does not affect an increase in salaries and bonuses of employees and that in the employees' general and religious allowance as well. The better bank performance has also impacted on increased financing and increased *qardhul hasan* as well as an increase in *zakat*, *infaq*, *shodaqoh* and social activities or contributes to the public welfare related with Sharia Bank's activities in Indonesia.
4. The consistent, continuous and well-applied Sharia principles of Shariah will produce a good and getting better performance, applied to all Sharia Banks in Indonesia.

Haque, Osman, and Ismail (2009) - His research was about Factors Influence Selection of Islamic Banking:

A study on Malaysian Customer Preferences. The purpose of this study is to investigate major factors that are reflecting to customers' perception and satisfaction on Islamic banking. The findings said there were the significant positive relationship of quality of service, availability of services, social and religious perspective and confidence in bank with customers' perception about Islamic bank.

Muhamad Abduh (2011) - His research aims to detect withdrawal risk of depositors Islamic banking through Islamic banking service quality. His findings are as below:

1. The five important dimension in Islamic Banking service namely reliability, bank-customer relationship, tangibles, shari'ah and rate and charges.
2. Depositors have positioned Shari'ah as number one (the most important ) factor that could lead them to withdrawal action if Islamic banking do it (shari'ah issue) wrong.
3. The other important dimensions are tangible and rate and charge.

Abduh, Duasa, and Omar (2011) - His research was about Factors Influence Depositors' Withdrawal Behavior in Islamic Banks: A Theory of Reasoned Action. He concluded that:

1. The techniques in the risk of deposit withdrawal, first is by approaching those people and environment perceived important by depositors.

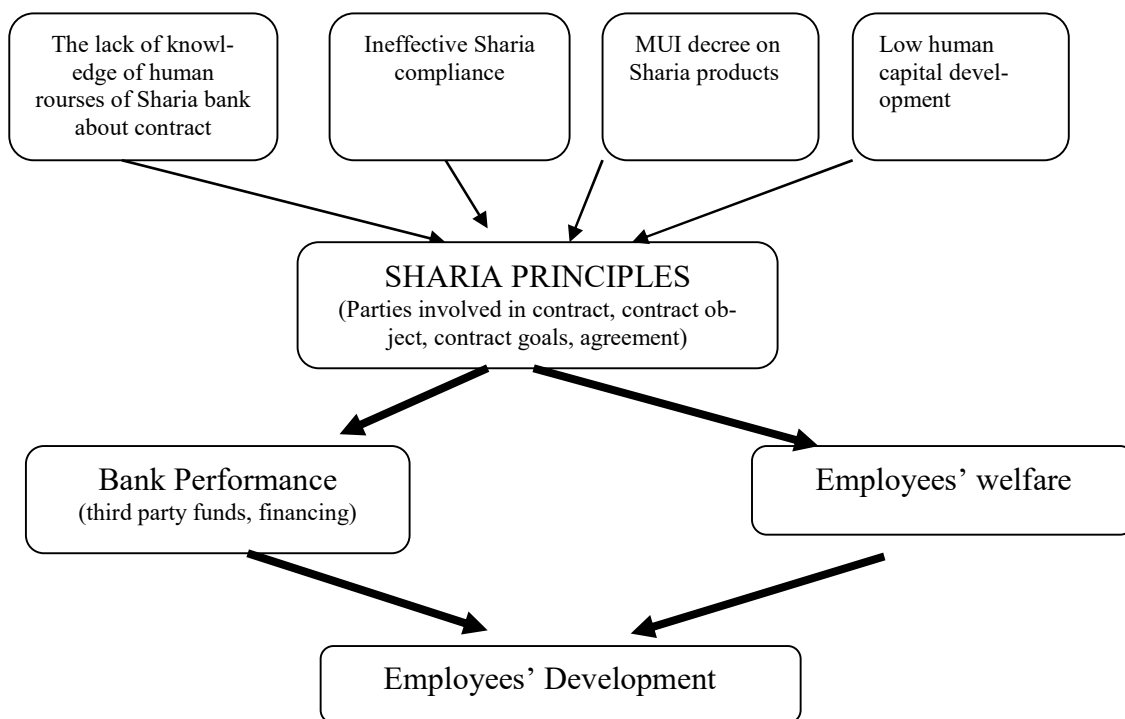
For example, Islamic bank can go to Mosques, schools, universities to meet the Imams, teachers, lecturers, and leaders to explain unique features of islamic banking and why they should remain with the bank.

2. Secondly, Islamic bank must also meet the belief and expectation of the depositors, both spiritually and materially. Islamic banks must not breach shariah principles in terms of profitability and service quality.

Jalil, and Rahman (2014) - His research was about Factors Influence

Depositors' Withdrawal Behavior in Islamic Banks: A Theory of Reasoned Action. He concluded that: That convenience of service, perception of services and ethical organization has positive impact on Islamic banking services. The findings also present that Islamic branding has negative impact and insignificant relationship with Islamic banking service. The findings of the study can facilitate the Islamic banking service providers to introduce innovative service offering in according to Islamic shariah principle.

### Conceptual Framework



## Research Methods

### *Research Design*

The concept of the research conducted is included in the explanatory research with the aim at determining the relationship between variables and hypotheses testing which have been formulated, therefore, the type of research done / been selected is an explanatory (Singarimbun, 1992; 4).

### *Population Sample*

This explanatory study took form of a census of the Islamic Banks in Central Java. The population in this study was branch offices of Islamic Banks in Central Java, which have been operating for 5 years. The number of members of the population was six (6) branches of Islamic Banks. A members of the population were observed. The time series data were taken each year for five (5) years from 2005 to 2009. Thus, there were 30 units of analysis (6 banks x 5 years).

### *Technique of Data Collection*

The data collection was conducted by survey method, making use of secondary data provided in each Islamic Bank which became the subject of study. The secondary data were taken as to look at the implementation of Sharia principles by the bank concerned. The data were taken from the contract as stipulated in the certificate of agreement between the customer and the Islamic Bank in front of a notary. Meanwhile, the secondary data included the bank's performance, em-

ployees' welfare and employees recruitment obtained through a written record of each bank. Interview with employees was done by answering questionnaires in order to obtain additional data on employees' welfare.

### *Variables Research and Indicators*

The variables of this research were the implementation of Sharia principles, the bank performance and other employee benefits and employees recruitment of Islamic Banks in Central Java, and operational definitions as Table 3.

### *The Technique of Data Analysis*

The data analysis used factor analysis and Partial Least Square (PLS) model. The steps of Partial Least Square (PLS) based testing empirical models by using Smart PLS software is as follows:

### *Model Specialization*

The analysis of the relationship between variables path consists of: Outer models, refers to the specification of the relationship between the latent variables and their indicators, which is also called 'outer relations' or 'measurement models', defining the characteristics of the constructs with their manifest variables.

Inner Model refers to the specification of the relationship between the latent variables (structural model), which is also called inner relations, describing the relationship between latent variables based on substantive

research theory. Without losing its generality, it is assumed that the latent variables and indicators or manifest variables scaled zero means and unit variance is equal to one, so that the location parameters (constant parameter) can be removed from the model. Inner models obtained are:

Weight Relation - the estimated value of latent variables cases, inner and outer models provide specifications which are followed in the estimation of PLS algorithm. After that, the definition of weight relations is required. The values for each case estimated in PLS latent variables namely:

$$\xi_b = \sum_k b_k W_k B_k x_k$$

$$\eta_l = \sum_k i_k W_k I_k X_k$$

Where  $W_k B_k$  and  $W_k I_k$  were  $k$  weight used to form the estimated endogenous latent variables ( $\eta$ ) and exogenous ( $\xi$ ). The estimation of the latent variables was an aggregate linear of indicators of which weight values obtained by the estimation procedure of PLS as specified by the inner and outer model where the latent variable endogenous (dependent) is  $\eta$  and latent variable exogenous is  $\xi$  (independent), while  $\zeta$  is a residual and  $\beta$  and  $\gamma$  was the coefficient matrix path (path coefficient).

### *Evaluation Model*

Measurement model or outer model with reflexive indicators is evaluated by convergent and discriminant validity of the indicators and composite reliability to indicators block. Structural model or inner models is evaluated by looking at the per-

centage of variance explained by looking at  $R^2$  to exogenous latent constructs using size Stone Gaiser Q Square test and also see the coefficient of structural lines. The stability of these estimates is evaluated using t-test statistics obtained through bootstrapping procedures. Outer with reflexive indicators measured respectively by the following.

Convergent Validity - is the correlation between the indicator reflexive scores and the latent variable scores. For this, loading of 0.5 to 0.6 is considered fair, because it is the early stage of development of the measurement scale and the number of indicators per construct is not large, ranging from 3 to 7 indicators.

Discriminant Validity - is the measurement of reflexive indicators which is based on cross loading with latent variables. Another method is by comparing the score of square root of Average Variance Extracted (AVE) in each construct, with a correlation between the other CONSTRUCTS in the model. If the scores of the initial measurement of both methods is better than the score of other constructs in the model, it can be concluded that the construct has discriminant validity was good value, and vice versa.

Recommended values must be greater than 0.50.

$$AVE = \frac{\sum \lambda_i^2}{\sum \lambda_i^2 + \sum \text{var}(\epsilon_i)}$$

Composite Reliability - an indicator that measures the internal consistency of indicators forming the constructs, shows the degree of which indicate common latent (unobserved). The acceptable limit value to the level of composite reliability is 0.7 although it is not an absolute standard.

$$pc = \frac{(\sum \lambda)^2}{(\sum \lambda)^2 + \sum \text{var}(\epsilon)}$$

Inner models R-square - was measured using exogenous latent variable with the same interpretation by regression. Q Square predictive relevant was to construct the model, measuring how well the observed values generated by the model and parameter estimation. Q-square value > 0 indicated the model had predictive relevance, otherwise if the Q-square value ≤ 0 indicated lack predictive models relevant. Q-Square Calculations was done by the following formula:

$$Q^2 = 1 - (1 - R_1^2) (1 - R_2^2) \dots (1 - R_p^2)$$

Where (1-R<sub>1</sub><sup>2</sup>) (1-R<sub>2</sub><sup>2</sup>) ..... (1-R<sub>p</sub><sup>2</sup>) R-square was exogenous in the model equations. Assuming the data were distributed freely (free distribution), the structural model of PLS predictive approach was evaluated by R-Square to construct endogenous (dependent), Q-square test was for predictive relevance, t-statistic with a significance level of each path coefficient in the structural model.

## Research Findings

### *The Implementation Of Sharia Principles*

The parties involved in the contract / the contract subjects.

The parties involved in the contract in Fiqih Mu'amalah term are called aqid / aqidain. According to the term, a person can carry out the contract if the person concerned has the ability to act / legal capacity (ahliyah ada' al kamilah) and has the authority (region) to carry out the contract. The authority may in this case be authorized to act for themselves for the family, for / on behalf of or representing the group, for / on behalf of the company and for others. In this study, the subject of the contract would be monitored through the customer side as indicated on the certificate of agreement between the client and the Islamic Bank side.

Related to Legal Capacity.

Chapter II on law subjects, Article 2 of the Compilation of Sharia Economic Law states that someone who is considered to have skills to take legal actions in the case must have reached the lowest age of 18 (eighteen) years or happen to be married. On the legal capacity of the contract subjects are based on age group and all customers' authority to act as competent and appropriate subjects (100%). In relation to customers' authority, all customers have the authority to act (100%).

The Contract Object.

Dealing with the presence of the contract object, among 210 contract certificates at the Islamic Banks in Central Java, the following data were obtained: the contract object ex-

isted and could soon be realized 80%. There was one with a process involving a third party at 6.67%, one with uncomplicated process at 13.33%.

**TABLE 2**  
**VARIABLES AND INDICATORS**

<b>NO</b>	<b>Variable</b>	<b>Indicator</b>
1	X <sub>1</sub> = the implementation of Sharia principles	X <sub>1.1</sub> = the Parties involved in the contract X <sub>1.2</sub> = the Contract Object X <sub>1.3</sub> = the Contract Goal X <sub>1.4</sub> = the Agreement
2	Y <sub>1</sub> = the Islamic Bank Performnace	Y <sub>1.1</sub> = the third party funds Y <sub>1.2</sub> = Financing
3	Y <sub>2</sub> = the Employees' Welfare	Y <sub>2.1</sub> = Al Diin Y <sub>2.2</sub> = Al Nafs Y <sub>2.3</sub> = Al 'Aqal Y <sub>2.4</sub> = Al Maal Y <sub>2.5</sub> = Al Nasl
4	Y <sub>3</sub> = the Employees' Recruitment	Y <sub>3.1</sub> = the number of active employees

The Contract Goal.

The Contract goal / maudlu 'al 'akad is very clearly mentioned. A total of 36.67% of the contract specified the contract was personal /self-business ownership, 46.67% was to develop joint venture, 16.67% was for the development of self-business ownership.

The Deal/Agreement.

Related to the deal / sighat akad which is basically an agreement between the two parties on whether or not the agreement is fulfilled, the used indicators are three pillars of the previous contract; the aqidain, the contract object and the contract goal. In this study, for the three pillars of the contract agreement was fulfilled (100%)

Islamic Bank Performance , Third-party funds.

The Islamic Bank' performance in Central Java, especially in third party funds, during the period of 2005 - 2009 has shown a positive trend with the increasing target of third party funds each year. Even more, half of the Islamic Banks in Central Java (50%) showed a great increase of Third Party Funds during the period 2005-2009.

Financing.

Related to financing development during the period of 2005 – 2009, the

Islamic Banks in Central Java also showed a positive trend, because every year there has been an increasing target in each Islamic Bank. The average / mean of the Islamic Banks' performance in Central Java with those two indicators mentioned above was 4 (four) so that it can be categorized as an increase of the Islamic Banks' performance in Central Java during the period of 2005-2009.

Employees' welfare.

Islam teaches that happiness (Falah) is a feeling of joy with dual dimension, of which are the world and hereafter sides. Happiness is the essence of Islamic teachings goal known as "maqashid Shari'ah". In line with maqashid syari'ah, when the Islamic Bank employees were raised various questions about asiyah al khomsah, obtained the following replies:

Keeping the faith / hifdzu al deen.

Which is the presence or acquisition of a sense of security because of being able to perform the Islamic duties.

Standing up with religion is a necessity for human beings. By implementing human values taught in religion makes man higher than animals in rank.

Having religion is a human characteristic.

The average score of the answers about keeping religion in this study was obtained a value of 4.6 (Table 5:17). Thus, if the value of 4.6 were for the indicator of keeping religion of Islamic Bank into interval class of Islamic Banks in Central Java, it would give attention to the very high criteria.

Related to the life protection (khifdzu al nafs) conducted by Islamic Banks in Central Java because it actually starts from the assumption that religion can not be upright unless with a healthy soul and in a healthy body as well.

Therefore to keep the soul healthy and grow in a healthy body as well (besides a healthy soul is a means towards the right to live in dignity), Islamic Banks forbade their employees to smoke in the working environment and provided a threat to firmly take actions on employees who were caught drinking alcohol. In connection with these matters, the employees of the Islamic Banks in Central Java:

did not smoke because according to 67% of employees of the Islamic Banks in Central Java, smoking was forbidden (haram), while the remaining 33% said that smoking was avoided (makruh) did not drink alcohol, because all employees of the Islamic Banks (100%) said that liquor was forbidden (haram). 33% of employees agreed that their religious activities and discourse were as a means to love the God. The rest 67% of em-



employees stated that following such activities organized by the Islamic Banks was just to get some inner peace 67% of employees said that the Islamic Banks provided funds to maintain the employees' mental and physical health in terms of medical aspects, meanwhile the remaining 33% say that the Islamic Banks would replace the full expense of health funds.

Overall with these four variables in keeping this spirit was obtained an average / mean of 4.25. If the score were inserted into the interval class, it would then be obtained very high criteria.

To protect or maintain sense (khifzdu al-akal), Sharia forbids intoxicants with the aim at avoiding sense damage. The sense damage will result in the sense owner is not valued in society due to being unable to perform their duties and functions as a good human being. The strict prevention ordered by Islamic law is intended to improve the brain capabilities and to keep the sense out of the things that harm.

According to the employees of the Islamic Banks: 67% of them said that the Islamic Banks strictly prohibited their employees drinking alcohol, meanwhile 33% of them said that the Islamic Banks forbade them drinking alcohol.

It went also to gambling, 67% of employees believed that the Islamic Banks strictly prohibited their employees gambling. The remaining 33% said that the Islamic Banks forbade their employees to gamble. The prohibition of intoxicants and gambling was so addressed

that the sense would not be blocked from the guidance of Allah swt (100%). Therefore, 67% of the employees of the Islamic Banks always attended religious discourse and the remaining 33% read religious books.

In order that the employees of Islamic Banks always think and act positively, and are really far away from gambling and things that can be intoxicating, according to 50% of bank the Islamic Banks employees, it would happen if there were an awareness not to consume things that are intoxicating and away from gambling, the rest 50 % said it would happen if Islamic Banks threatened to take stern action against employees who got drunk and gambled.

Overall, the answer of the Islamic Banks' employees in Central Java on maintaining mind and sense was obtained an average score / mean 4.5 and if the average were put into the interval grade, it would then be obtained very high criteria.

The fourth objective of Sharia / maqashid Shari'ah is to maintain or provide protection to offsprings / khifdu al nasl. In the case of giving protection to the offsprings / the employees' relatives, Islamic Banks in Central Java argued that marriage is ordered by religion to maintain offspring, 67% of employees stated their true confirmation of the order and the remaining 33% expressed it as the right way to keep their offspring. according to the Islamic banks' employees in Central Java (with the same percentage) said that Islamic banks are very concerned with the family income of

employees (67%) and the rest 33% said to care about.

With that reality, according to 33% of the Islamic Banks' employees, Islamic banks were very concerned about the education of the employees' children and the remaining 67% said that Islamic Banks paid attention to the education of the employees' children.

For 50% of the employees stated that the Islamic Banks were very concerned about the employees' children's future, 17% of employees said the actions means that Islamic Banks paid attention to the future of the employees' children and according to 33% of the remaining employees Islamic Banks paid sufficient attention the future of the employees' children.

Overall the answer of the Islamic Banks' employees in Central Java concerning the protection of the Islamic Banks' employees' offspring was obtained values with an average score / mean of 4.25 and when the average score was added to the interval class, it would then be obtained a category / the criteria is very high.

The fifth Maqashid Shari'ah is the maintenance or protection of property (khifdu al maal). In relation to this wealth protection, the Islamic Banks' employees argued that Islam obliges Muslims to work. In connection with the efforts to maintain the property (Hifzhul maal), the Islamic Banks employees in Central Java stated that Bank Islamic Banks strongly encouraged their employees to work hard to prepare better future generations (67%) and the remaining 33% said to encourage. With the same percentage,

they stated that the wealth they gained from working was the God's surrogate which temporarily entrusted to them.

With the same percentage, they said that the Islamic Banks greatly appreciated their employees who worked hard by providing rewards to them. With the same percentage, they also said that the Islamic Banks reminded them that the profits from their hard work or effort authorized by the God to them, there were other people's rights that should be given to those deserved.

Overall a more complete answer on the fifth maqashid shari'ah with an average score of 4 and when the average score was inserted into the interval class, it would then be obtained high criteria or category.

The Employees' Recruitment.

This variable has one indicator that is the worker amount in the islamic banking. Trend of the number of active employees amount looks increase but rather stable from 2005 till 2009. This data means that turn over of employment islamic banking is low. Interpretation of this finding is the worker feel satisfaction in the islamic banking.

#### PLS Analysis Results

Outer Models' Result.

The Measurement model with reflective indicators was evaluated by convergent and composite reliability for the block indicator. The convergent validity of the measurement model with reflective indicators was assessed based on the correlation between the item score and the construct score which were

calculated by PLS. The indicators were considered valid if the value of the loading factor were greater than 0.5 or the t statistic was greater than tTable value was 1.6711 ( $\alpha = 5\%$ ). The indicators of Islamic leadership was composed of contract 1 (X1.1), contract 2 (X1.2), contract 3 (X1.3), contract 4 (X1.4), fair (x1.5). More results are shown in Table Based on the Table 3 the result of convergent validity test, four indicators of the contract had loading factor scores. All indicators were more than 0.5 and the  $T_{\text{statistic}}$  score of the entire indicators was greater than  $T_{\text{Table}}$  at 1,697, so that the entire indicators of the Islamic leadership were valid. The composite reliability test of the block indicator which measures the construct, it showed satisfactory results in the amount of 0.856, meaning that the contract construct would result relatively similar when repeated measurements were taken in the same subjects.

The test results of convergent construct validity and reliability of composite performance is shown in Table 4. Based on the table 4 the test results of convergent validity, two indicators of performance had loading factor scores. All indicators were more than 0.5 and the  $T_{\text{statistic}}$  score of all indicators was greater than 1.697, so that all the indicators of the contract were valid.

Based on the composite reliability test of the block indicators that measures the construct, it showed satisfactory results in the amount of 0.957, meaning that the performance construct could provide relatively similar results when repeated measurements was conducted

in the same test. The test results of the convergent validity and reliability composite of welfare level construct are shown in Table 5.

Based on the Table 5 the test results of the convergent validity were, five indicators of the welfare had loading factor scores and all indicators have more than 0.5 and the t statistic score of all indicators was greater than 1,697, so that all indicators of welfare level indicators were valid. Based on the composite reliability test of the block indicators that measures the construct, it showed satisfactory results in the amount of 0.916, meaning that the construct of the welfare level could provide relatively similar results when repeated measurements were conducted in the same subjects.

The test results of the convergent validity and reliability composite of the employees' recruitment construct are shown in Table 6. Based on the Table 6 the test results of the convergent validity were, one indicators of the welfare had loading factor scores one (1.000) and more than 0.5 so that this indicators of employee was valid.

**Table 3**  
**The Result of Validity and Reliability Test of Contract Variables Indicators**

Indicators	Validity Test			Composite Reliability
	Loading	T-Statistic	Note	
AK 1	0.794	14.996	valid	0.856
AK 2	0.797	14.263	valid	
AK 3	0.824	5.572	Valid	
AK 4	0.671	4.668	Valid	

**Table 4**  
**The Test Result of Validity and Reliability of Performance Variables Indicators**

Indicators	Validity Test			Composite Reliability
	Loading	T-Statistic	Note	
KIN 1	0.961	67.203	Valid	0.957

Based on the composite reliability test of the block indicators that measures the construct, it showed satisfactory results in the amount of 1.000, meaning that the construct of the welfare level could provide relatively similar results when repeated measurements were conducted in the same subjects. The results of inner model (structural model).

The inner model describes the relationship among latent variables based on a substantive theory. The result of bootstrapping output display is in the form of a graphic of the relationship among variables which is shown in Figure 1. Based

on the Figure 1, it can be seen the path coefficients of each variable relationship, either directly or indirectly. The influence of the contract on the performance had a path coefficient of 0.579. The direct effect of the contract on welfare had a path coefficient of 0.236. The direct effect of the performance on the welfare had a path coefficient of 0.714.

The indirect effect of the contract on the welfare level through performance was  $0.579 \times 0.714 = 0.413$ . It could be concluded that the direct effect of the contract on the welfare level was smaller than the indirect effect of the

**Table 5. The Test Result of Validity and Reliability of Welfare Level Variable Indicators**

Indicators	Validity Test			Composite Reliability
	Loading	T-Statistic	Note	
KK 1	0.903	42.012	Valid	0.916
KK 2	0.679	7.755	Valid	
KK 3	0.882	28.845	Valid	
KK 4	0.752	12.372	Valid	
KK 5	0.909	51.340	Valid	

**Table 6. The Test Result of Validity and Reliability of Employee's Recruitment Variable Indicators**

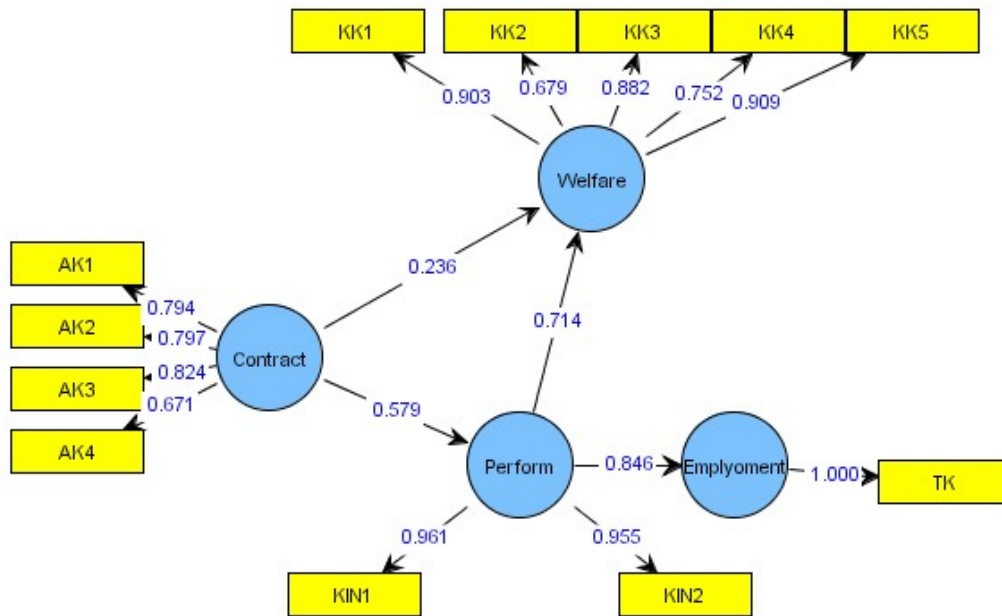
Indicators	Validity Test			Composite Reliability
	Loading	T-Statistic	Note	
<b>TK</b>	<b>1.000</b>	<b>-</b>	<b>Valid</b>	<b>1.000</b>

**Table 7. Hypothesis Testing Results**

Hypothesis	Among Variables Influence	Estimate Coefficient	t -Statistic	Decision
1	Contract > Performance	0.569	7.311	Significant
2	Performance > Welfare	0.714	12.753	Significant
3	Performance > Employment	0.846	35.464	Significant
4	Contract > Welfare	0.236	3.191	Significant

Source: Processed Data

Note:  $t(0,05, 30) = 1.697$



**FIGURE 1 – Full Model**

contract on the welfare level through performance. The conclusion is there is not direct effect between the contract and the welfare and there is indirect effect the contract to the welfare.

The calculation result of r square score showed that the r square performance scores were 0.335, meaning that 33.5% of the performance variation could be explained by the contract variation, and 66.5% were described by other variables which were not included in the model. The r square scores of welfare level were 0.76 meaning that 76% of the welfare variation could be explained by the performance variation, and 24.5% were described by other variables which were not included in the model. The r square scores of the employee level were 0.716 meaning that 71.6% of the welfare employee could be explained by the performance

variation, and 28.4% were described by other variables which were not included in the model.

#### Hypothesis Testing Results

The hypothesis testing result of the relationship the variables is shown in Table 7. Based on the calculation results of pls testing in Table 7 which examined the first hypothesis, which was the effect of the contract on performance, it was obtained tstatistik score at 7.311 and 1.697 ttable. Meanwhile, the score of the estimated coefficient ( $\beta$ ) was 0.569. So it could be concluded that there was a significant positive effect of the contract variable on the performance, meaning that the better the contract was, the better the performance would be. In other words, the higher the implementation of the contract, the better result it would be, giving a very positive impact on per-

formance. Thus, the first hypothesis was proven and accepted. The second hypothesis which was the effect of performance on the welfare level it was obtained tstatistik score at 12.753 and 1.697 table. Meanwhile, the score of the estimated coefficient ( $\beta$ ) was 0.714. So it could be concluded that there was a significant positive effect of the performance variable on the welfare level, meaning that the better performance was, the better the welfare level would be. Thus, the second hypothesis was proven and accepted. The third hypothesis, which was the effect of performance on the employee's recruitment level, it was obtained tstatistik score at 35.464 and 1.697 ttable. Meanwhile, the score of the estimated coefficient ( $\beta$ ) was 0.846. So it could be concluded that there was a significant positive effect of the performance variable on the employment, meaning that the better performance was, the better the employment would be. Thus, the fifth hypothesis was proven and accepted.

The fifth hypothesis, which was the effect of the contract on the welfare level, it was obtained tstatistik score at 3.191 and 1.697 ttable. Meanwhile, the score of the estimated coefficient ( $\beta$ ) was 0.236. So it could be concluded that there was a significant positive effect of the performance variable on the welfare level. In other words, the better the implementation of the contract was, it would give a very positive impact on welfare level. Thus, the fifth hypothesis was proven and accepted.

## Conclusions and suggestions

### *Conclusion*

The implementation of sharia principles influences the performance of the islamic banks in central java. The better the implementation of sharia principles in the islamic banks in central java is, the better the performance of the islamic banks in central java will be. The better the implementation of sharia principles with indicator of the better contract implementation, the healthier investment will result on its own. That is why, the banks with small sharing principle will likely to suffer a financial loss. This finding is accordant abduh (2011) and abduh, duasa, and omar (2011). By the implementation of better contract will result in healthy investment. The healthy investment will bring a healthy performance. The implementation of sharia principles influences the welfare of the islamic banks' employees in central java. This finding is accordant suyanto (2007). It can be concluded that there is a positive influence of the sharia implementation on the employees' welfare as proven in the previous hypothesis testing result, which shows that the better implementation of the islamic sharia principles will be a positive influence on the the islamic banks' employees' performance. The good performance influences the employees' welfare. Therefore, a good performance will provide a good welfare anyway.

The influence of islamic banks' performance in central java on the employees' welfare is very positive. Healthy investment which has a positive influence on the performance of islamic banks in central java, will lead to a positive influence on the employees' welfare. The good performance will result in good sharing profit in islamic banks as



well. The islamic banks' performance gives effects on employment which can be concluded that there is a positive influence between the performance and the employment. Theoretically, it is understood that started from healthy investment yield for healthy sharing results, which reflects good performance. (the good performance has a positive influence on the employees' welfare). The employees' welfare causes a positive effect on employment because of feeling of safety and comfort perceived by the employees.

The influence of islamic banks' performance in central java on the employee's recruitmant is very positive. Healthy investment which has a positive influence on the performance of islamic banks in central java, will lead to a positive influence on the employee's recruitmant. The good performance will result in good sharing profit in islamic banks as well. The islamic banks' performance gives effects on employment which can be concluded that there is a positive influence between the performance and the employment. Theoretically, it is understood that started from healthy investment yield for healthy sharing results, which reflects good performance. Good performance makes islamic banking to be larger so it will needs more employee so that it makes higher employment.

The islamic banking institutions in central java have implemented the principles / values of sharia in carrying out islamic banking institutions. This is proven by the implementation of the sharia values of in the implementation of the contract / agreement between deposi-

tors as stated in bill no. 10/1989 article 1, paragraph 13 and article 1 paragraph 13 of bill no. 21/2008. The results of this study prove that these provisions have been implemented.

### Suggestion

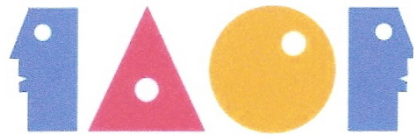
The results of this study indicate that sharia principles have been implemented by the islamic banks in central java and their significant influences on the performance, employees' welfare and employment as linked to the research conducted by m. Suyanto (2007), there is an increase in the welfare of the islamic banks' employees. Because the results of this study indicate something positive for the islamic banks, therefore, this condition should be maintained and increased in the next.

The research results on the influence of sharia implementation on the performance, employees' welfare and employment at the islamic banks in central java show positive symptoms for the education of the islamic world. The well implementations of sharia principles will give a positive influence on the performance, employees' welfare and employment.

As expected, the better role of the islamic banks in national economic development is, it is worth that governments are supposed to increasingly pay attention to the islamic bank as they do it toward conventional banks, particularly in facilitating their comprehensive needs and regulatory requirements of islamic bankings.

## References

- Abduh, Muhamad, 2011. International Journal Of Excellence In Islamic Banking Finance: "Islamic Banking Service Quality And Withdrawal Risk: The Indonesian Experience". Department Of Business Administration, International Islamic University Malaysia, Issn 2220-8291, Volume 1 – Issue 2, September 2011.
- Abduh, Duasa, And Omar, 2011. "Factors Influence Depositors' Withdrawal Behavior In Islamic Banks: A Theory Of Reasoned Action". Worl Academy Of Science, Engineering And Technology International Journal Of Social, Behavioral, Educational, Economic, Business And Industrial Engineering V0l:5, No.12, 2011.
- Haque, Osman, And Ismail, 2009. 'Factor Influences Selection Of Islamic Banking: A Study On Malaysian Customer Preferences". American Journal Of Applied Sciences 6 (5): 922-928.2009. Issn 1546-9239.
- Hardini, Isriani Dan Giharto, Muh, 2007. Kamus Perbankan Syari'ah. Bandung: Marja.
- Jalil, And Rahman,2014. "The Impact Of Islamic Branding On Consumer Preference Towards Islamic Banking Srevice: An Empirical Investigation In Malaysia". Journal Of Islamic Banking And Finance March 2014, Vol.2, No.1, Pp.209-229, Issn:2374 – 2666.
- Kara, Muslimin, 2005. Bank Syari'ah Di Indonesia, Yogyakarta, Uii Press.
- Mooduto, 2006. Pengaruh Penerapan Syari'ah Terhadap Kinerja Dan Ketahanan Bank Islam Di Indonesia, Surabaya, Pasca Sarjana Unair, Disertasi.
- Muhammad, 2005. Manajemen Bank Syari'ah, Yogyakarta, Upp Amp Ykpn.
- Nur Khalis, 2008. Menjawab Keraguan Berekonomi Syari'ah, Yogyakarta, Msi Uii Dan Safira Insania Press.
- Republik Indonesia 1992. Undang-Undang Republik Indonesia Nomor 10 Tahun 1998 Tentang Perubahan Atas Undang-Undang Nonor 7 Tahun 1992 Tentang Perbankan. Lembaran Negara Ri Tahun 1998, No.182. Menteri Sekretariat Negara. Jakarta.
- Republik Indonesia 2008. Undang-Undang Republik Indonesia Nomor 21 Tahun 2008 Tentang Perbankan Syariah. Lembaran Negara Ri Tahun 2008, No.94. Sekretariat Negara. Jakarta.
- Singarimbun, Masri Dan Sofyan Efendi, 1992. Metode Penelitian Survey, Jakarta: Lp3es.
- Suyanto, Muhammad, 2007. Ekonomi Kesejahteraan Syari'ah, [www.msuyanto.com](http://www.msuyanto.com)
- Tim Redaksi, Fokus Media, 2008, Kompilasi Hukum Ekonomi Syari'ah, Bandung, Fokusmedia.



APPLYING STRUCTURAL EQUATION MODELING TO ANALYZE  
THE VARIABLES IN THE PURCHASING BEHAVIORS OF CUSTOM-  
ERS OF CHAIN COFFEE SHOPS IN TAIWAN

Huang-Ning Lee

Assistant Professor, Department of Restaurant Management  
TOKO University, Taiwan R.O.C.

An-Sheng Lee \*

Professor, Department of Wood-Based Materials and Design  
National Chiayi University, Taiwan R.O.C.

\*Corresponding author, [sheng1887@mail.ncyu.edu.tw](mailto:sheng1887@mail.ncyu.edu.tw)

Abstract

As the business competition environment changes rapidly, consumers' preferences for products or services also become different. Enterprises have to understand the important factors involved in purchase decision making process in order to meet the needs of consumers. This study is mainly intended to understand the influence of brand identity on consumers' perceived value and customer satisfaction and also to examine whether perceived value has any mediating effect on brand identity and customer satisfaction. Structural equation modeling is applied while confirmatory factor analysis and path analysis are also used to analyze and verify the relations between different variables. Convenient sampling is employed to survey customers of chain coffee shops in the Chiayi area in Taiwan. Statistical analysis is then performed on 329 valid questionnaire copies retrieved. The results show that (1) brand identity has significant positive influence on perceived value; (2) brand identity has significant positive influence on customer satisfaction; (3) perceived value has significant positive influence on customer satisfaction; and (4) perceived value has certain mediating effects on brand identity and customer satisfaction. It is hoped that the outcome of study can serve as a reference for chain coffee shops to plan marketing strategies when conducting brand positioning in order to solidify brand management and improve business performance.

Keywords: Brand identity, perceived value, customer satisfaction, structural equation modeling

## Introduction

Consumers' preferences for products or services change quickly and businesses have to understand the important factors involved in consumers' purchase decision making process. Kapferer (1009) asserts that brand identity is one of the most important factors in corporate brand management. It plays a key role in an enterprise's decision of its differentiation strategy to create brand equity (Joachimsthaler & Aaker, 1996; Kotler, 1998; Keller, 1993; Kotler & Keller, 2006). In marketing, brand identity has become a new development concept. Aaker (1996) proposes that creation of corporate value and conveyance of the idea is a critical factor that may push a company toward success. It is also an important strategic guideline for an enterprise to develop its competitiveness (Aaker, 2010; Lee & Overby, 2004; Keller, 1993; Graf & Maas, 2008; Woodruff, 1997; Flint, Woodruff & Gardial, 2002). Ryu, Han & Kim (2008) believe that, in marketing, value has to be viewed from the angle of consumers if a company wishes to have significant influence on the market. As a consequence, many scholars agree that perceived value, an important variable in studying consumer behavior when choosing products and making purchases, is a factor that has to be taken into consideration (Zeithaml, 1988; Dodds, Monroe & Grewal, 1991; Mc-Dougall & Levesque, 2000; Aufahrt & Franz, 2006). According to the background and motive of this study, the main purpose is to examine (1) the influence of brand identity on consumers' perceived value, (2) the influence of brand identity on customer satisfaction and (3) whether perceived value has any

mediating effect on brand identity and customer satisfaction. It is hoped that the outcome of study can serve as a reference for chain coffee shops to plan marketing strategies when conducting brand positioning to solidify brand management and improve their business performance.

## Literature Review

### *Brand identity*

Brand identity expresses the image and reputation of an enterprise. Asker (1996) points out that brand identity is the creation, maintenance and enhancement of brand positioning by the brand strategy manager. Through positioning, a brand exhibits its unique character in the minds of consumers (Upshaw & Taylor, 2000). Roy & Banerjee (2007) think brand identity is the positive impression created in the minds of customers by an enterprise during brand marketing. It includes a set of characteristics and elements that are adopted in the thinking and execution of the manager of a brand (Buil, Catalán & Martínez, 2016). Schmitt & Simonson (1997) come up with four multi-aspect viewpoints about brand identity: (1) the property viewpoint: the external design and internal furnishing of a restaurant, the ordering and dining areas, lighting equipment and restrooms; (2) the product viewpoint: names and descriptions of dishes on the menu; the appeal, aroma and flavor of the food; ingredients, nutritional facts; and types of dessert and set menu; (3) the presentation viewpoint: the internal and external presentation of the enterprise, including the interior arrangement of the shop, packaging for take-out items

and employee performance; and (4) the publication viewpoint: advertising contents, company website, signs and promotional activities inside the shop. The abovementioned are adopted for the operational definition of brand identity in this study.

### *Perceived value*

Consumers make their purchase decisions according to their perceived value. Creation of value and conveyance of the idea is a critical factor and also an important strategic guideline in establishment and maintenance of the competitiveness of an enterprise (Woodruff, 1997; Aaker, 2010; Graf & Maas, 2008; Lee & Overby, 2004). Sanchez, Callarisa, Rodriguez & Moliner (2006) believe that perceived value is the comparison between perceived benefits and sacrifices in the assessment process (Walter, Ritter & Gemünden, 2001). McDougall & Levesque (2000) point out that the result or benefit derived from comparison between the gain and total cost is a kind of perceived value. Value is the difference between the perceived benefit and cost for consumers. This definition is adopted as the operational definition of perceived value.

### Customer satisfaction

Customer satisfaction is a key indicator extensively adopted by enterprises when establishing their marketing strategies (Ryu et al., 2008). Peterson & Wilson (1992) put forth the idea that customer satisfaction is the result of customers' assessment of their expectations and estimated benefits. Oliver (1997) proposes that satisfaction is the emo-

tional feeling of customers about the outcome of services they have experienced and rated. Therefore, customer satisfaction can be regarded the perception of customers after weighing between the benefit and the price of a product. The overall customer satisfaction is the result of experience of consumers purchasing a product or service and the overall rating accumulated over time (Anderson, Fornell & Lehmann, 1994). Spreng, Machenzie & Olshavsky (1996) suggest that satisfaction means satisfaction of customers' needs. Westbrook (1980) concludes that customer satisfaction is the result from consumers' comparison between the purchased product and a former product. This definition is adopted as the operational definition of customer satisfaction.

### Methodology

Structural equation modeling is employed in this study to conduct empirical analysis. SEM includes two parts, the measurement model and the structural model. The former is applied to conduct confirmatory factor analysis (CFA) to understand the relations between the latent variables and the observed variables while the latter is applied to explore the relations between the latent variables. Path analysis is used to study and analyze the results of inter-influence between the variables. The relations between different variables in the model are tested with the Amos statistical software whereas demographic data are analyzed with SPSS.

## Study Hypotheses

### *The relationship between brand identity and perceived value*

Cretu & Bordie (2007) point out in their study that brand image has positive influence on customer perceived value and loyalty. Dodds et al. (1991) indicate in their research that consumers use brand names to search information and reflect on the outcome, and quality perception and perceived value are the results. Ryu et al. (2008) discover in their study that the image of a restaurant has significant influence on perceived value. Therefore, it is inferred in this study that brand identity has positive influence on consumers' perceived value and the following hypothesis is proposed:

**H<sub>1</sub>:** Brand identity has significant positive influence on perceived value.

### *The relationship between brand identity and customer satisfaction*

Duncan and Moriarty (1999) suggest the biggest advantage in establishing the brand image of an enterprise is improvement of customer retention and customer satisfaction. Park & Kim (2009) explore the relations between recognition of brand identity and consumers' purchasing behaviors and discover the brand identity of restaurants has significant influence on consumers' willingness to make purchases and visit the restaurants again. Sondoh, Omar, Wahid, Ismail & Harun (2007) indicate in their study that positive brand image can improve customer satisfaction and influence loyalty. According to the aforesaid literature, when consumers are

shopping, brand identity has positive influence on their buying tendencies. Based on this, it is inferred in this study that brand identity has influence on customer satisfaction and the following hypothesis is proposed:

**H<sub>2</sub>:** Brand identity has significant positive influence on customer satisfaction.

### *The relations between brand identity, perceived value and customer satisfaction*

Ryu et al. (2008) study the relations between the image, perceived value and customer satisfaction with regard to restaurants as well as the behavioral intentions of consumers and conclude that the image of a restaurant has significant influence on perceived value whereas perceived value also has a significant effect on customer satisfaction (McDougall & Levesque, 2000). Malik (2012) suggests that perceived value can have mediating effects on perceived service value and customer satisfaction. Clarkson et al. (2008) think perceived value has a lot of influence on customer satisfaction. According to the above, perceived value can lead to mediating effects and will influence the relationship between brand identity and customer satisfaction. Based on this, the following hypotheses are proposed in this study:

**H<sub>3</sub>:** Perceived value has significant positive influence on customer satisfaction.

**H<sub>4</sub>:** Perceived value has mediating effects on brand identity and customer satisfaction.



## Study Design

Convenient sampling was adopted and questionnaires were administered to consumers at chain coffee shops in the Chiayi area to collect information for analysis. The seven-point Likert scale adopted by scholars mentioned above was also applied for data measurement. First, a preliminary test was conducted. The Cronbach's  $\alpha$  values of various study aspects were brand identity 0.898, perceived value 0.888 and customer satisfaction 0.909, all larger than 0.8, and the reliability of the questions was deemed decent. 350 copies of the questionnaires were officially distributed. Among the ones retrieved, 329 copies were considered valid and statistical analysis was performed.

## Results of Quantitative Analysis

Analyzed with descriptive statistics, there are 166 males and 163 females, making the sampling structure rather even in gender distribution. In educational background, 178 people are college graduates (54.1%), followed by 76 senior high and vocational school graduates (23.7%), 44 people with master's or higher degrees (13.4%), and 29 people with junior high school or lower education (8.8%). The age groups of the people surveyed include 110 people between 25 and 34 years of age (33.4%), 79 people between 35 and 44 (24%), and 66 people between 15 and 24 (20.1%). Profession-wise, 73 of them are students, (22.2%) making up the largest proportion. In average monthly income, 86 people are without a fixed income (26.1%), 69 people make between NT\$20,001 and 30,000 (21%), 62 people

earn more than NT\$50,001 (18.8%), and 23 people have wages less than NT\$20,000 (7%).

Application of the Pearson's correlation coefficient to test brand identity, perceived value and customer satisfaction reveals the significance of correlation  $p < 0.01$ . Positive correlations exist between different variables. Maximum likelihood estimation is used with SEM to estimate the relations between all the variables and the equation automatically generates a covariance matrix for calculation of the goodness of fit. To improve the CFA model, questions B1, B2 and B3 are removed and the CFA goodness of fit of brand identity, perceived value and customer satisfaction remains compliant with the indicator and shows decent content validity. In subsequence, the structural equation models are tested to confirm the SEM goodness of fit of brand identity, perceived value and customer satisfaction, as shown in Fig.1.  $\chi^2$  is 198.523 and df is 62.  $\chi^2/df=3.202$ . RMSEA=0.082. GFI=0.916; AGFI=0.876; and CFI=0.949. Overall, the SEM goodness of fit complies with the normal goodness-of-fit indicator, suggesting the model goodness of fit is decent. Therefore, no modification is needed, as shown in Table 2.

As shown in Table 3, the results of verification using path analysis indicate that the value of path coefficient  $\beta$  of brand identity  $\rightarrow$  perceived value is 0.576 and  $p < 0.001$ . In other words, the influence of brand identity on perceived value achieves significance, and  $H_1$  hypothesis is valid. Brand identity has significant positive influence on perceived value. Meanwhile, the value of path co-



efficient  $\beta$  of brand identity  $\rightarrow$  customer satisfaction is 0.164 and  $p < 0,001$ . Therefore, the influence of brand identity on customer satisfaction achieves significance. This means  $H_2$  hypothesis is valid, and brand identity has significant positive influence on customer satisfaction. Next, the value of path coefficient  $\beta$  of perceived value  $\rightarrow$  customer satisfaction is 0.741 and  $p < 0,001$ , indicating that the influence of perceived value on customer satisfaction also achieves significance. Hence,  $H_3$  hypothesis is valid and perceived value has significant positive influence on customer satisfaction. Tests are run to find out whether perceived value has any mediating effect on brand identity and customer satisfaction. First, the effect of independent variable BI on mediator variable PV is examined and  $p < 0.001$ ; significance exists. Next, the effect of independent variable BI on dependent variable CS is checked and  $p < 0.001$ ; significant influence is there. At the same time, the effect of PV on CS also achieves significance. The direct effect of brand identity on customer satisfaction,  $BI \rightarrow CS$ , is 0.179 while the indirect effect is 0.465 ( $0.713 * 0.652$ ). Since the test indicates the effect of BI on CS is significant, perceived value has certain mediating effects. Based on this,  $H_4$  hypothesis is valid; perceived value has mediating effects on brand identity and customer satisfaction.

After analysis of the data established as mentioned above and verification of the procedure, the results of this study include the following: (1) Brand identity has significant positive influence on perceived value. (2) Brand identity has significant positive influence on customer satisfaction. (3) Perceived value

has significant positive influence on customer satisfaction. (4) Perceived value has certain mediating effects on brand identity and customer satisfaction.

## Conclusion and Discussion

The empirical analysis performed in this study confirms that brand identity can help businesses develop brand impressions in consumers when it is taken into consideration in brand positioning and it can also allow businesses to show their differences from their competitors to influence perceived value and customer satisfaction directly. The outcome coincides with the conclusion of Martenson (2007) on the importance of understanding brands from the angles of customers. Businesses need good customer satisfaction to prosper. Brand identity can help establish close relations between consumers and a business. Therefore, the marketing strategies of chain coffee shops have to include various items associated with brand identity, such as use of modern equipment, good menu contents and richness of design, decent product packaging design, employees' considerate service, fine advertising design and CIS design, and so on. They must be able to enhance brand image to improve customer satisfaction. It is proven in this study that perceived value is an important factor when consumers make purchasing decisions. Similarly, Ryu et al. (2008) also conclude that value can have significant influence and its effect on customer satisfaction is significant (McDougall & Levesque, 2000). This study proves that

Table 1. Study Variables and Measurement

Study Variables	Variable Measurement	Source of Reference	Cronbach's $\alpha$	Mean
Brand Identity	B1. The appearance of this coffee shop makes me want to go in and get some coffee.	Witkowski, Ma & Zheng (2003)	0.898	5.63
	B2. The furniture and décor in this coffee shop attract me to go in and get something to eat.			5.54
	B3. This coffee shop has modern equipment.			5.72
	B4. There are different kinds of food listed on the menu of this coffee shop.			5.64
	B5. The food served in this coffee shop is very delicious.			5.54
	B6. This coffee shop provides pretty napkins and placemats and the take-out items are beautifully packaged.			4.81
	B7. The employees of this coffee shop are polite.			5.60
	B8. This coffee shop is modern-looking.			5.49
	B9. The ads for this coffee shop are well designed.			5.37
	B10. The brand name of this coffee shop sounds nice.			5.34
Perceived Value	P1. This coffee shop gives good value for the price you pay.	Ryu et al. (2008)	0.888	4.93
	P2. The overall value is high when I dine in this coffee shop.			4.89
	P3. The dining experience in this coffee shop is worth the money.			5.08
Customer Satisfaction	S1. It is pleasant to dine in this coffee shop.	Ryu et al. (2008)	0.909	5.37
	S2. Overall, I feel satisfied when dining in this coffee shop.			5.06
	S3. I am in a good mood when dining in this coffee shop.			5.10

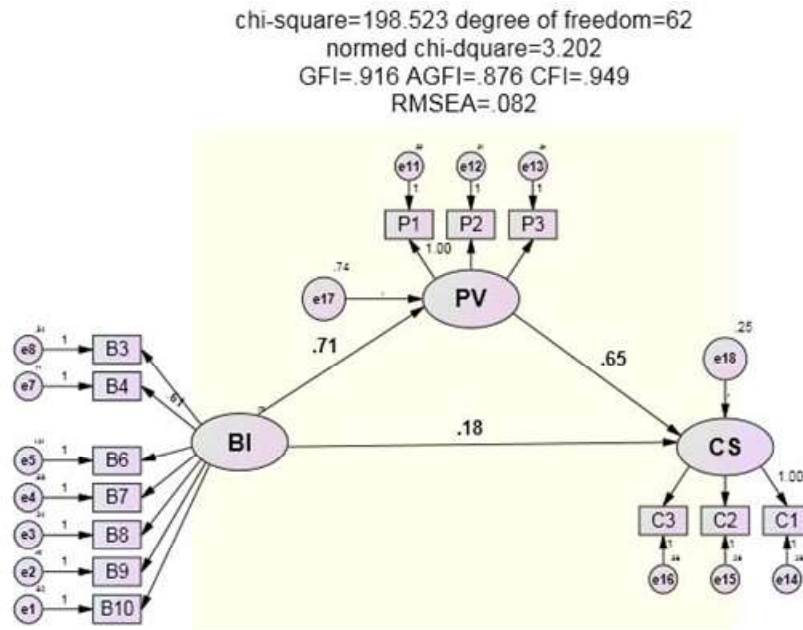


Fig.1 The structural equation modeling goodness of fit for Brand Identity, Perceived Value and customer satisfaction

Table 2. Structural Equation Modeling of Brand Identity, Perceived Value and Customer Satisfaction

<b>Name of SEM Goodness of fit</b>	<b>SEM Goodness-of-Fit Indicator</b>	<b>Models in This Study</b>
$\chi^2$ (df)	The smaller the better	198.523 (62)
$\chi^2 / df$	1~5	3.202
RMSEA	<0.08	0.082
AGFI	>0.9	0.876
CFI	>0.9	0.949
GFI	>0.9	0.916
TLI(NNFI)	>0.9	0.936

Source: Arranged for this study

Table 3. Path Coefficients and Unstandardized Coefficients of Brand Identity, Perceived Value and Customer Satisfaction

<b>Path</b>	<b>Path Coefficient</b>	<b>P</b>	<b>Estimate</b>	<b>S.E.</b>	<b>C.R.</b>
Brand identity → perceived value	0.576	***	0.713	0.078	9.136
Brand identity → customer satisfaction	0.164	***	0.179	0.056	3.194
Perceived value → customer satisfaction	0.741	***	0.652	0.052	12.663

Note\*\*\* Table p< 0.001

through the mediating effects of the perceived value of consumers, chain coffee shops can have better results when marketing their products as well as improve customer satisfaction to achieve brand positioning by strengthening their brand management to upgrade management performance.

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#### References

- Aaker, D. A. 1996. *Building Strong Brands*. New York: The Free Press – A division of Simon & Schuster Inc.
- Aaker, D. 2010. 'Improve your brand ID'. *Marketing News*, 44(4): 12.
- Anderson, E. W., Fornell, C. & Lehmann, D. R. 1994. 'Customer satisfaction, market share, and profitability: Findings from Sweden', *The Journal of Marketing*, 53-66.
- Aufahrt, H. & Franz, H. 2006. 'The Evolution of Loyalty Intentions', *Journal of Marketing*, 70(2): 122-132.
- Buil, I., Catalán, S. & Martínez, E. 2016. 'The importance of corporate brand identity in business management: An application to the UK banking sector', *BRQ Business Research Quarterly*, 19(1):3-12.
- Cretu, A. E. & Brodie, R. J. 2007. 'The influence of brand image and company reputation where manufacturers market to small firms: A customer value perspective', *Industrial Marketing Management*, 36(2): 230-240.
- Dodds, W. B., Monroe, K. B. & Grewal, D. 1991. 'Effects of price, brand, and store information on buyers' product evaluations', *Journal of marketing research*, 28(3): 307-319.
- Duncan, T. & Moriarty, S. 1999. 'Commentary on relationship-based marketing communication', *Australasian Marketing Journal (AMJ)*, 7(1), 118-120.
- Flint, D. J., Woodruff, R. B. & Gardial, S. F. 2002. 'Exploring the Phenomenon of Customers' Desired Value Change in a Business-to-Business Context', *Journal of Marketing*, 66(4), 102-117.
- Graf, A. & Maas, P. 2008. 'Customer value from a customer perspective: a comprehensive review', *Journal für Betriebswirtschaft*, 58(1), 1-20.
- Joachimsthaler, E. & Aaker, D. A. 1996. 'Building brands without mass media', *Harvard Business Review*, 75(1), 39-41.
- Kapferer, J. N. 1998. *Strategic Brand Management*. 2nd edn, Kogan Page, New York, NY and London.
- Keller, K. L. 1993. 'Conceptualizing, Measuring, and Managing Con-

- sumer - Based Brand Equity', *Journal of Marketing*, 57(1), 1-22.
- Kotler, P. 1998. *Marketing Management: Analysis, Planning, Implementation, and Control*. 9th ed., Prentice Hall.
- Kotler, P. & Keller, K. L. 2006. *Marketing Management*. 12th ed., Upper Saddle River, NJ: Pearson Prentice Hall.
- Lee, E. J. & Overby, J.W. 2004. 'Creating Value for Online Shoppers: Implications for Satisfaction and Loyalty', *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, 17: 54-67.
- Malik, S. U. 2012. 'Customer satisfaction, perceived service quality and mediating role of perceived value', *International Journal of Marketing Studies*, 4(1), 68-76.
- Martenson, R. 2007. 'Corporate brand image, satisfaction and store loyalty: A study of the store as a brand, store brands and manufacturer brands', *International Journal of Retail & Distribution Management*, 35(7), 544-555.
- McDougall, G. H.G. & Levesque, T. 2000. 'Customer satisfaction with services: putting perceived value into the equation', *Journal of Services Marketing*, 14(5), 392-410.
- Oliver, R. L. 1997. *Satisfaction: A behavioral perspective on the consumption*. New York: McGraw-Hill.
- Park, J. H. & Kim, J. E. 2009. 'The Effect of Family Restaurant Brand Identity on the Purchase Intention of Consumer', *Journal of the Korean Society of Food Culture*, 24(3), 245-255.
- Peterson, R. A. & Wilson, W. R. 1992. 'Measuring customer satisfaction: fact and artifact', *Journal of Academy of Marketing Science*, 20(1), 61-71.
- Roy, D. & Banerjee, S. 2007. 'CARE-ing Strategy for Integration of Brand Identity with Brand Image', *International Journal of Commerce and Management*, 17, 140-148.
- Ryu, K., Han, H. & Kim, T. H. 2008. 'The relationships among overall quick-casual restaurant image, perceived value, customer satisfaction, and behavioral intentions', *International Journal of Hospitality Management*, 27(3), 459-469.
- Sanchez, J., Callarisa, L., Rodriguez, R. M. & Moliner, M. A. 2006. 'Perceived value of the purchase of a tourism product', *Tourism Management*, 27(3), 394-409.
- Schmitt, B. & Simonson, A. 1997. *Marketing Aesthetics: The Strategic Management of Brands, Identity, and Image*. New York: The Free Press.
- Sondoh Jr, S. L., Omar, M. W., Wahid, N. A., Ismail, I. & Harun, A. 2007. 'The effect of brand image on overall satisfaction and loyalty intention

in the context of color cosmetic', *Asian Academy of Management Journal*, 12(1), 83-107.

Spreng, R. A., MacKenzie, S. B. & Olshavsky, R. W. 1996. 'A reexamination of the determinants of consumer satisfaction', *Journal of Marketing*, 60(3), 15-32.

Upshaw, L. B. & Taylor, E. L. 2000. *The master brand mandate: The management strategy that unifies companies and multiplies value*. New York: John Wiley & Sons.

Walter, A., Ritter, T. & Gemünden, H. G. 2001. 'Value creation in buyer-seller relationships: Theoretical considerations and empirical results from a supplier's perspective', *Industrial marketing management*, 30(4), 365-377.

Westbrook, R. A. 1980. 'A rating scale for measuring product/service satisfaction', *The Journal of Marketing*, 68-72.

Woodruff, R. B. 1997. 'Customer value: the next source for competitive advantage', *Journal of the academy of marketing science*, 25(2), 139-153.

Zeithaml, V. A. 1988. 'Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence', *Journal of Marketing*, 52(3), 2-22





## IMPROVING ORGANIZATIONAL CITIZENSHIP BEHAVIOR (OCB) THROUGH ISLAMIC WORK ETHICS AND KNOWLEDGE SHARING

Wuryanti

*Dept. of Management, Universitas Islam Sultan Agung, Semarang, Indonesia*  
[wuryanti@unissula.ac.id](mailto:wuryanti@unissula.ac.id)

Heru Sulistyono

*Dept. of Management, Universitas Islam Sultan Agung, Semarang, Indonesia*  
[heru@unissula.ac.id](mailto:heru@unissula.ac.id)

### Abstract

Organizational Citizenship Behavior (OCB) behavior is important to create good performance of organization in achieving competitive advantage. OCB defines as a feeling of belonging organization and being responsible to advance and maintain the performance of organization through positive action beyond the formal role as an employee. Some researchers have examined several important factors affecting OCB. This study aims to examine some factors affecting OCB such as work satisfaction, knowledge sharing, and Islamic work ethic. The sample used in this study was the employees in government bureaucracy related to public service in Semarang consisting of 100 participants. The sample was chosen using non-probability (not random) of purposive sampling method based on consideration of those who have become permanent employees and have been working more than 5 years. The data were collected by employing survey method through open and close questionnaire, and interview. The data were analyzed using Partial Least Square Software. The findings of this study showed that there is significant effect between knowledge sharing and OCB, while Islamic work ethic also has significant effect on OCB.

**Keywords:** Knowledge sharing, Islamic work ethics, Innovation capability, Performance

### Introduction

Organizational Citizenship Behavior (OCB) is an important behavior to realize the performance of the unit,

which in turn, will bring a good performance of the organization. OCB has become important construct in the field of organizational behavior and management, so it gets a lot of attention as

a topic of research and literature, since it is proposed by Organ (1988). According to Organ (1988), OCB is an important factor that has contributed to the sustainability of the organization.

Despite the growing interest in researching OCB, most research is conducted outside Indonesia and focused on organizational justice, organizational commitment, leadership, and personality factors. The study on the OCB in Indonesia needs to be implemented and linked to the condition of Indonesian society in general. In addition, a research on the OCB for employees who work in universities needs to be done. It is because the increase of important role of supporting staff to ensure the smooth operation of lectures at universities.

The study on OCB was conducted by Dickinson (2009). It is a study on the effect of employee attitudes namely job satisfaction, relationships with board of leader, perceptions of justice received, organizational commitment, job stress, and stressful outside of work; on the extra role behavior or OCB. The result showed that there was a positive and significant correlation between the relationship with board of leader, organizational commitment, and job stress with the OCB. While job satisfaction, perceptions of fairness and stress outside work do not have a significant correlation with OCB. Chiboiwa et al. (2011) conducted a study to evaluate the level of job satisfaction and OCB in several organizations in Zimbabwe, the results showed that job satisfaction had greater intrinsic effect on OCB and performance than the extrinsic one. Paramita (2009) conducted a study on the contract employees at the Dipone-

goro University. Based on the research results, it can be concluded that job satisfaction and organizational culture have positive significant effect on the motivation of employees working on contract, while the motivational factor also has significant positive effect on OCB of the employees. Several factors affect the OCB include job satisfaction, reward, organizational climate and Islamic work ethics.

One of the most important factors to improve OCB is Islamic work ethic. Islamic work ethic is defined as a set of values or belief systems of the Qur'an and the Sunnah about the work. Islamic work ethic gives a good influence on someone behavior in the work because it can provide a stimulus for positive work attitude. Positive work attitude allows a favorable outcome such as hard work, commitment and dedication towards work and other work attitude, which of course, can benefit for the individual and the organization (Yousef, 2001).

If employee gets what is expected or desired, he will be satisfied and feel that such work really mean to him. The result of satisfying work will have an impact on the employee to continue to provide the ability and to be in the organization. This shows that Islamic work ethic can drive satisfaction, commitment and continuity of work (Yousef, 2001; Marri et al, 2012) and as a result, it can decrease employee turnover rates.

The Islamic work ethic regards the aim of working not just to finish the job, but to encourage the growth of the balance of personal and social relationships (Ali, 2001). This is important because Islamic work ethic not only

provides benefits to individuals who adhered to the principle, but also gives effect on the overall work environment. When linked with organizational behavior, organizational citizenship behavior is someone behavior to work outside the formal duty. Individuals will also be volunteered to help and do the work outside the job description which has been set. From this, it can be seen that Islamic work ethic can lead to job attitudes of organizational citizenship behavior.

## Literature Review

### *Innovation Capability*

Innovation is an organizational capability that is very important, because the success of the new product is a trigger of growth and give impact on the increase in sales, profits, and strength of competition for many organizations (Pauwels, Silva-Risso, Srinivasan, & Hanssen, 2004; Sivadas & Dwyer, 2000). Some research findings agree that there is a direct and positive correlation between innovation and superior performance (Baker & Sinkula, 1999; Calantone, Cavusgil & Zhao, 2002; Han, Kim, & Srivastava, 1998; Hult, Hurley, & Knight, 2004; Hurley & Hult, 1998; Keskin, 2006; Panayides, 2006; Thornhill, 2006). Hults et al. (2004) describes innovation as a process, product and organization of new ideas. Innovation is defined as a process that starts with an idea, an out growth findings and results of introduction of products, processes and new services in the market (Thornhill, 2006). The impact of innovation on performance has been tested intensively by some research today and the results showed significant effects.

Huang and Li (2008) in their study state that knowledge management affects innovation performance. The same result is also found in Monica Hu et al (2012), it is stated that there is a positive correlation between the sharing of knowledge and innovation. The study by Liao Li-fen (2006) explains that there is positive effect of knowledge sharing activities on the increase of organizational innovation. Furthermore, Rofiaty (2012) also concludes that knowledge sharing has a positive effect on innovation. Nonetheless, the results of the study by Sarah et al (2008) explained that knowledge sharing does not affect innovation.

### *Organizational Citizenship Behavior (OCB)*

Organizational citizenship behavior (OCB) is a cooperation and assistance to each other to support the social and psychological relationship to the organization. This includes supporting the company's public image, acting wisely so that organizations can avoid and solve problems, offering ideas outside the responsibility of the job, attending a function voluntarily for the benefit of the organization, and following any new developments in the organization (McShane & Von Glinov, 2010). OCB in the form of extra-role behavior is different from in-role behavior that is generally consistent with the job description of employees. If the in-role behavior of the employees will be given either award or punishment, so, extra-role behavior does not deal directly with the award that will be obtained, so that the OCB concerns directly with the behavior in the employee's personal. When an employee performs OCB, then he will feel satisfaction, but if he does not do

so, the employee will not get punishment (Pratiwi, 2012). There are seven dimensions of OCB according to Podsakoff (2000). First, Helping Behavior, it is employee behavior which helps co-workers or avoids the occurrence of work-related problems. Second, Sportsmanship, it is a desire to tolerate work that cannot be avoided or disturbed without exception. Third, organizational loyalty, it is to promote organization to outsiders, protect and defend the organization against threats from outside and remain committed even in adverse conditions. Fourth, Organizational compliance, it is internalization and acceptance of the rules, regulations and procedures that exist in the organization although without controlling party. Fifth, Individual initiative, it is behavior involved in the task, the work for the survival of the company but more than what is expected or on a voluntary level. Sixth, civic virtue, it is the willingness to actively participate in the organization, reveal one's opinion about what the organization's strategy should be followed, monitor the company's environmental threats and opportunities and look outside the organization to get the best profit. Seventh, self-development, it is voluntary behavior to improve the knowledge, skills and abilities.

#### *Islamic Work Ethics (IWE)*

Islamic work ethic that comes from sharia dedicates work as a virtue. Social relationship in work is emphasized to meet one's needs and enhance balance in social and individual life of a person. Besides, the work is considered as a source of self-reliance and a means of personal development (personal growth), personal honor (self-respect), satisfaction and personal fulfillment (self-fulfillment).

Islamic work ethics emphasizes creativity as a source of happiness and perfection. Hard work is a virtue, and those who work hard are more likely to advance in life, and so that for the opposite (Ali, 1998). Work value in Islamic work ethic, revealed by Ali, (1998) is derived from the intention (Accompanying intentions) rather than the work (work result). Individual affirm that justice and kindness in the workplace is a necessity for the welfare of the people and no one has their wages delayed. Islamic work ethic states that life without work is meaningless and carrying out economic activities is an obligation (Ali, 1998). Islamic Work Ethic by Ali (2008) emphasizes that work is more than personal enjoyment economically, socially, and psychologically. Islamic Work Ethic Islam is an orientation that shape and influence the engagement and participation of market participants (workers) which must be transparent, responsible, and committed to serve the public interest without jeopardizing the welfare of the other actors or the public. The study conducted by Yousef (2001) demonstrates the great commitment to work as the influence of the Islamic Work Ethics. By applying Islamic Work Ethics in the workplace, it can improve employees' organizational commitment. Employees who feel their organization goes according to ethics will improve their organizational commitment which in itself makes employees want to spend his ideas (innovation) in order to develop the organization. There are many studies on the effect of Islamic work ethic towards organizational outcomes such as attitude, commitment, satisfaction, performance, innovation and OCB. One of them has been by done Ali et al.

(2013); Zaman et al. (2012); Alhyasat (2012), Yousef (2000). The study conducted by Kumar and Rose (2010; 2012) concludes that Islamic work ethic is positively correlated to the ability of public sector innovation in Malaysia. The study by Ali and Al Owaihan (2008) concludes that the implementation of Islamic work ethic results in high performance. The study by conducted Yesil et. al (2012) in Turkey concludes that the Islamic work ethic affects the ability of innovation and company performance. The study conducted by Abbasi et al. (2012); Awan and Akram (2012) concludes that the Islamic Work Ethic affects the ability of organizational innovation.

H1: Islamic work ethic has a significant effect on OCB

H2: Islamic work ethic has a significant effect on innovation capabilities

### *Knowledge Sharing*

Knowledge Sharing or According to Lin (2007) is defined as the culture of social interaction that involves the exchange of employee knowledge, experience, and skills through all parts of the organization. Individually, Knowledge Sharing can be words or speech to co-workers to help them in order to make things better, faster or more efficiently. For organization, Knowledge Sharing is the process of capturing, organizing, reusing and transferring experiences based knowledge in the organization and make it available to those who are in the organization. Knowledge Sharing can be summarized as the process of dividing or channeling knowledge in the form of knowledge, experience, and skills,

in various ways through a process of either direct or indirect communication among employees. Aspects of the Knowledge Sharing Behavior according to Van den Hoof & De Ridder (2004) are, providing knowledge (knowledge Donating), it is to distribute or disseminate knowledge or capital intellectual to others that involves communication among individuals, and gathering knowledge (knowledge collecting), it is is to find / gather knowledge or intellectual capital through consultation with others. Rehman, Mahmood, and Salleh (2011) concludes that the employees and the parts of the organization cannot survive without communication, which will help to collect and acquire knowledge, and then increase the level of confidence as another crucial factor for Knowledge Sharing. The study conducted by Kumar and Rose (2010; 2012) concludes that the knowledge sharing has a significant effect on the ability of innovation. Srivastava and Bartol (2006) also conclude that the knowledge sharing has significant effect on performance. Huang and Li (2008) in his study states that the knowledge management affects innovation performance. The study by Monica and Hu et al (2012) find a positive correlation between knowledge sharing and innovation. The study by Liao Li-fen (2006) explains that knowledge sharing affects innovation capability.

H3: Knowledge sharing affects OCB

H4: Knowledge sharing effects innovation capability

Methods

*Sample*



The sample in this study is all employees of public service organizations in Central Java consisting of 125 respondents. The sampling technique uses purposive sampling method by the criteria of having work period of more than 5 years.

### *Data Collection*

The data collection is done by using a questionnaire distributed to selected respondents by giving due for 2 weeks to return the questionnaire. The questionnaires returned and worth to be analyzed are as many as 100 questionnaires.

### *Measurement*

Islamic work ethic variable is measured by four indicators by Abbas (1995), i.e., dedication, work well, work creativity and cooperation. Sharing knowledge is measured by using four indicators of giving knowledge training, effective knowledge sharing, giving personal knowledge to other employees, and giving knowledge through informal discussions. OCB is measured by using four indicators, i.e., willing to assist the work to others, help others when a problem is found, never complained, and follow the change. Innovation capability is measured by using indicators of generating a lot of ideas, taking a long time to produce new ideas, actively generating new ideas,

### *Results*

The description of respondents' profile showed the respondents in this study either males or females had balanced proportion. This is because in public service, the roles of males and

females were relatively the same. Considering from the age composition, the majority of them aged between 20 – 29 (49%), while the rest 47% were above 30 years old and under 50 years old. This indicates that their majority was included in the category of productive period and was still active in conducting public service. Most of them were undergraduate bachelor. The most proportion of work length on public service is between 0 – 9 years, meaning that the respondents were dominated fresh employees. For more detail, see Table 1 below.

Based on the computation of the average score and standard deviation, all of the variables resulted average score more than 3. If the index was made by dividing the criteria into three intervals namely good, fair, and poor, so the variable of Islamic work ethic (IWE) could be included into good category, which means that the implementation of IWE in public organization has been implemented well. The implementation of knowledge sharing also has been implemented well, which means that there has been the process of knowledge sharing among the employees. The availability of employees to implement extra work outside formal standard has been good which is shown from the average the average score is included into good category. The innovation capability in public service also has been implemented well. Table 2 shows the average score and standard deviation of each variable.

### *The Result of Validity Test*

The validity test was conducted by using convergent validity method through partial least square (PLS)

Table 1. The Description of Respondent's Profile

Variable	Percentage
Sex	
Male	51
Female	49
Age	
20-29	49
30-39	27
40-49	20
Above 50	4
Educational Degree	
D4	5
S1	95
Work Length	
0-9	40
10-19	17
20-29	28
30-39	15

Source: Analyzed Data

Table 2. The Average and Standard Deviation

Variable	Average	Standard Deviation
Islamic Work ethic	4,4	0,38
Organizational Citizenship Behaviour	3,8	0,46
Knowledge sharing	4,07	0,41
Innovation capability	3,8	0,48

software. Convergent validity is a measurement model which describes the correlation between indicator and its latent variable. The result of analysis in this step was outer loading score of each indicator, where all of the indicators were valid if they scored 0,5 or

more (Ghozali, 2008). Factor loading score of the analysis result is on Table 3.



Table 3. The Result of Convergent Validity Test

	Islamic Work Ethic	Innovation capability	Knowledge Sharing	OCB
EKI1	0,837725			
EKI2	0,875593			
EKI3	0,875858			
EKI4	0,937349			
KI1		0,857971		
KI2		0,830155		
KI3		0,881670		
KI4		0,845999		
KS1			0,891367	
KS2			0,902169	
KS3			0,874237	
KS4			0,935640	
OCB1				0,921944
OCB2				0,880301
OCB3				0,884217
OCB4				0,849020

Based on the outer loading score on Table 3, all of the IWE indicators were valid because the factor loading scores were more than 0,5. The same is true with the variables of knowledge sharing, OCB and innovation capability, where all of them resulted factor loading score more than 0,5. This shows that each indicator could measure their variables. The measurement of discriminant validity in this study was through comparing the score of Average Variance Extracted (AVE) with AVE root score. The AVE root score had to be higher than the AVE score in order to be able to fulfill the criteria of discriminant validity (Ghozali, 2008). The scores of AVE and AVE root for each variable

can be seen on Table 4, while to see the scores of correlation and cross loading between one variable to another, it can be seen on Table 5.

Based on the results of AVE, AVE root, and correlation, it could result the score of AVE root higher than the correlation score of the variable with other variables resulted. Therefore, it can be concluded that each indicator has fulfilled the requirement of discriminant validity.

*The Result of Reliability Test*

The reliability test of the instrument was measured using composite reliability. Composite reliability could

be seen from the score of internal consistency which was produced from the output of SmartPLS. The reliability score must result score 0,7 or higher

(Ghozali, 2008). In detail, the score of composite reliability from each variable employed in this study can be seen on Table 5 as follow.

Table 4. The Scores of AVE and AVE Root

Variable	(AVE)	AVE Root
Islamic Work Ethic	0,778549	0,882354
Knowledge Sharing	0,812038	0,901132
OCB	0,781896	0,884249
Innovation capability	0,729582	0,854156

Table 5. The Correlation Scores between Latent Variables of Measurement Model

	Islamic Work Ethic	Innovation capability	Knowledge Sharing	OCB
Islamic Work Ethic	1,000000			
Innovation capability	0,599783	1,000000		
Knowledge Sharing	0,438749	0,517878	1,000000	
OCB	0,459511	0,585484	0,435889	1,000000

Table 6. Composite Reliability of Each Variable

Variable	Composite Reliability
Islamic Work Ethic	0,933509
Knowledge Sharing	0,945266
OCB	0,934758
Innovation capability	0,915158

Based on the result of reliability test, all of the variables in this study resulted more than 0,7, so that it can be concluded that all of them had good reliabilities.

#### *The Result of Inner Model*

The result of inner model test generally described structural model namely the correlation among the latent variables consisting of Islamic work ethic, knowledge sharing, OCB, and innovation capability. Besides, the entire model also described measure-

ment model consisting of the correlation among 4 indicators of work ethic, 4 indicators of knowledge sharing variable, 4 indicators of OCB variable, and 4 indicators of innovation capabil-

ity variable with their own latent variable. The pathchart of the findings from all model can be seen on the Figure 1 as follow.

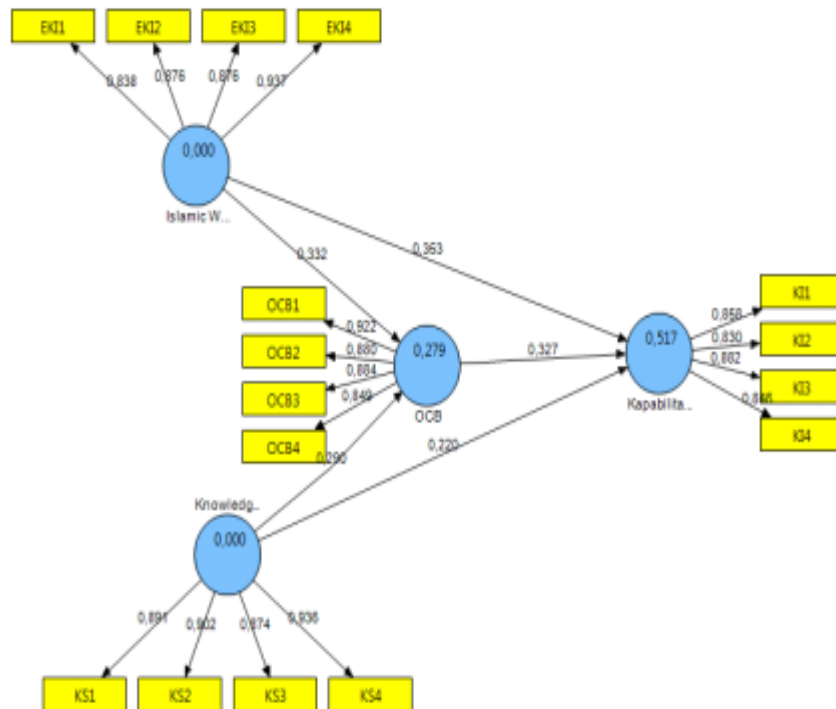


Figure 1. Outer Models

### *The Result of Hypothesis Test*

The hypotheses proposed in this study were tested using significant level ( $\alpha$ ) of 5% (0,05). The score of t-table for  $\alpha$  0,05 is 1,96, while the score of t-count of t test can be obtained by conducting bootstrapping to each factor loading using SmartPLS 2.0. If the t-statistic is higher than the t-table, the nul hypothesis is rejected and the alternative hypothesis is approved; if the t-statistic is lower than the t-table so the nul hypothesis is approved and the alternative hypothesis is rejected.

Based on the test, the hypothesis 1 test (H1) was supported, meaning that there was positive significant effect of Islamic work ethic on organizational citizenship behaviour, which was shown from the score of original sample estimate 0,33, t-statistic score (9,18) >  $t_{table}$  (1,96). The hypothesis 2 test was supported, the score of original sample estite was 0,35 and the t-statistic score was (11,29) >  $t_{table}$  (1,96), meaning that Islamic work ethic had positive significant effect on innovation capability. The hypothesis 3 test was supported , knowledge sharing had significant effect on organizational citizenship behavior, the score of original sample estimate was 0,29 and

t-statistic score (6,43) >  $t_{table}$  (1,96). Knowledge sharing also had significant effect on innovation capability, so that the hypothesis 4 was supported with the score of original sample estimate resulting 0,22 and t-statistic score (5,07) >  $t_{table}$  (1,96). The hypothesis 5 was also supported, organizational

citizenship behavior had significant effect on innovation capability which was shown from the score of original sample estimate resulting 0,32 and t-statistic score (8,60) >  $t_{table}$  (1,96). Therefore, all of the hypotheses could be supported.

Table 7. The Result of Hypothesis Test

Hip	Effect	Original Sample (O)	T Statistics ( O/STER R )	Remark
H1	Islamic Work Ethic -> OCB	0,33	9,18	H1 Approved
H2	Islamic Work Ethic -> Innovative Cap.	0,35	11,29	H2 Approved
H3	Knowledge Sharing -> OCB	0,29	6,43	H3 Approved
H4	Knowledge Sharing -> Innovative Cap.	0,22	5,07	H4 Approved
H5	OCB -> Innovative Cap.	0,32	8,60	H5 Approved

### Discussion

The result of inner model test showed that Islamic work ethic had significant effect on organizational citizenship behavior. This finding is in line with the finding of the study which was conducted by Alhyasat (2012) and Zaman et al (2012) who studied on the effect of Islamic work ethic on OCB. The finding of their study showed that it has positive significant effect on OCB. This finding is also in line with the study which was conducted by Abbasi & Rana (2012) that Islamic work ethic, has an effect on OCB. OCB is considered as one of the factors which can direct a corporate toward success. OCB is someone's work behavior outside his formal task so that individual will voluntarily help and do

his job outside his administered job description. The employee develops the good behavior towards his co-workers and organization more than what he should responsible, so that it can build teamwork for the importance of the organization. Whereas, Islamic work ethic also emphasizes cooperation in work, and discussion (*musyawarah*) is considered as one of the ways to solve problems so that it can avoid mistakes. Social relationship in a workplace is much supported to meet personal need and build balanced individual's life and social (Yousef, 2001). Employees who are able to understand and implement the values of IWE will have strong commitment to implement jobs outside their formal job and willing to help their co-workers overloaded in job.

Islamic work ethic has an effect on innovation capability. The finding is in line with the study which was conducted by Ali et al. (2013); Zaman et al. (2012); Alhyasat (2012), Yousef (2000). The study which was conducted by Kumar and Rose (2010; 2012) concluded that Islamic work ethic has positive correlation on innovation capability in public sector of Malaysia. The study which was conducted by Ali and Al Owaihan (2008) concluded that the implementation of Islamic values produces high performance. The study which was conducted by Yesil et. al (2012) in Turkey concluded that Islamic work ethic has an effect on innovation capability and corporate performance. The study which was conducted by Abbasi et al. (2012); Awan and Akram (2012) concluded that IWE has an effect on organization's innovation capability.

Knowledge sharing has significant effect on OCB. This finding is in line with the study which was conducted by Lin (2008). According to Lin (2008), the correlation between Organizational Citizenship Behavior and sharing knowledge behavior with gender as a moderator in Taiwan concluded that the 5 components of Organizational Citizenship Behavior consisting of willingness to sacrifice, politeness, awareness, sportsmanship and civil policy have an effect on knowledge sharing. The dimension of willingness to sacrifice is stronger in affecting the behavior of knowledge sharing on females than males, while sportsmanship and civil policy are stronger in affecting the behavior of knowledge sharing on males. Someone who is willing to share knowledge with co-workers will tend to do OCB. Knowledge sharing also has signifi-

cant effect on innovation capability. This finding is in line with the study which was conducted by Kumar and Rose (2010; 2012) show concluded that knowledge sharing has significant effect on innovation capability. The study of Srivastava and Bartol (2006) also concluded that knowledge sharing has significant effect on performance. Huang & Li (2008) on their study concluded that knowledge management has an effect on innovative performance. The findings are in line with the study which was conducted by Monica Hu *et al* (2012) who found that there is positive correlation between knowledge sharing activity and innovation. The finding also showed that OCB has significant effect on innovation capability. Employees who are willing to sacrifice to conduct jobs outside their formal job description tend to have high innovation capability.

## Conclusion

This study examines the importance of IWE and knowledge sharing factors towards the improvement of OCB and organization's innovation capability. The finding showed that IWE has significant effect on OCB and innovation capability. Knowledge sharing also has significant effect on OCB and innovative capability. These two variables can be considered as a stimulant for management to improve OCB and innovation capability of their employees in their organization.

## Managerial Implication

The finding showed that the role of IWE and knowledge sharing is very important in improving OCB and innovation capability. Management

must always strengthen the implementation of IWE values in their organization through several spiritual reinforcements sustainably in order to be conducted consistently by their employees. They also need to create at-

mosphere supporting their employees to share knowledge one to each in their organization through several forums such as discussion, either formal or informal meeting.

#### References

- Ali, A. (1988), "Scaling an Islamic work ethic", *Journal of Social Psychology*, Vol. 128 No. 5, pp. 575-83.
- Cakar Nigar Demircan & Alper Erturk (2010), Comparing Innovation Capability of Small and Medium Sized Enterprises: Examining the Effect of Organizational Culture and Empowerment, *Journal of Small Business Management*, 48 (3), pp. 325-359.
- Camps Susanna, Pilar Marques (2013), Exploring how social capital facilitates innovation: the role of innovation enablers. *Technological Forecasting & Social Change*, pp. 325-348
- Damanpour, F. (1991), Organizational Innovation: A Meta Analysis of Effects of Determinants and Moderators, *Academy of Management Journal*, Vol. 34 No.3, pp. 555-90
- Ellinger Alexander E, Carolyn Findley Musgrove, Andrea D Ellinger, Daniel G Bachrach, Ayse Banu Elmadağ Bas, Yu Lin Wang (2012), influences of organizational investments in social capital on service employee commitment and performance, *Journal of Business research*. 66, pp. 1124-1133
- Famoso Valeriano Sanchez, Amaia Maseda, Txomin Iturralde (2014), The role of internal social capital in organizational innovation an empirical study of family firm, *European Management Journal*, pp. 1-13
- Fruhling, A.L. and Siau, K. (2007), Assessing Organizational Innovation Capability and Its Effect on E-Commerce Initiatives, *The Journal of Computer Information Systems*, Vol. 48 No.1, pp. 133-45
- Kumar Naresh and Raduan Che Rose (2010), Examining the link between Islamic work ethic and innovation capability, *Journal of Management Development* Vol. 29 No. 1, pp. 79-93, (2012). The impact of knowledge sharing and Islamic work ethic on innovation capability, *Cross Cultural Management* Vol. 19 No. 2, pp. 142-165
- Leana Carrie R , Frits K Phil (2006), social capital and organizational performance: evidence from Urban public schools, *Organization science*, vol. 17, no. 3, pp. 353-366
- Liao, Li-Fen. (2006). *A Learning Organization Perspective on*

- Knowledge-Sharing Behavior and Firm Innovation*. Human System Management IOSS Press, 25. 227-236.
- Lanrosen, S (2005), Customer Involvement in New Product Development: A Relationship Marketing Perspective, *European Journal of Innovation Management*, Vol. 8 No. 4, pp. 424-36.
- Lee Jia Sheng & Chia Jung Hsich (2010), A Research In relating Entrepreneurship, Marketing Capability, Innovation capability and Sustained Competitive Advantage, *Journal of Business & Economic Research*, September, 109-119.
- Lin Hsiu Fen (2007), Knowledge Sharing and Firm Innovation Capability: an Empirical Study, *International Journal of Manpower*, Vol. 28 No. 3/4, pp. 315-332
- Monica Hu, Meng-lei., Horng, Jeou-Shyan., Christine Sun, Yu-Hua.,(2009). *Hospitality Teams: Knowledge Sharing and Service Innovation Performance*. *Tourism Management*, 20. 41-50.
- Monica Hu, Meng-lei., Ou, Tsung-Lin., Chiou, Haw Jeng., Lin, Lee-Cheng. (2012). *Effects Social Exchange and Trust on Knowledge Sharing and Service Innovation*. *Social Behavior and Personality*, 40(5). 783-800.
- Rahab, Sulistyandari, Sudjono (2011), The Development of Innovation Capability of Small Medium Enterprises Through Knowledge Sharing Process: An Empirical Study of Indonesian Creative Industry, *International Journal of Business and Social Science*, Vol.2, November, 112-123.
- Romjin, Henny., Albaladejo, Manuel (2001), Determinants of Innovation Capability in Small UK Firms: An Empirical Analysis, *QEH Working Paper Series QEHWPS40*, Number 40.
- Salih Yesil, Zümrüt Hatice Sekkeli, Ozkan Dogan Kahramanmaraş Sütçü İmam (2012), An Investigation into the Implications of Islamic Work Ethic (IWE) in the Workplace *Journal of Economics and Behavioral Studies* Vol. 4, No. 11, pp. 612-624, Nov 2012 (ISSN: 2220-6140)
- Srivastava Abshishek, Kathriyn M Bartol (2006), Empowering leadership in management teams: effect on knowledge sharing, efficacy, and performance, *Academy of Management Journal*, Vol. 49, No. 6, 1239-1251.
- Wu Xiaobo and Sivalogathan (2013), Intellectual Capital for Innovation Capability: A Conceptual Model for Innovation, *International Journal of Trade, Economics and Finance*, Vol. 4, No. 3, pp. 139-143.
- Liao, Li-Fen. (2006). *A Learning Organization Perspective on Knowledge-Sharing Behavior*



*and Firm Innovation*. Human System Management IOSS Press, 25. 227-236.

Liao, Shu-hsien., Wu, Chi-Chuan., Hu, Da-Chian., Tsuei, Guang An. (2009). *Knowledge Acquisition, Absorptive Capacity, and Innovation Capability: An Empirical Study of taiwan's Knowledge-Intensive Industries*. World Academy of Science, Engineering and Technology, 53. 160-167.

Liao, Shu-hsien., Wu, Chi-Chuan., Hu, Da-Chian., Tsuei, Guang An. (2010). *Knowledge Acquisition, Absorptive Capacity, and Innovation Capability: An Empirical Study of taiwan's Knowledge-Intensive Industries*. International Journal of Human Social Sciences, 5(12). 759-766.



THE RELATIONSHIPS AMONG PERSONALITY TRAITS, JOB  
STRESS, AND CAREER DEVELOPMENTAL SATISFACTION OF  
LIFEGUARDS IN TAIWAN

Chia-Ming Chang

Dep. of Physical Education, Health & Recreation,  
National Chiayi University, Chiayi 621, Taiwan

[gr5166@yahoo.com.tw](mailto:gr5166@yahoo.com.tw)

Huey-Hong Hsieh

Dep. of Leisure Management,  
Taiwan Shoufu University, Tainan 721, Taiwan

[nancylin809@gmail.com](mailto:nancylin809@gmail.com)

Hsiu-Chin Huang\*

Dep. of Tourism, Leisure, and Entertainment Management,  
Tatung Institute of Technology, Chiayi 600, Taiwan

\*corresponding author: [op5166@yahoo.com.tw](mailto:op5166@yahoo.com.tw)

Yeun-Cheng Lin

Dep. of Physical Education, Health & Recreation,  
National Chiayi University, Chiayi 621, Taiwan

[ching4934@yahoo.com.tw](mailto:ching4934@yahoo.com.tw)

Abstract

The purpose of this study is to analyze the potential impacts of personality trait and job stress on career developmental satisfaction. As such, qualified lifeguards and lifeguard coaches from 18 cities in Taiwan were targeted as main research samples. According to the quota sampling method, 600 survey questionnaires were distributed and 529 valid ones were obtained with a high response rate of 88.2%. Through hierarchi-

cal regression analysis, lifeguards' background variables were found to be significant predictors to their career developmental satisfaction with predictability power of 5% (in model 1) and 8.4% (in model 2, hereafter Big Five Personality Model). It was noted that the higher level of openness the lifeguards were, the higher their career developmental satisfaction was. On contrast, higher level of neuroticism would lead to lower career developmental satisfaction. In model 3 of control background variables and Big Five Personality Trait Model variables with the addition of job stress, these variables were found to be significant predictors to lifeguards' career developmental satisfaction with predictability of 10.8%, implying that the higher job stress lifeguards perceived would lower their career developmental satisfaction. The research hopes to provide lifeguard-training authorities with useful guidelines and emphatically recommends them to have sufficient understanding of lifeguards' personality traits, work stress, and career developmental satisfaction.

Keywords: Lifeguards, Personality Trait, Work Stress, Career Developmental Satisfaction, Big Five Personality Trait Model

### Introduction

Taiwan's geographical characteristics are uniquely surrounded by the sea with particular water habitat diversity and the total coastline length of about 1,566 km and the sea territory of approximately 170,000 square kilometers, which is 4.72 times in comparison with total land area. On elaborating this advantage, Liu et al. (2012) through conducting a survey of Taiwan's sport tourism resources propose that sport tourism resources in Taiwan can be based on the integration of water sports activities and sport tourism experience achieved throughout coping with environmental challenges to stimulate citizens' engagement in sport tourism activities.

Concerning the context of Taiwan with abundant water and land resources especially in the northern and southern regions, once these resources are effectively exploited and utilized, Taiwan will definitely be able to develop a wide range of sports tourism activities as well as the sports industry.

In water sport activities, in addition to enjoying the fun and benefits of exercise activities, potential emergencies and dangers are the issues that require significant attention. According to the sports statistical report of Sports Affairs Council, Executive Yuan in 2011, accidental drowning or submerged deaths accounts for 14.5% of total 100,000 cases of death (Ministry of Health and

Welfare, Executive Yuan, Taiwan, 2012). Therefore, in order to increase citizens' security when getting engaged in water activities, swimming management regulations have been put into validity from 2006, as being stated in Article VIII "Swimming pool operating managers should in accordance with the total area of the pool to configure sufficient qualified lifeguards; simultaneously, the assigned lifeguards should ensure their timely presence of execution endeavors."

Additionally, on facing emergencies, lifeguards are strongly required to have not only a high degree of stress resistance as well as adaptability abilities in order to cope well with challenges in the workplace but also site management capability, satisfactory customer service, professionalism, and appropriate attitude. Due to these reasons, professional lifeguard job has been considered of great importance. Based on this premise, Lin et al. (2008) through conducting a thorough analysis of the negligence categories of swimming pool drowning accident cases in Taiwan using 44 judicial criminal case judgments of swimming pool drowning accidents from January 1985 to August 1996 find that main negligence faults can be categorized into seven kinds which are lifeguard negligence, lifeguard insufficiency, no warning signs, no life-saving

appliances, lack of facility, care and duty negligence, and improper instructions. Among them, lifeguard negligence accounts for the major part of 59.1%, followed by lifeguard insufficiency (27.3%). Regarding the degree of being guilty of these seven types of negligence faults, lifeguard negligence is evaluated highest at the value of 84.6%, followed by lifeguard insufficiency (75.0%) while the remaining types are perceived to be of being 100% guilty. Hence, from these data, it can be observed that lifeguard job often get suffered from a generally high degree of heavy workload.

For the operation of water activity-related or indoor water activity industries, ensuring site security is the most critical business principles; subsequently, the recruitment of lifeguards with professional knowledge is considered even more important. On response, many industries in recruitment processes have widely adopted the Big Five Personality Trait Model as the basis for staff recruitment test in order to understand whether employees' personality traits and job characteristics are matched (Vianen and Kmieciak, 1998).

In the extant literature, Big Five Personality Trait dimensions have been commonly acknowledged to affect individuals' emotional intelligence (Fabio and Palazzeschi, 2009), compressive

strength (Lockenhoff et al., 2011), self-efficacy (Caprara et al., 2011), job satisfaction (Li et al., 2010; Ilies et al., 2009), crisis decision (Jin et al., 2009), job burnout (Lockenhoff et al., 2009), turnover intention, and other work-related psychological characteristics. Base on these premises, this study aims to utilize the Big Five Personality Trait Model in the field of lifeguard job to sufficiently explore the potential impacts of lifeguards' personality traits.

Noteworthy, one of the main concerns of organizational behavior is job stress since it has been widely considered to have direct impacts on the organization and work performance through triggering individuals to feel uncomfortable, causing inevitable failures, giving-up intention, depression, and other negative emotions which are not conducive to individuals' emotion at work (Parker and Decotiis, 1983). Due to these reasons, in various work situations, heavy job stress is assumed to inevitably exert directly negative impact on individuals, which in turn makes them generate job burnout feelings. This idea has been supported in a wide range of previous studies that individuals with greater job stress will express higher job burnout and turnover intention (Brewer and McMahan, 2003; Ray, 1991). On contrast, individuals with lower exposure to job stress express lighter burnout

situations and turnover intention (Mearns and Cain, 2003). It is noted that from lifeguards' concerns, job stress derives from failure to acknowledge needed organizational support, care and other social support, which in turn strongly causes them to leave the organizations or switch careers. Taking this point, this study also attempts to sufficiently explore the potential impacts caused by job stress in the field of lifeguard job.

Montross and Shinkman (1981) believe that career developmental satisfaction is the continuous process of development of individuals during getting engaged in their duties and roles through work activities, being deeply reflected through their psychology and physical self-concepts as well as social interactions, which in turn strongly effect their own career choice and career adjustment. Additionally, career developmental satisfaction has been defined as a future time orientation including a wide range of past and future planning which exerts a direct relationship on employees' overall life satisfaction (Moore, 1986). In line with this, Sherman and Bohlander (1992) and Goodman and Hansen (2005) prove that career development satisfaction effectively mitigates employees' turnover intention while positively strengthening employees' morale. Further elaborating, Budd and

Broad (1996) claim that employees' career development satisfaction can ultimately improve their job satisfaction. Therefore, sufficient understanding of domestic lifeguards' career development satisfaction is expected to beneficially provide guidance that help improve lifeguards' willingness to stay and continuous contributions to the organizations. Taking this point, this study also attempts to investigate lifeguards' career developmental satisfaction.

#### *The Relationship between Personality Traits and Job Stress*

Tsai (2008) through conducting focus group interviews with employees with more than 10 years of working seniority in insurance companies to investigate the relationships among personality traits, job stress, and career development finds that the biggest sources of stress derives from the situations that employees cannot perceive their companies' support and assistance. Accordingly, it is assumed that personality traits can predict encountered job stress. In line with this, Lee et al. (2009) by targeting elementary and junior school teachers in Hualien County to examine the relationships among background variables, personality traits, and job stress claim that their overall personality traits tend to be positive and personality traits can effec-

tively predict different kinds of job stress.

In sum, the above literature has indicated that personality traits exert predictive power on job stress. Based on these premises, this study aims to explore the relationships between different personality traits with job stress.

#### *The Relationship between Personality Traits and Career Developmental Satisfaction*

When individuals encounter job stress, their subjective experience is perceived as one of the key factors influencing whether they can be able to work under pressures and complete their tasks or unable to cope with pressures as well as get suffered. Therefore, sufficient understanding of whether individuals perceive their own tasks have met each dimensions will efficiently help comprehending the critical factors affecting employees' turnover intention (Huang, 2009). Additionally, Wang (2007) through exploring the correlations between nurses' personality traits, work values, job stress, and career satisfaction suggests that nurses' higher personality trait of extraversion effectively enhance their overall job satisfaction. Moreover, Chen (2011) through conducting survey questionnaires with 650 employees of high-tech industries in Kaohsiung and

Tainan to examine the relationships among personality traits, career satisfaction, job characteristics, and career management argued that job autonomy, feedback perceived from the job, and job rotation have significant mediating effects on the relationship between personality traits and career satisfaction. Furthermore, Levy et al. (2011) through targeting 684 professionals as the research objects to explore the relationships between personality traits and career satisfaction indicate significantly positive correlations between five major personality trait dimensions and career satisfaction. In other words, employees with higher extraversion personality trait will achieve higher career satisfaction.

In sum, the above-mentioned literature has suggested that five personality trait dimensions exert certain predictive power on career satisfaction. Taking this point, this study aims to investigate the correlations between personality traits on career developmental satisfaction.

#### *Relationship between Job Stress and Career Developmental Satisfaction*

In the extant literature, work stress has been widely perceived to have crucial impacts on career developmental satisfaction; however, the correlation between them is negative (Parasuraman and Alutto, 1984; Jamal, 1990). In other

words, higher job stress will lower individual's career developmental satisfaction and vice versa. Further elaborating, Weiten (1998) argues that human reactions when being suffered from all kinds of pressure can be categorized into three main dimensions of emotional responses, physiological responses, and behavioral responses. In terms of emotional responses, common phenomena observed are sense of feeling troubled and droopy, anger, anxiety as well as sadness. On facing stress in work situations, individuals may produce emotional exhaustion and irritation, which in turn negatively affects their work performance and prohibits them from accomplishing their tasks, being commonly referred as job burnout phenomenon.

On support, Wu (2010) through carrying out survey questionnaires with 600 employees of six high-tech companies in Hsinchu Science Park to investigate the relationship between job stress and career developmental satisfaction in the high-tech industry presents that employees' job stress and career satisfaction are significantly correlated. Noteworthy, different personal background variables (e.g., age, working seniority, highest educational background) express significant differences on various types of job stress (e.g., career prospects, family factors, challenging requirements,



workload, job characteristics, overall job pressures). Additionally, high-tech industry personnel with different educational background also exert significant differences on their career developmental satisfaction (e.g., administrative support, colleague interactions, physical environment, overall career satisfaction). Therefore, it is strongly expected that job stress have explanatory power on career developmental satisfaction.

In sum, it has been concluded from the above studies that five personality trait dimensions and job stress exert certain influences on career developmental satisfaction. Nonetheless, the extant literature has mainly focused on exploring health care and food and beverage industries as well as from targeting managers' perception to conduct investigations. There have been very few studies investigating the field of lifeguards' work, in which job stress plays a critical role in determining their work performance. Therefore, to fill in this research gap, this study aims to provide sufficient understanding of the factors affecting lifeguards' career developmental satisfaction since this will beneficially help improve lifeguards' work performance and career satisfaction as well as stimulate their willingness in continuing their lifeguard job, consequently significantly reduces potential turnover intention

## Method

### *Sample*

In accordance with the research purposes, this study targeted three Taiwan's most famous associations in the field, namely Chinese Taipei Water Life Saving Association, The Red Cross Society of the Republic of China, and Chinese Taipei Underwater Federation as the research objects. Subsequently, a total of 600 survey questionnaires were distributed to qualified water-safety lifeguards and lifeguard coaches over 18 counties of Taiwan (excluding islands) using the quota sampling method. After eliminating incomplete responses and 17 questionnaires with random answers, 529 valid questionnaires were valid for conducting data analysis, achieving a high response rate of 88.2%.

### *Measurements*

The questionnaire was divided into four main parts. The first part aimed to collect data regarding gender, age, educational background, and whether the participants were swimmers or non-swimmers.

The personality trait scale was presented in the second part. Based on Horng (2009) and relevant literature in the field, a total of 25 questionnaire items were developed to measure five

personality trait dimensions which were openness (5 items), conscientiousness (5 items), extraversion (5 items), agreeableness (5 items), and neuroticism (5 items). Concerning reliability, the achieved Cronbach's  $\alpha$  values for these dimensions were 0.83 (openness), 0.89 (conscientiousness), 0.88 (extraversion), 0.90 (agreeableness), and 0.94 (neuroticism). Additionally, the Cronbach's  $\alpha$  value of the total scale was 0.88, indicating a very high internal consistency, thus reliability for the scale.

In the third part, based on Huang et al. (2013) and Lu (2011), job stress scale was developed through three main dimensions of workload (8 items), work obstruction (7 items), and role and professional conflicts (5 items), being evaluated using Likert five-point scale ranging from "strongly agree" to "agree", "no comment", "disagree", and "strongly disagree". The achieved Cronbach's  $\alpha$  values for these dimensions were 0.76 (workload content), 0.81 (working-hour load), 0.89 (work obstruction), and 0.87 (role and professional conflicts), respectively. Additionally, the Cronbach's  $\alpha$  value of the total scale was 0.92, indicating a very high internal consistency, thus reliability for the job stress scale.

In the final part, based on Greenhaus et al. (1990), a total five question-

naire items for measuring career developmental satisfaction scale were developed, being evaluated using Likert five-point scale which ranged from "strongly agree" to "agree", "no comment", "disagree", and "strongly disagree". The achieved Cronbach's  $\alpha$  value for the career developmental satisfaction scale was 0.92, indicating a very high internal consistency, thus reliability for the career developmental satisfaction scale.

### *Data Processing*

The current study used hierarchical regression analysis to analyze the data. Hierarchical regression analysis is the methodology that is based on multiple variables put in block models to conduct analysis for discovering the predictors with significant explanatory power, which is commonly referred to as the hierarchical regression method with input variable blocks (Chiou, 2006).

Accordingly, in this study background variables were set into the first block, five personality trait dimensions were set into the second block (hereafter Big Five Personality Trait Model), and job stress variables were put into the third block. These block models would be then tested for their explanatory power on lifeguards' career developmental satisfaction.

## Results

### *Demographic Analysis Results*

The demographic statistical analysis was presented as in Table 1. Out of 529 respondents, 404 were male (76.4%) while 125 were female (23.6%) and non-swimmers accounted for 76.7% (406 respondents) in comparison with 23.3% of swimmers (123 respondents). Regarding age, 25 lifeguards (4.7%) were between 18 and 20 years old, 187 (35.3%) were between 21 and 30 years old, 131 (24.8%) were between 31 and 40 years old, 118 (22.3%) were between 41 and 50 years old, and 68 (12.9%) were above 51 years old. In terms of working type, full-time lifeguards composed of 41.6% (220 respondents) while part-time lifeguards accounted for 58.4% (309 respondents). Concerning educational background, 20 lifeguards were less than junior high school level (3.8%), 173 had high school educational level (32.7%), 318 respondents graduated from college and university (60.1%), and 18 respondents obtained master degree and above (3.4%). Regarding monthly income, 22 (4.2%) lifeguards earned less than US\$660, 421 (79.6%) earned between US\$660 and US\$990, and 86 (16.3%) earned more than US\$990. As for working seniority, 219 lifeguards (41.4%) had been working under 3 years, 228 (43.1%) had working experience be-

tween 4 and 10 years, and 80 (21.7%) had been working for over 11 years.

### *The Impacts of Lifeguards' Background Variables, Personality Traits, and Job Stress on Career Developmental Satisfaction*

Through hierarchical regression analysis, this study expected to respectively analyze the impacts of lifeguards' personality traits and job stress on their career developmental satisfaction by sequentially examining three block prediction models. The achieved results were presented in Table 2 at the end of this article. Accordingly, Model 1 indicated that when being put into the models, lifeguards' background variables of gender, swimmers or non-swimmers, age, working type, educational background, monthly income, and working seniority exerted significant explanatory power on their career developmental satisfaction ( $R^2=0.050$ ,  $F=3.953$ ,  $p<0.05$ ). Therefore, it was concluded that the above background variables had significant explanatory power on lifeguards' career developmental satisfaction. Noteworthy, when their educational background was lower, their career developmental satisfaction would be higher ( $\beta = -0.155$ ,  $t = -3.376$ ,

Table 1. The demographic statistical analysis for lifeguards

variables	groups	n	%	variables	groups	n	%
gender	Male	404	76.4	educational background	Under junior high school level	20	3.8
	female	125	23.6		high school educational level	173	32.7
participated in swim teams	Yes	123	23.3		college and university	318	60.1
	No	406	76.7		master degree and above	18	3.4
age	between 18 and 20 years old	25	4.7	monthly income	Below NT \$20,000	22	4.2
	between 21 and 30 years old	187	35.3		between NT \$20,001 and \$30,000	421	79.6
	between 31 and 40 years old	131	24.8		exceeded NT \$30001	86	16.3
	Between 41 and 50 years old	118	22.3	Lifeguards seniority	less than 3 year	219	41.4
	exceeded 51 years old	68	12.9		between 4 and 10 years	228	43.1
Working type	full-time	220	41.6	exceeded 11 years	80	21.7	
	part-time	309	58.4				

$p < 0.01$ ). On contrast, higher monthly income was found to better enhance career developmental satisfaction ( $\beta = 0.136$ ,  $t = -3.075$ ,  $p < 0.01$ ).

In Model 2, five personality trait dimensions (e.g., openness, conscientiousness, extraversion, agreeableness, and neuroticism) were included to test their impacts on career developmental satisfaction. It was observed that their explanatory power on lifeguards' career developmental satisfaction reached significant level ( $R^2 = 0.084$ ,  $F = 3.944$ ,  $p < 0.01$ ) with an increase of 3.4% in explanatory power in comparison with the previous model ( $\Delta R^2 = 0.034$ ,  $\Delta F = 3.782$ ,  $p < 0.01$ ). Hence, it was proven that the addition of five personality trait dimensions could effectively promote the model's explanatory power. It was noted that among these dimensions, higher openness could lead to better career developmental satisfaction (standardizing  $\beta = 0.118$ ,  $t = 2.129$ ,  $p < 0.01$ ) whereas higher neuroticism would lower career developmental satisfaction (standardizing  $\beta = -0.092$ ,  $t = -2.115$ ,  $p < 0.05$ ). Therefore, it was concluded that only openness and neuroticism dimensions of personality traits exerted certain influences on lifeguards' career developmental satisfaction.

In Model 3, job stress was included for investigation. The analysis

results indicated its significant explanatory power on lifeguards' career developmental satisfaction ( $R^2 = 0.147$ ,  $F = 5.500$ ,  $p < 0.01$ ) with a considerable increase of 6.3% in explanatory power in comparison with the previous model ( $\Delta R^2 = 0.063$ ,  $\Delta F = 9.398$ ,  $p < 0.01$ ). The results indicated that lifeguards' background variables (e.g., educational background and monthly income) remained their significant explanatory power on lifeguards' career developmental satisfaction. Regarding five personality trait dimensions, it was noted that openness and neuroticism did not reach significant explanatory power. In sum, it was assumed that job stress had significant explanatory power on lifeguards' career developmental satisfaction. Specifically, higher job stress the lifeguards perceived would lower their career developmental satisfaction (standardizing  $\beta = -0.166$ ,  $t = -3.694$ ,  $p < 0.01$ ).

## Conclusion and Suggestion

### *Conclusion*

The demographic analysis results showed that part-time male lifeguards who were non-swimmers and in the age range between 21-30 years old, possessing college/university educational background and working seniority between 4 and 10 years, and earned between \$US660 and \$US990 for monthly in-

come took account for the major part of the total respondents.

Through utilizing hierarchical regression analysis, three prediction models were sequentially investigated for their explanatory power on lifeguards' career development forecasts satisfaction. Accordingly, Model 1 indicated a significant explanatory power of 5% of lifeguards' background variables (e.g., educational background, monthly income) on their career developmental satisfaction. In Model 2, five personality trait dimensions (e.g., openness, conscientiousness, extraversion, agreeableness, and neuroticism) were proven to exert significant explanatory power (8.4%) on lifeguards' career developmental satisfaction. Noteworthy, higher openness could stimulate better career developmental satisfaction. Meanwhile, higher neuroticism would inevitably lower career developmental satisfaction. Finally,

Model 3 which included background variables, five personality trait dimensions, and job stress for analysis strongly claimed their significant explanatory power (10.8%) on lifeguards' career developmental satisfaction, which in turn implied that lifeguards' career developmental satisfaction would be considerably lower under higher job stress.

#### *Suggestion*

This study finds that lifeguards who do their lifeguard job with courtesy, trust, friendliness, and are easy to get along with other people or to help others obtain higher scores in agreeableness personality trait than other respondents. On contrast, lifeguards with low neuroticism scores present different noteworthy viewpoints. From their perception, lifeguards' work and practices always face with emergencies which are often about life and strongly require them for immediate responses and appropriate handling solutions. Due to this negative personality trait, these kinds of lifeguards will easier acknowledge tension, frustration, anxiety, and a lack of sense of security, which in turn make them to be unsuitable to get engaged in the lifeguard job. Therefore, this study proposes that the swimming pool lifeguard industries should conduct the personality trait tests on recruiting processes to ensure the chosen lifeguards are appropriate. The lifeguards with high neuroticism should be paid more attention to their work adaptability in order to prevent both lifeguards and swimmers from potential injuries.

In addition, the results achieved in this study show that current lifeguards' career developmental satisfaction is not very high. It should be kept in mind that lifeguards with higher openness express better career developmental satisfaction

whereas the ones with higher neuroticism would inevitably exert lower career developmental satisfaction. In other words, it can be concluded that when job stress is higher, lifeguards' career developmental satisfaction will considerably decrease. Therefore, relevant industries are strongly recommended to refer to the above findings in order to choose the lifeguards with higher openness personality trait once conducting recruitment or

training programs. Moreover, decompression courses should be constantly established to improve lifeguards' career developmental satisfaction. Finally, the proposed industries are suggested to make more incentives to motivate lifeguards' willingness in facing with challenges and completing their tasks, which in turn beneficial helps promote higher operating efficiency for the industries.

### References

- Brewer, E. W., & McMahan, J. (2003). Job stress and burnout among industrial and technical teacher educators. *Journal of Vocational Education Research*, 28 (2), 125-140.
- Budd, M. L., & Broad, M. L. (1996). Training and development for organizational performance. In J. L. Perry (Ed.), *Handbook of public administration* (pp. 424-439). San Francisco, CA: Jossey-Bass.
- Carprara, G. V., Veochione, M., Alessandri, G., Gerbino, M., & Barbaranelli, C. (2011). The contribution of personality traits and self-efficacy beliefs to academic achievement: A longitudinal study. *British Journal of Educational Psychology*, 81(1), 78-96.
- Chen, S. Z. (2011). The study of the relationship among personality traits, job characteristic and career satisfaction: The moderator of career development. Unpublished Master's Thesis, I-Shou University, Taiwan.
- Chiou, H. J. (2006). Quantitative research and statistical analysis in social & behavioral sciences. Taipei, Taiwan: Wu- Nan Books.
- Fabio, A., & Palazzeschi, L. (2009). An in-depth look at scholastic success: Fluid intelligence, personality traits or emotional intelligence? *Personality and Individual Differences*, 46(5), 581-585.
- Goodman, J., & Hansen, S. (2005). Career development and guidance programs across cultures: The gap



- between policies and practices. *The Career Development Quarterly*, 54, 57-65.
- Greenhaus, J. H., Parasuraman, S., & Wormely, W. M. (1990). Effects of race on organizational experiences, job performance evaluations, and career outcomes. *Academy of Management Journal*, 33(1), 64-86.
- Horng, G. S. (2009). The effects of Tae Kwon Do Club students' personality traits and sport attitude on sport commitment. Unpublished Master's Thesis, National Yunlin University of Science and Technology, Taiwan.
- Huang, B. Y. (2009). Impact of job stress on job satisfaction and burnout: a meta-analysis. *Bulletin of Educational Psychology*, 40(3), 439-462.
- Huang, H. C., Lai, Y. H., Hsieh, H. H., & Chang, C. M. (2013.10). Verifying the model for the factors influencing Taiwanese swimming pool lifeguards' willingness to work. *Pensee*, 75(10), 14-24.
- Ilies, R., Fulmer, I. S., Spitzmuller, M., & Johnson, M. D. (2009). Personality and citizenship behavior: The mediating role of job satisfaction. *Journal of Applied Psychology*, 94(4), 945-959.
- Jamal, M. (1990). Relationship of job stress and type-A behavior to employees' job satisfaction, organizational commitment, psychosomatic health problems, and turnover motivation. *Human Relations*, 43 (8), 727-738.
- Jin, L., Watkins, D., & Yuen, W. (2009). Personality, career decision self-efficacy and commitment to the career choices process among Chinese graduate students. *Journal of Vocational Behavior*, 74(1), 47-52.
- Lee, S. C., Wang, M. C., & Wu, Y. Y. (2009). A study of teachers' personality traits and job stresses on elementary school & junior high school resource room teachers in Hualien county. *Bulletin of Eastern-Taiwan Special Education*, 11, 101-128.
- Levy, J. J., Richardson, J. D., Lounsbury, J. W., Stewart, D., Gibson, L. W., & Drost, A. W. (2011). Personality traits and career satisfaction of accounting Professionals. *Individual Differences Research*, 9(4), 238-249.

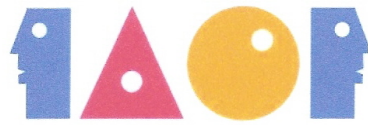
- Li, N., Liang, J., & Crant, J. M. (2010). The role of proactive personality in job satisfaction and organizational citizenship behavior: A relational perspective. *Journal of Applied Psychology*, 95(2), 395-404.
- Lin, C. T., Ho, C. L., Chen, S. C., & Chiou, J. S. (2008). A Study of the Relationship between the Criminal Judgments on the Negligence Category in Swimming Pool Drowning Accidents and the Results of Judgments in Taiwan. *Sports & Exercise Research*, 10(2), 55-69.
- Liu, C. C., Yen, H. M., Tsai, Y. C., & Hsieh, C. W. (2012). Survey on sports tourism resources in the Taiwan area. *Journal of Sport and Recreation Management*, 9(1), 1-20.
- Löckenhoff, C. E., Duberstein, P. R., Friedman, B., & Costa, P. T. (2011). Five-factor personality traits and subjective health among caregivers: The role of caregiver strain and self-efficacy. *Psychology and Aging*, 26(3), 592-604.
- Löckenhoff, C. E., Terracciano, A., & Costa, P. T. (2009). Five-factor model personality traits and the retirement transition: longitudinal and cross-sectional associations. *Psychology Aging*, 24(3), 722-728.
- Lu, H. Y. (2011). A study on the relationship of job satisfaction, job stress, organizational commitment, and job performance among administrators in governmental physical education organizations. Unpublished doctoral dissertation, National Taiwan Normal University, Taiwan.
- Mearns, J., & Cain, J. E. (2003). Relationships between teachers' occupational stress and their burnout and distress: Roles of coping and negative mood regulation expectancies. *Anxiety, Stress and Coping*, 16(1), 71-82.
- Ministry of Health and Welfare, Executive Yuan, Taiwan (2012). Analysis of the main causes of death in the Republic of China 2011. Retrieved August 13, 2013 from [http://www.doh.gov.tw/CHT2006/DM/DM2\\_2.aspx?now\\_fod\\_list\\_no=12336&class\\_no=440&level\\_no=4](http://www.doh.gov.tw/CHT2006/DM/DM2_2.aspx?now_fod_list_no=12336&class_no=440&level_no=4)
- Montross, D. H., & Shinkman, C. J. (1981). *Career development in the 1980s: Theory and practice*. Springfield, IL: Charles C. Thomas.

- Moore, B. M. (1986). Satisfaction with teaching as a job and as a career. Unpublished doctoral dissertation, International Microfilms University.
- Parasuraman, S., & Alutto, J. A. (1984). Sources of outcomes of stress in organization settings: Toward the development of a structural model. *Academy of Management Journal*, 27 (2), 330-350.
- Parker, D. F., & DeCotiis, T. A. (1983). Organizational determinants of job stress. *Organizational behavior and human performance*, 32, 160-177.
- Ray, E. B. (1991). The relationship among communication network roles, job stress, and burnout in educational organizations. *Communication Quarterly*, 39 (1), 91-102.
- Sherman, A. W., Jr., & Bohlander, G. W. (1992). *Managing human resources*. Cincinnati, OH: South-Western Publishing.
- Sports Affairs Council, Executive Yuan, Taiwan (2011). *Taiwan 2011 Physical Education Statistics*. Taipei, Taiwan: Sports Affairs Council, Executive Yuan.
- Tsai, D. T. (2008). Research into the career development, personality and working pressure of the claim investigator in Taiwan life insurer. Unpublished Master's Thesis, Tamkang University, Taiwan.
- Vianen, A. E. M., & Kmiecik, Y. M. (1998). The match between recruiters' perceptions of organizational climate and personality of the ideal applicant for a management position. *Climate and Ideal Characteristics*, 6(3), 153-163.
- Wang, Y. W. (2007). A study on the relationship among personality traits, work values, work stress, and job satisfaction of nurses. Unpublished Master's Thesis, National Cheng Kung University, Taiwan.
- Weiten, W. (1998). *Psychology : Themes and variations*. Pacific Grove: Brook/Cole.
- Wu, W. W. (2010). A study on pressure at work and satisfaction at work of high tech industry employees. Unpublished Master's Thesis, National Kaohsiung Normal University, Taiwan.

Table 2. The hierarchical regression analysis of lifeguards' personality traits and job stress on their career developmental satisfaction

Independent variables	Model 1			Model 2			Model 3		
	Beta	t	p	Beta	t	p	Beta	t	p
Gender	-.075	-1.713	.087	-.060	-1.378	.169	-.053	-1.252	.211
swimmers or non-swimmers	-.057	-1.285	.199	-.043	-.970	.332	-.045	-1.055	.292
age	-.060	-1.116	.265	-.047	-.866	.387	-.025	-.473	.636
working type	.000	-.002	.998	-.012	-.279	.780	.008	.180	.857
educational background	-.155	-3.376*	.001	-.158	-3.476*	.001	-.155	-3.490*	.001
monthly income	.136	3.075*	.002	.144	3.273*	.001	.115	2.680*	.008
working seniority	-.026	-.482	.630	-.037	-.690	.490	-.043	-.837	.403
openness				.118	2.129*	.034	.100	1.853	.064
conscientiousness				-.029	-.499	.618	.000	.005	.996
extraversion				.090	1.542	.124	.078	1.369	.172
agreeableness				-.035	-.622	.534	-.040	-.714	.475
neuroticism				-.092	-2.115*	.035	-.065	-1.392	.164
job stress							-.166	-3.694*	.000
R <sup>2</sup>		.050			.084			.108	
F		3.953			3.944*			4.779*	
P		.000			.000			.000	
ΔR <sup>2</sup>		.050			.034			.024	
ΔF		3.953			3.782*			13.646*	
ΔP		.000			.002			.000	

\* p<.01



THE INFLUENCE OF RESOURCE DEPENDENCE AND  
ORGANIZATION LEARNING ON R&D  
ALLIANCE PERFORMANCE

Jen-Yin Yeh

Department of Commerce Automation and Management  
National Pingtung University  
jenyiny@mail.nptu.edu.tw

Ching-Yi Lin

Department of International Trade,  
National Pingtung University  
cylin@mail.nptu.edu.tw

Chao-Kuei Chang

Department of International Trade,  
National Pingtung University  
up20519@gmail.com

Shu-Hui Su

Department of Accounting,  
I-Shou University, Taiwan, Republic of China  
shuhuisu@isu.edu.tw

Lee-Chia Huang

Department of Statistics  
University of Toronto, St. George  
lk.huang@mail.utoronto.ca

Abstract

Enterprises can advance core competence and reduce environmental uncertainty through R&D alliances. Drawing on the theories of resource dependence and organization learning, this paper examines the performance of the firms in an R&D alliance and if resource dependence and organization learning affect alliance performance. The study also examines the performance of such R&D alliances with four dimensions of a balanced scorecard. The research results show the members of R&D alliance are satisfied with the achievements. And, there are positive correlations between

resource dependence, organizational learning and the four dimensions of the balanced scorecard. These results have important implications for researchers investigating the effectiveness of R&D alliances as well as practitioners seeking to improve alliance performance in R&D alliances.

Key Words: R&D alliance, resource dependence, organizational learning

### Introduction

Alliances are formed between two or more firms to attain strategic objectives. The rationale behind forming such alliances is that if revenue, growth, cost or risk reduction can be obtained through cooperation, then there is no need to procure these things internally by employing one's own resources and energy. Alliances are formed for several specific reasons, such as entering new markets, reducing manufacturing costs, and developing and diffusing new technologies rapidly (Walters, Peters, & Dess, 1994). Seth and Chi (2005) suggest that strategic alliances can be thought of as real options offered to alliance partners, as they allow for purposive relationships between firms that share common objectives and strive for mutual benefits (Albers, Wohlgezogen, & Zajac, 2016). The emergence of new global competitors coupled with the convergence of high technology industries and the increasing speed and cost of technological development prompts an increasingly more uncertain environment for firms, requiring them to be efficient, innovative, and flexible. Many organizations have found it highly challenging to address these changing conditions through acquisition or internal technological development alone. Thus, it is becoming increasingly important for the development of alternatives to internal

R&D (Neill et al., 2001). Alliances have increasingly been viewed as a key means by which firms search for opportunities and access resources to engage in corporate entrepreneurship (Heavey & Fox, 2016).

R&D and innovation management have to operate in a context of increasing complexity, particularly enriched by emerging technologies and new opportunities for the transformation new business models (Gauthier, 2014). The management of R&D has changed throughout the years, moving from an isolated view to a more connected and complex situation to handle. Most R&D management research is composed of some different sub-fields: agency costs and ownership structure, new product portfolio management, technological innovation, R&D internationalization, R&D capabilities, knowledge flows, and new product development processes. R&D alliances largely aim to gain access to new and complementary technologies and to speed up innovation or learning processes (Dunning, 1995). This type of alliance is characterized by high risk, uncertainty, and a potentially high payoff, which is a typical situation for an exploration alliance. It is also possible that international partners may enter collaborative R&D arrangements with a more deliberate learning purpose to upgrade their global competitiveness (Dunning, 1995). Porter and Fuller (1986) also argue that

partnerships and collaborations are a more rapid means of competitive repositioning than internal development and are less costly and more flexible than mergers. Enterprises can improve core competence and reduce environmental uncertainty through R & D alliances. However, not all alliances are successful and success rate of an alliance is not high; studies (Lambe, Spekman, & Hunt, 2002) find that as many as 70% of alliances are not successful. Firms often spend more time on optimizing the hard issues that are typically easier to handle than the “soft” issues. “Soft” issues such as partner commitment, personal chemistry, subversive objectives or misunderstood national or organizational cultures are the core reasons for failure and are all notoriously difficult to manage (Bitran, 2002). Where there is high asset specificity, high levels of uncertainty, and frequent transactions, managers will perceive high levels of both performance and relational risk that need to be controlled by certain governance effectively managed for their benefits to be realized (Ireland, Hitt, and Vaidyanath, 2002).

Most alliance studies focus on international alliances (Narula, and Dunning, 1998; Ahlstrom, et al., 2014) and conceptualizations of performance in the alliance literature seem inconsistent and ambiguous (Robson et al., 2008) . Managing alliances is crucial for firms to gain competitive advantage and create value with strategic alliances (Ireland, 2002). The purpose of this study is to investigate the relationship between resource dependence, organizational learning and the performance of R&D alliance. The performance measures are related

to four major managerial perspectives, and are aimed at providing top managers with a comprehensive view of their business.

### Theory and Hypothesis

Many researchers have criticized what they perceive as an overemphasis on achieving and maintaining short-term financial results that can cause a bias towards investing in projects with short-term benefits and leading to insufficient investments in projects with long-term value creation, particularly in the intangible and intellectual assets that R&D projects usually produce. To overcome this obstacle, the Balanced Scorecard (BSC) presents four other perspectives that ensure a more balanced evaluation of the project (Eilat, Golany et al. 2008). Adoption of various strategies by firms also determines firm performance. The balanced scorecard is a strategic planning and management system that is used extensively in business and industry, government, and nonprofit organizations worldwide to align business activities to the vision and strategy of the organization, improve internal and external communications, and monitor organization performance against strategic goals (Sharma, 2009). The balanced scorecard (Kaplan and Norton, 1996) is a model which integrates financial and non-financial strategic measures. It is different from other strategic measurement systems in that it contains outcome measures and the performance drivers of outcomes, linked together in cause-and-effect relationships (Kaplan and Norton, 1996a, p. 31; Kaplan and Norton, 1996b, p. 53). Kaplan and Norton (1996, p.31) assume the following



causal relationship: measures of organizational learning and growth, measures of internal business processes, measures of the customer perspective and financial measures. The causal paths from the measure indicators on the scorecard should be linked to financial objectives. This procedure implies that strategy is translated into a set of hypotheses about cause and effect (Kaplan and Norton, 1996a, p. 30; Kaplan and Norton, 1996b, p. 65). The logic leads to the first three hypotheses:

*H1a: Learning & Growth is positively associated with Internal Business Process*

*H1b: Internal Business Process is positively associated with Customer Performance*

*H1c: Customer Performance is positively associated with Financial Performance*

Resource dependence theory has become one of the most influential theories in organizational theory and strategic management. Resource Dependence theory helps to explain how organizations strive to reduce environmental interdependence and uncertainty through strategies that, at least partially, enact their environment (Gaffney, et al., 2013). Resource dependence theory suggests that organizations are open systems dependent on contingencies in the external environment. The three key tenets of this theory are: (1) the importance of an organization's ability to acquire and maintain resources (tangible and intangible) to its survival; (2) that the organization exists within a network of organizations that affect access to and

the flow of needed resources; and (3) that firms strive to reduce dependence on other organizations (in terms of access to resources), while simultaneously trying to make other organizations more dependent on them (Parmigiani, & Mitchell, 2009). Parmigiani & Mitchell (2009) argued that concurrent sourcing of complementary components becomes more common in two cases: when firms have relevant knowledge about the components in conjunction with suppliers (interfirm expertise) and more surprisingly, within the firm (within-firm shared expertise). Moreover, Park, et al., (2002) examined interactions between internal and external drivers of alliance formation and argued that firms' use of alliances as a mechanism to adapt to market uncertainties is contingent on internal resource conditions. Considering the above evidence, it is hypothesized that:

*H2a: The greater the extent of a firm's resources dependence from the alliances, the greater the likelihood that it will enhance learning & growth after joint the alliances*

*H2b: The greater the extent of a firm's resources dependence from the alliances, the greater the likelihood that it will enhance internal business process after joint the alliances*

*H2c: The greater the extent of a firm's resources dependence from the alliances, the greater the likelihood that it will enhance customer performance after jointing the alliances*

*H2d: The greater the extent of a firm's resources dependence from the alliances, the greater the likelihood that it will enhance financial performance after jointing the alliances*

Organizational learning is “a conscious or unconscious process affecting the organizational action that contains its own factors by means of knowledge acquisition, reaching the knowledge and evaluating the knowledge with the help of organizational memory,” (Kalkan, 2006).

Researchers have defined organizational learning as a change in the organization’s knowledge that occurs as a function of experience (Fiol & Lyles, 1985). Organizational learning also was captured in a “learning cycle”. Learning processes were rational from the perspective of the organization – they were directed toward performance improvement, and, in the long run, could result in an improved match between organizational arrangements and environmental constraints (Schulz, 2002).

The existence of skill concentration across knowledgeable firms creates a learning incentive for synchronized sourcing of corresponding components. Organization learning is hard to be ignored in the new economic age. Numerous studies have shown that organization learning has been established as an important capability for achieving competitive advantage (Brockman & Morgan, 2003; Fiol & Lyles, 1985). An empirical study of Michna (2009) showed an empirical relationship between organization learning and

organizational performance. Ancona and Caldwell (1992) found that new product teams whose members were from a more diverse set of functional areas communicated more outside their teams, which led to more creative solutions. Firms learn from their partners and improve firm benefits from alliances. Whereas weak firms may seek alliances to improve their performance, strong performers may enter into a partnership to leverage some of their successes (Gulati, 1995). The learning opportunities will be most productive when the firms also have strong knowledge transfer (Cohen and Levinthal, 1990). Considering the above evidence, it is hypothesized that:

*H3a: The greater the extent of a firm's Organization learning the greater the likelihood that it will enhance Learning & Growth after jointing the alliances*

*H3b: The greater the extent of a firm's Organization learning, the greater the likelihood that it will enhance internal business process after jointing the alliances*

*H3c: The greater the extent of a firm's organization learning, the greater the likelihood that it will enhance customer performance after jointing the alliances*

*H3d: H2d: The greater the extent of a firm's organization learning, the greater the likelihood that it will enhance financial performance after jointing the alliances*

## Method

The dyads in our study consisted of alliances between a steel company and its partners. Case company is the largest integrated steel maker in Taiwan. Steel industry in Taiwan faces the threats of technical bottleneck, industry shift-out, and high labor cost. For the development of domestic steel industry, Case company determined to accelerate innovative research for high value products. Nine research alliances have been established in 2006. Forty-seven companies and seven research institutes participated in these research alliances. Case company hopes to cooperate with the downstream customers to generate mutual benefits and to help develop the materials, helping to integrate upstream, midstream, and downstream manufacturers in Taiwan. The R & D alliance integrated and effectively melded the existing production-sales platforms of the group members to maximize the benefit of synergism. The alliance developed a high-value-oriented strategy of industrialization connection with the core technologies, which was for the time the leading one in Taiwan.

All the items are measured via seven-point scales. All the model's constructs are measured using reflective indicators. Organizational learning (OL) involves the acquisition of information, dissemination of knowledge, shared interpretation, and organizational memory (Slater & Narver, 1995). This construct was measured using an existing scale developed by Argyris, & Schon (1978). Resources dependence was measured using three items adapted from Pfeffer and Salancik (2003) and

three items adapted from Yoshino and Rangan (1995). We measured financial performance adapted from Hultink & Robben (1995) and Kaplan & Norton (1996), customer performance adapted from Delaney & Huselid (1996), internal business processes adapted from Olson et al. (1995) and organizational learning and growth adapted from Sarin & Mahajan (2001). Respondents were asked to rate their opinion on several items of the measurement scale (1 = completely disagree and 7 = fully agree). Also, to guarantee the content validity of this scale, both literature review and extensive discussions with academics and practitioners during the pre-test were carried out.

We chose the sample currently engaged in R&D alliances of case company and willing to participate in our study as the research setting. The research setting involved mail surveys of R&D, production, and financial managers from alliance companies. We sent 350 questionnaires, 100 questionnaires were received in usable form, representing a 28.57% response rate. Among the questionnaires, the majority of the respondents were technology managers (46%), followed by managers with alliance responsibilities (29%), production managers (21%). Table 1 illustrated the profile of the sample firms. More than 90% of the firms were aged between 21-50 years old. Nearly 61% of the firms had more than 300 employees, 30% of the firms have employees less than 200. Most firms (81%) had capital less than NTD 10 billion, 16% were above 100 billion. Most firm sales was less than NTD 0.5 billion (32%), followed by 1-5 billion (29%), 10-50 billion (21%), and above 50 billion (16%).

## Results

This study used partial least square (PLS) to test the hypotheses. The PLS not only estimates standardized regression coefficients, it considers measurement errors, which can then be used to measure the relationship between latent variables (Wold, 1985). Additionally, the PLS places minimal demands on sample size and residual distributions (Chin, 1998) and is more confirmatory research (Chin, 1998). We employed a bootstrapping method to compute significance levels.

The possibility of common method variance regarding the self-reported measure may also be a concern. This study used the Harman's one-factor test (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) to check the potential problems of common method bias, and the test results found that the first factor captured only 25.03 percent of the variables in the data, thereby suggesting that common method bias is not a problem. We first examined the measurement model to evaluate reliability, convergent validity and discriminant validity before testing the structural model. Table 2 shows the loadings and cross-loadings of the PLS. Individual item reliability can be examined by observing the item-to-construct loadings. In Table 2, all of the factor loadings were greater than 0.707, suggesting an acceptable quality of item reliability. Convergent validity can be examined in terms of reliability of constructs, composite reliability, and AVE (average variance extracted) (Fornell and Larcker, 1981). The results show, Cronbach's alpha values ranged from 0.812 to 0.895 and composite reliability scores all

exceeded 0.821. AVE scores of 0.5 or above met the requirement of convergent validity (Chin, 1998).

We assessed discriminant validity in two ways. All indicators loaded more highly on their own constructs than on other constructs. Second, for every construct, the square root of the AVE of each construct should exceed its correlation with any other construct (i.e., inter-construct correlations) (Fornell & Larcker, 1981). This study satisfied the condition for all the constructs.

We examined the correlation table (see Table 1) for evidence of multicollinearity among exogenous constructs. The correlation between the exogenous constructs was 0.469. To further test for multicollinearity, this study performed the variance inflation factors (VIFs) and they were less than 3.59. The condition index in all cases was within acceptable limits and less than 3.92. It suggested that multicollinearity was not a major concern in our study.

The results of the structural model testing are presented in Tables 2. Resource dependence and organizational learning influenced significantly on all the four performance indicators of balanced scorecards except that resource dependence has an insignificant effect on internal process and organizational learning has an insignificant effect on customer performance and learning and growth has an insignificant effect on customer performance.

Additionally, this study conducted a supplementary analysis by replacing four performance indicators

Table1: Descriptive statistics, reliabilities and the square root of AVEs

	CR	Cronbach's alpha	Mean	SD	RD	OL	L&G	IBP	CP	FPf	Age	Employee	Capital	Sales
RD	0.889	0.812	5.027	0.074	0.853									
OL	0.893	0.818	5.413	0.067	0.469	0.858								
L&G	0.935	0.895	5.390	0.053	0.544	0.590	0.909							
IBP	0.912	0.854	5.207	0.063	0.491	0.747	0.66	0.880						
CP	0.928	0.883	5.123	0.068	0.655	0.631	0.566	0.698	0.901					
FPf	0.821	0.871	4.897	0.069	0.674	0.577	0.728	0.741	0.749	0.892				
Age	NA	NA	5.45	0.107	0.066	0.157	0.024	-0.006	0.035	0.042	NA			
Employee	NA	NA	3.66	0.095	0.092	0.067	0.157	0.076	0.112	0.077	0.587	NA		
Capital	NA	NA	4.12	0.188	0.292	0.241	0.32	0.268	0.357	0.246	0.470	0.763	NA	
Sales	NA	NA	2.58	0.172	0.257	0.203	0.339	0.226	0.301	0.233	0.573	0.907	0.885	NA
<b>Variables</b>	<b>Definition</b>													
CR	Composite Reliability													
NA	NA: Not applicable													
Off-diagonal elements are correlations between constructs Diagonal elements are the square root of the AVE														

Table 2: the results of PLs

Research Hypotheses	Path Coeffi-	t value	R <sup>2</sup>
Resource Dependence → Learning & Growth	0.351***	3.276	0.447
Organizational Learning → Learning & Growth	0.426**	2.570	
Resource Dependence → Internal Business	0.073	0.797	0.634
Organizational Learning → Internal Business	0.226**	2.570	
Learning & Growth → Internal Business Proc-	0.305***	2.750	
Resource Dependence → Customer Performance	0.389***	3.638	0.631
Organizational Learning → Customer Perform-	0.162	1.591	
Learning & Growth → Customer Performance	0.002	0.028	
Internal Business Process → Customer Perform-	0.387***	3.854	
Resource Dependence → Financial Performance	0.226***	2.570	0.766
Organizational Learning → Financial Perform-	-0.152***	-2.093	
Learning & Growth → Financial Performance	0.331***	3.403	
Internal Business Process → Financial Perform-	0.330***	3.762	
Customer Performance → Financial Performance	0.328***	2.920	
Firm Age → Financial Performance	-0.053	-0.990	
Employees → Financial Performance	0.135	1.384	

Capital → Financial Performance	-0.097	-0.979	
Sales → Financial Performance	-0.084	-0.602	

P<0.01\*\*\* (two-tailed) , P<0.05\*\* (two-tailed) , P<0.1\* (two-tailed) ;

of balanced scorecards with a four-dimensional formative scale of balanced scorecard performance, measured by four indicators of balanced scorecard performance. The result also showed the fundamental model, which only included control variables, and then two independent variables were added to Model 4. Resource dependence and organizational learning had significant positive effects on formative construct of performance respectively.

#### Discussion

The goal of this study was to understand how resource dependence, organizational learning affect firm performance. We found support for our proposed theoretical model by using actual scores generated through balanced scorecard performance assessments of R&D alliance firms. This study makes two important contributions. First, we contribute to the business value of R&D alliance and show the causal paths from the measure indicators on the scorecard linked to financial objectives. We also complement this study by drawing attention to how influences alliance performance, in contrast to the focus in prior work on various measures of firm performance, such as productivity, profitability, risk, and shareholder value.

Due to the changes in industrial structural and globalization, economic policies and business strategies turn to promote industrial upgrade as well as

research and development innovation. It is an important issue for enterprises to accelerate R & D alliance for effective integration of resources and expand the synergy of research development. General alliance experience reflected the breadth of a firm's knowledge search when it attempted to improve alliance performance. The strategic alliance literature demonstrates that alliances create value for the partners, but also that many alliances fall short of expectations (Lunnan & Haugland, 2008). A firm's ability to leverage both internal and external R&D activities has important implications for generating economic value from innovation and sustaining the firm's competitive advantage (Soh & Subramanian, 2013). This study found that resource dependence and organizational learning influenced significantly on all the four performance indicators of balanced scorecards except that resource dependence has an insignificant effect on internal process and organizational learning has an insignificant effect on customer performance. It reflects that the technological variation in capabilities between partners, decides firm benefits from R&D alliances. "Technological change is understood as a continuous process to absorb or create technical knowledge, determined partly by external inputs and partly by past accumulation of skills and knowledge" (Lall, 1992, p. 166).

The implication of these findings is that resources and organization learning influences the



economic performance of R&D alliance. Value creation through alliances requires the simultaneous pursuit of partners with similar characteristics on certain dimensions and different characteristics on other dimensions. Partnering firms need to have different resource and capability profiles yet share similarities in their social institutions (Sarkar, et al., 2001). The resource-rich firms access external resources through alliances whereas resource-poor firms are less likely to do so. However, in relatively stable markets, this relationship reverses, and resource-poor firms become more active in alliance formation (Park, S. H., Chen, R. R., & Gallagher, S, 2002). Some guidelines for implementation identified in this study may be useful for managing a R&D alliance. Firms should evaluate whether they are providing sufficient resources and organizational support to R&D alliance and become adept at learning from alliance. Moreover, effective alliance management should be a distinctive

competence, and can reach the target contribution to a firm's competitive advantage.

#### Limitations and Future Research

This study is subject to a couple of limitations. First, not all companies have the same characteristics. Cultural and operational norms could have different effects on alliance performance. We didn't test hypotheses related to impact of partner characteristics on alliance performance. Second, we focused on one type of alliance in one industry. Further work is needed to establish the validity and generalizability of our results. Third, R&D project teams concerned with efficiency must cohesively coordinate cooperation, interactions, and the exchange of ideas to sustain innovation (Huang, 2017, p303), the effect of structural configuration on alliance performance need to be investigated in the future study.

#### References

- Albers, S., Wohlgezogen, F., & Zajac, E. J. (2016). Strategic alliance structures: An organization design perspective. *Journal of Management*, 42 (3), 582-614.
- Adobor, H. (2005). Trust as sense-making: the microdynamics of trust in interfirm alliances. *Journal of Business Research*, 58 (3), 330-337.
- Ahlstrom, D., Levitas, E., Hitt, M. A., Dacin, M. T., & Zhu, H. (2014). The three faces of China: Strategic alliance partner selection in three ethnic Chinese economies. *Journal of World Business*, 49 (4), 572-585.
- Argyris, C., & Schön, D. A. (1978). *Organizational Learning, Readings*. MA: Addison.
- Badaracco, J. (1991). *The knowledge link: How firms compete through strategic alliances*. Harvard Business Press.
- Barney, J., Wright, M., & Ketchen, D. J. (2001). The resource-based view of the firm: Ten years after



1991. *Journal of management*, 27 (6) ,625-641.
- Berson, Y., & Avolio, B. J. (2004). Transformational leadership and the dissemination of organizational goals: A case study of a telecommunication firm. *The Leadership Quarterly*, 15 (5) , 625-646.
- Bitran, J. Bitrana, S. Conn, A. Nagel, and H. Nichol, (2002). SMART: System for the development, Management and support of strategic alliances”, *International Journal of Production Economics*, 80 (1) ,3-10.
- Brockman, B. K., & Morgan, R. M. (2003). The role of existing knowledge in new product innovativeness and performance. *Decision Sciences*, 34 (2) , 385-419.
- Chin, W.W. (1998). The partial least squares approach for structural equation modeling. in: G.A. Marcoulides (ed.) , *Modern Methods for Business Research*, Lawrence Erlbaum Associates, Hillsdale, NJ. CSC, Available online on <http://www.csc.com.tw>, retrieved on the 15th of Dec. 2014
- Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative science quarterly*, 128-152.
- Cullen, J. B., Johnson, J. L., & Sakano, T. (2000). Success through commitment and trust: The soft side of strategic alliance management. *Journal of World Business*, 35 (3) , 223-240.
- Das, S., Sen, P. K., & Sengupta, S. (1998). Impact of strategic alliances on firm valuation. *Academy of Management Journal*, 41 (1) , 27-41.
- Day, G. S. (1994). The capabilities of market-driven organizations. *the Journal of Marketing*, 37-52.
- Delaney, J. T., & Huselid, M. A. (1996). The impact of human resource management practices on perceptions of organizational performance. *Academy of Management journal*, 39 (4) , 949-969.
- Dunning, J. H. (1995). Reappraising the eclectic paradigm in an age of alliance capitalism. *Journal of international business studies*, 461-491.
- Eilat, H., Golany, B., & Shtub, A. (2008). R&D project evaluation: An integrated DEA and balanced scorecard approach. *Omega*, 36 (5) , 895-912.
- Fiol, C. M., & Lyles, M. A. (1985). Organizational learning. *Academy of management review*, 10 (4) , 803-813.
- ornell, C. & Larcker, D.F. (1981). Evaluating structural equation models with unobservable variables and measurement error, *Journal of Marketing Research*, 18 (1) , pp. 39-50.
- Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and

- measurement error: Algebra and statistics. *Journal of marketing research*, 382-388.
- Gaffney, N., Kedia, B., & Clampit, J. (2013). A resource dependence perspective of EMNE FDI strategy. *International Business Review*, 22 (6) , 1092-1100.
- Gauthier, C. (2014) "Creating value while avoiding its destruction through R&D management and innovation." *R&D Management* 44.2 171-172.
- Greenwood , D.J & Levin, M., (1998) , *Introduction to Action Research - Social Research for Social Change*, Sage Publications, USA
- Grant, R. M. (1991). The resource-based theory of competitive advantage: implications for strategy formulation. *California management review*, 33 (3) , 114-135.
- Gulati, R. (1995). Social structure and alliance formation patterns: A longitudinal analysis. *Administrative science quarterly*, 619-652.
- Hartmann, T., Fischer, M., & Haymaker, J., (2009) , *Implementing information systems with project teams using ethnographic–action research*, *Advanced Engineering Informatics*, 23 (1) , 57-67.
- Heavey, C., & Fox, B. C. (2016, January). Alliance Capabilities and Corporate Entrepreneurship: The Pivotal Influence of Top Managers. In *Academy of Management Proceedings* (Vol. 2016, No. 1, p. 11349). Academy of Management.
- Hirst, G., Mann, L., & Triangle. A., (2004) , *A Model of R&D Leadership and Team Communication: The Relationship with Project Performance*, *R&D Management*, 34 (2) , 147-160.
- Holt, G. D., Love, P. E., & Li, H. (2000). The learning organisation: toward a paradigm for mutually beneficial strategic construction alliances. *International Journal of Project Management*, 18 (6) , 415-421.
- Hung, C. L. (2017). Social networks, technology ties, and gatekeeper functionality: Implications for the performance management of R&D projects. *Research Policy*, 46 (1) , 305-315.
- Hultink, E. J., & Robben, H. S. (1995). Measuring new product success: The difference that time perspective makes. *Journal of Product Innovation Management*, 12 (5) , 392-405.
- Inkpen, A. (1998). Learning, knowledge acquisition, and strategic alliances. *European Management Journal*, 16 (2) , 223-229.
- Ireland, I.R., Hitt, M.A., & Vaidyanath, D., (2002) , *Alliance Management as a Source of Competitive Advantage*, *Journal of Management*, 28 (3) , 413-446.

- Kaplan, R. S., & Norton, D. P. (1996). *The balanced scorecard: translating strategy into action*. Harvard Business Press.
- Kaplan, R. S., & Norton, D. P. (1996). Using the balanced scorecard as a strategic management system.
- Khanna, T., Gulati, R., & Nohria, N., (1998) , The dynamics of learning alliances: Competition, cooperation, and relative scope, *Strategic Management Journal*, 19 (3) , 193–210.
- Kim, K. K., & Lim, M. K. (2015). R&D outsourcing in an innovation-driven supply chain. *Operations Research Letters*, 43 (1) , 20-25.
- Kim, SW., (2009) , An investigation on the direct and indirect effect of supply chain integration on firm performance, *International Journal of Production Economics*, 119 (2) , 328-346.
- Kalkan, V.D (2006). Örgütsel Öğrenme ve Bilgi Yönetimi: Kesisim ve Ayrısma Noktaları. *Elektronik Sosyal Bilimler Dergisi*, pp. 22-36.
- Lall, S. (1992). Technological capabilities and industrialization. *World development*, 20 (2) , 165-186.
- Lambe, C.J., Spekman, R.E., & Hunt, S.D., (2002) , Alliance competence, resources, and alliance success: Conceptualization, measurement, and initial test, *Journal of the Academy of Marketing Science*, 30 (2) , 141–158.
- Lewicki, R.J. and Bunker, B.B., (1996) , Developing and maintaining trust in working relationships. In: R.M. Kramer and T.R. Tyler, Editors, *Trust in Organizations: Frontiers of Theory and Research*, Sage Publications, Thousand Oaks, CA, 114–139.
- Lunnan, R., & Haugland, S. A. (2008). Predicting and measuring alliance performance: A multidimensional analysis. *Strategic Management Journal*, 29 (5) , 545-556.
- Marciukaityte, D., Roskelley, K., & Wang, H., (2009) , Strategic alliances by financial services firms, *Journal of Business Research*, 62 ( 11) , 1193-1199.
- Narula, R., and Dunning, J. H., (1998) Explaining international R&D alliances and the role of governments, *International Business Review*, 7 (4) , 377-397.
- Neill, J. D., Pfeiffer, G. M., & Young-Ybarra, C. E. (2001). Technology R&D alliances and firm value. *The Journal of High Technology Management Research*, 12 (2) , 227-237.
- Panteli, N., & Phang, C. Nunnally, J.C. (1978). *Psychometric theory*. McGraw-Hill, New York.
- Olson, E. M., Walker Jr., O. C., & Ruekert, R. W. (1995). Organizing for effective new product development: The moderating role of product

- innovativeness. *The Journal of Marketing*, 48-62.
- Park, S. H., Chen, R. R., & Gallagher, S. (2002). Firm resources as moderators of the relationship between market growth and strategic alliances in semiconductor start-ups. *Academy of management Journal*, 45 (3) , 527-545.
- Parmigiani, A., & Mitchell, W. (2009). Complementarity, capabilities, and the boundaries of the firm: the impact of within-firm and interfirm expertise on concurrent sourcing of complementary components. *Strategic Management Journal*, 30 (10) , 1065-1091.
- Pfeffer, J., & Salancik, G. R. (2003). *The external control of organizations: A resource dependence perspective*. Stanford University Press.
- Phang, C. W., Kankanhalli, A., & Ang, C. (2008). Investigating organizational learning in eGovernment projects: A multi-theoretic approach. *The Journal of Strategic Information Systems*, 17 (2) , 99-123.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J., & Podsakoff, N. P. 2003. Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88 (5) , 879-903
- Porter, M. E. (Ed.). (1986). *Competition in global industries*. Harvard Business Press.
- Reason, P., & Bradbury, H. (Eds.). (2001). *Handbook of action research: Participative inquiry and practice*. Sage.
- Robson, M. J., Katsikeas, C. S., & Bello, D. C. (2008). Drivers and performance outcomes of trust in international strategic alliances: The role of organizational complexity. *Organization Science*, 19 (4) , 647-665.
- Sarin, S., & Mahajan, V. (2001). The effect of reward structures on the performance of cross-functional product development teams. *Journal of marketing*, 65 (2) , 35-53.
- Schulz, M. (2002). *Organizational learning. The Blackwell companion to organizations*, 415-441.
- Sharma, A. (2009). Implementing balance scorecard for performance measurement. *IUP Journal of Business Strategy*, 6 (1) , 7.
- Spence, A. M. (1974). *Market signaling: Informational transfer in hiring and related screening processes* (pp.1-221). Cambridge, MA: Harvard University Press.
- Strang, K. D. (2005). Examining effective and ineffective transformational project leadership. *Team Performance Management*, 11 (3/4) , 68-103.
- Shamir, B., House, R. J., & Arthur, M. B. (1993). The motivational effects of charismatic leadership: A self-concept based theory. *Organization science*, 4 (4) , 577-594.

- Slater, S. F., & Narver, J. C. (1995). Market orientation and the learning organization. *The Journal of marketing*, 63-74.
- Soh, P. H., & Subramanian, A. M. (2013). When do firms benefit from university–industry R&D collaborations? The implications of firm R&D focus on scientific research and technological recombination. *Journal of Business Venturing*.
- Spence, A. M. (1974). Market signaling: Informational transfer in hiring and related screening processes (pp.1-221). Cambridge, MA: Harvard University Press.
- Strang, K. D. (2005). Examining effective and ineffective transformational project leadership. *Team Performance Management*, 11 (3/4) , 68-103.
- Tatikonda, M. V., & Rosenthal, S. R. (2000). Technology novelty, project complexity, and product development project execution success: a deeper look at task uncertainty in product innovation. *Engineering Management, IEEE Transactions on*, 47 (1) , 74-87.
- Wang, J., and Brian H. K. (2005) "The evolution of R&D management. "Management Research News 28.11/12: 88-95.
- West, J., & Gallagher, S. (2006). Challenges of open innovation: the paradox of firm investment in open-source software. *R&D Management*, 36 (3) , 319-331.
- Volberda, B. (1996). The importance of developing collaborative know-how: an empirical test of the learning organization, *Academy of Management Journal*, 40 (5) , 1150–1174.
- Schulz, M. (2002). Organizational learning. *The Blackwell companion to organizations*, 415-441.
- Sharma, A. (2009). Implementing balance scorecard for performance measurement. *ICFAI Journal of Business Strategy*, 6 (1) , 7-16.
- Seth, A., & Chi, T. (2005). What does a real options perspective add to the understanding of strategic alliances. *Handbook for strategic* Wang, J., and Brian H. K. (2005) "The evolution of R&D management. "Management Research News 28.11/12: 88-95.
- Wold, H. (1985). Systems analysis by partial least squares. *Measuring the unmeasurable*, 221-251.
- Volberda, B. (1996). The importance of developing collaborative know-how. Yang, J., Wang, J., Wong, C. W., & Lai, K. H. (2008). Relational stability and alliance performance in supply chain. *Omega*, 36 (4) , 600-608.
- Yoshino, M. Y., & Rangan, U. S. (1995). Strategic alliances: an entrepreneurial approach to globalization. Harvard Business Press.

EXPLORING THE RELATIONSHIPS AMONG CAMPERS'  
LEISURE MOTIVE, SATISFACTION AND CAMPSITE  
SERVICE INNOVATION

Yong Zhong

Associate Professor, School of Sports Leisure  
Beijing Normal University, Zhuhai China

Shih-Yen Lin

Professor, Department of Tourism Leisure and Hospitality Management  
National Chi Nan University, Taiwan

Mei-Hua Huang

Assistant Professor, Department of Accounting and Information Systems  
Asia University, Taiwan  
meihuang@asia.edu.tw (Corresponding Author)

Chao-Chien Chen

Professor, Department of Leisure and Recreation Management  
Asia University, Taiwan

Ching-Hua Chien

Master Student, Department of Leisure and Recreation Management  
Asia University, Taiwan

Abstract

Camping is one popular outdoor activity over the recent years in Taiwan. Travelers hold satisfaction of recreation activities in high regard. Service practitioners look into how to incorporate services to satisfy the needs of travelers for sustainability. Therefore, this study investigates Taiwanese campers for an understanding of the relationships among campsite service innovation, travelers' leisure motive, and satisfaction. Campers' demographic characteristics are also considered to examine the differences in leisure motive and satisfaction. Questionnaire survey was conducted to collect data from the Saijia Campsite in Pingtung and the Liyu Lake Campsite in Puli, Taiwan. Based on 560 sample data, the results show that campers' leisure mo-



tive and service innovation are directly linked to satisfaction. Motives of health improvement and novelty of services have greater impacts on satisfaction. Campers' leisure motive and satisfaction level are different in respect to marital status and education levels. Finally, service innovation is a partial mediator between leisure motive and satisfaction. The findings suggest that campsite managers can promote camping by evoking people's leisure motive and encourage people to take advantages of camping to accomplish their inner motives, as well as implementing effective service innovation, which will raise a greater satisfaction.

Keywords: Campsites, Leisure motive, Service innovation, Satisfaction, Tourism

### Introduction

In company with the economic growth of Taiwan, people's life quality is improving. The assimilation of international tourism knowledge further advances Taiwanese to pursue high leisure quality. Moreover, Taiwan has implemented two-day off in a week since year 2001, so people have more time for personal activities and therefore the demand for outdoor recreation increases significantly. Meanwhile leisure recreations are gradually transforming from static to active and from indoor to outdoor activities. And people place highly on the fulfillment of innate self-motive, since motive is a strong and powerful driver urging an individual to satisfy his or her need (Kotler & Armstrong, 2010). Thus, people often take advantages of leisure activities to accomplish their inner motives and at the same time realize the feeling of content and happiness (Bread & Ragheb, 1980).

Camping is one popular outdoor activity over the recent years in Taiwan. Camping is regarded as good for health in that it allows people to

approach to the nature. It also serves as the function of enhancing interpersonal relationships among friends or family members because it gives people the opportunity to create shared experiences and feelings among them. Therefore, camping can fulfill certain individual needs. Since the population participating in camping activities is increasing over years, it is imperative to understand the leisure motives of campers. This knowledge can provide insights for service practitioners into how to incorporate service design and service innovations to satisfy the needs of travelers and should be a key to business sustainability. In sum, the aim of this study is to investigate Taiwanese campers for an understanding of the relationships among campsite service innovation, travelers' innate motive, and satisfaction. Campers' demographic characteristics are also considered to examine the differences in leisure motive and satisfaction. The results of the study can help campsite practitioners develop effective strategies for service innovations and raise travelers' satisfaction, and ultimately achieve business sustainability.



## Literature Background

### *Leisure Motive and Satisfaction*

Inspired by western ideology, Taiwanese progressively see leisure recreation as an education linking to life experiences. Outdoor leisure and recreation management has been introduced to Taiwan university courses these years. A variety of activity professionals have been trained in such areas as outdoor adventure, diving, tree climbing, and yachting. As a result, the quality of planning and managing leisure recreation has been enhanced tremendously. People hold the satisfaction level of facilities and activity content in high regard while enjoying leisure recreations.

Bread & Ragheb (1980) define travel satisfaction as the positive perception or feeling formed, induced, and/or obtained by an individual from undergoing leisure activities. Accordingly, if the traveler's experiences exceed the expectation, he or she will have a positive feeling or so called satisfaction about the experience, which in turn will influence the traveler's future behavior (Parasuraman et al., 1985). The motive of leisure recreation is an inner desire driving a traveler to fulfill the psychological and social needs, and is one of the main reasons a person carries out leisure activities. Thus, a traveler with a higher leisure motive is more likely to have a greater level of satisfaction with the leisure activity (Fielding et al., 1992).

Driver & Brown's (1975) leisure recreation experience theory indicates that a traveler first comes up with a lei-

sure motive, and then is urged to go to a recreation place to participate in leisure activities, from which the experience of the recreation is obtained. And the satisfaction level of the tourist is contingent on the extent to which the leisure motive is accomplished.

Weissinger (1985) also supports that the leisure motive has an impact on leisure satisfaction. Specifically, an individual's motive for a certain need is unique and will influence the person's satisfaction level through the entire leisure process. Furthermore, the feedback model of leisure satisfaction by Mannell & Kleiber (1997) suggests that an individual's motive will influence the person's behavior, which in turn impact his or her satisfaction. When that behavior is satisfied, it will go back to affect motive, constituting a feedback circle.

Previous studies on leisure and recreation reveal that different demographic characteristics are associated with different motives (e.g., Lu et al., 2015; Huang, 2008). Lu et al. (2015) found that education level had an impact on travel motive, and travelers' age and income had differential impacts on tourist's satisfaction. Based on the above discussion, two hypotheses are as the following.

H1: Campers' leisure motive (1a) and satisfaction level (1b) are significantly different in respect to demographic characteristics.

H2: Campers' leisure motive is significantly and positively related to satisfaction.

Service innovation is a conceptual and procedural innovation activity. It is intangible in nature and highly customized in relation to diversifying needs of customers. That is, service innovation delivers added value to customers through providing new concepts and improving service quality or resolving problems, which will give customers totally different experiences from the past ones (Jan & Christian, 2005). Halliday & Trott, (2010) further suggest that service innovation can augment differentiation and maintain competing advantage for a service firm, because the innovation process integrates customers, employees, suppliers, and collaboration partners to advance existing services or to develop new services.

Service innovation nowadays has become an experiential value to customers. It meets the core of customer needs and can further reinforce the perceived service value of target customers and potential customers. Studies found there was a direct relationship between service innovation and customer satisfaction (Krom, 2015; Hsiao, 2010). A recent study by Wang & Juan (2016) also supports that proactive service innovation can increase customer perceived service value and further affect customer satisfaction. As such, the following hypotheses are provided.

H3: campers' perceived service innovation is significantly and positively related to satisfaction.

H4: Campers' leisure motive affects satisfaction through service innovation.

### *The Research Model*

The conceptual framework of this study proposes campers' leisure motive and campsite service innovation have direct impacts on satisfaction respectively. Service innovation serves as a mediator between leisure motive and satisfaction. Campers' demographic characteristics are also considered to have differential impacts on leisure motive and satisfaction. The research model is presented in Figure 1.

### *Data Collection*

Data were collected through questionnaire survey. There were four sections on the questionnaire. The first section consisted of information about personal profile and camping participation. The other sections were measuring items for leisure motive, service innovation, and satisfaction. All the three variables' measuring items were gauged with a 5-point Likert-type scale where 1 = strongly disagree and 5 = strongly agree.

The participants were recruited from the Saijia Campsite in Pingtung and the Liyu Lake Campsite in Puli, Taiwan. We employed the convenience sampling by intercepting and inviting campers to fill the questionnaire during several weekends.

In total 700 questionnaires were distributed and 560 valid ones were collected. The response rate therefore was 80 percent.

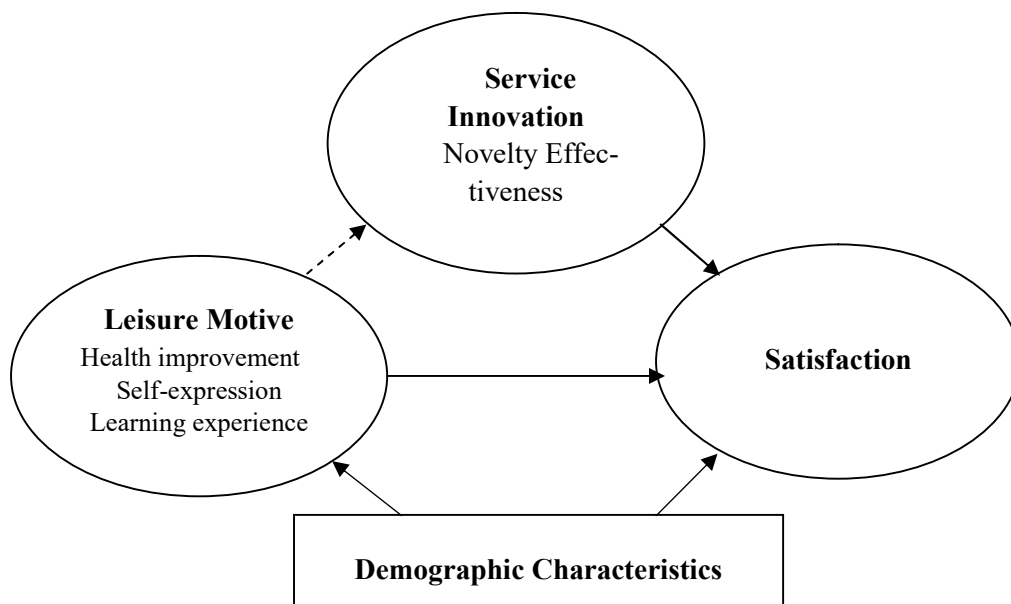


Figure 1.

### *Measurement*

All the structured scale items pertaining to this research were adapted from existing empirical studies. We operationalized the three-dimensional leisure motive to include health improvement, self-expression, and learning experience. They were measured with 15 items adapted from Chen (2013). The measuring question asked the camper “what makes you come to this camping activity?” Items for different motives were listed for choosing. Example items are: “get fresh air and enjoy outdoor life,” “take it as self-challenges,” “extend knowledge domain.” Service innovation was measured with 10 items adapted from Chao (2007). Service novelty and creativity were included in the question items.

For examples, “The campsite makes changes in ways of providing services or resolving problems to meet customers’ needs” and “It’s important to me that this campsite often promote different activities to inspire customers.” Finally, overall satisfaction were adapted from Hsiao (2010) and measured with 8 items. One example item is “The overall performance of this campsite is very much as I expected”.

### *Respondent Profiles*

Analyses were performance based on the 560 usable surveys. Of the 560 respondents, 270 were from the Saijia Campsite and 290 from Liyu Lake Campsite; female was the major part (52.6%); married people were the most common (54.3%); age of 41-50 was the

majority (30.7%); monthly income under NT\$20,000 was the greatest part (32.5%); students were the most common (26.2%); college graduates were the majority (49.0%); people living in southern Taiwan were the major part (42.9%).

#### *Reliability and Validity*

The study assessed internal consistency reliability and convergent validity of the constructs. As indicated in Table 1, all constructs show a satisfactory level of construct reliability, with internal consistency (Cronbach's  $\alpha$ ) ranging from 0.69 to 0.84. Additionally, the results of the factor analysis reveal that all measuring items converge to their original constructs respectively, and

that all item loadings range from 0.57 to 0.89 and are greater than the desired level of .5. These results represent a satisfactory level of convergent validity of the study.

### Results

#### *Test for the Hypotheses*

This study first used descriptive analyses to understand the leisure motives of the campers and their satisfaction level. The results, as provided in Table 1, show that the campers generally have high leisure motives with the average score 4.18, in which the motive for health improvement has the highest score (4.35); the average score for satisfaction is 3.89.

Table 1. Results of Descriptive Analysis for Leisure Motives and Satisfaction

Motives	M	SD	order
Health improvement	4.35	0.51	1
Self-expression	4.07	0.55	3
Learning experience	4.14	0.54	2
Average score	4.18	0.47	
Satisfaction	3.89	0.65	

Independent-t test was conducted to examine whether campers' gender and marital status were different in leisure motives. The results indicate no substantial difference for gender, but a significant difference between married and unmarried people in the health improvement motive. As shown in Table 2, married people are obviously with a higher intention to take camping activities as a means to improve health. However, the other two motives show

no significant differences for different marital status.

ANOVA was performed to see whether campers in different age groups, education levels, income levels, residence areas, and professions show different levels of leisure motives, respectively. When the result of ANOVA indicate a significant

Table 2. T-Test Results for Marital Status and Leisure Motives

Marital status	Leisure motives	M	SD	t-value	p-value
married unmarried	Health improvement	4.43 4.23	0.44 0.58	4.33*	0.000
married unmarried	Self-expression	4.10 4.01	0.52 0.59	1.88	0.119
married unmarried	Learning experience	4.20 4.06	0.51 0.55	3.09	0.325

\* $p < .05$

Table 3. ANOVA Results for Education Levels and Leisure Motives

Education level	Motives	M	SD	F	Scheffe's post hoc
A. Elementary	Health improvement	4.58	0.49	3.41*	A>B
B. Junior high		4.16	0.57		
C. Senior high		4.37	0.52		
D. College		4.32	0.47		
E. Masters		4.35	0.51		
F. Elementary	Self-expression	4.56	0.47	6.19*	A> B,C,D,E
G. Junior high		3.98	0.59		
H. Senior high		4.11	0.57		
I. College		4.01	0.52		
J. Masters		4.03	0.54		
K. Elementary	Learning experience	4.63	0.43	6.71*	A> B,C,D,E
L. Junior high		4.11	0.52		
M. Senior high		4.17	0.53		
N. College		4.08	0.50		
O. Masters		4.14	0.60		

\* $p < .05$

difference, the Scheffe's post hoc test was performed to further examine the differences among groups.

The results in Table 3 show that campers' leisure motives for health improvement ( $F = 3.41, p=0.009 < .05$ ), self-expression ( $F = 6.19, p=0.000 < .05$ ), and learning experience ( $F = 6.71, p=0.000 < .05$ ) are all significantly different with respect to education levels.

Scheffe's test was then performed to further examine these differences. The results in Table 3 indicate that elementary graduate campers' leisure motives in the three dimensions are all greater than those of the other education groups.

Moreover, analysis results indicate that whereas campers' motive for health improvement is significantly different among different age groups

Table 4. ANOVA Results for Education Levels and Satisfaction

Education level	Variable	M	SD	F	Scheffe's post hoc
A. Elementary	Satisfaction	4.30	0.87	4.66*	A>D,E
B. Junior high		3.83	0.67		
C. Senior high		3.99	0.63		
D. College		3.82	0.61		
E. Masters		3.78	0.62		

\* $p < .05$

Table 5. Regression Results for Leisure Motives and Satisfaction

Independent variables	b	Standard error	$\beta$	t	p	Adjusted R <sup>2</sup>
Health improvement	0.297	0.063	0.234	4.745*	0.000	0.291
Self-expression	0.222	0.071	0.191	3.110*	0.000	
Learning experience	0.228	0.067	0.189	3.389*	0.001	

\*  $p < .05$

( $F = 3.79, p = 0.007 < .05$ ) and income levels ( $F = 2.83, p = 0.016 < .05$ ), no much difference is found for motives of self-expression and learning experience. The results also indicate that campers motive for learning experience is significantly different on living areas ( $F = 3.51, p = 0.008 < .05$ ). However, the results of the Scheffe's post hoc analysis cannot identify differences among different age groups, income levels, and living areas, respectively. Therefore, hypothesis 1a is only partially supported.

Variance analyses were conducted for demographic characteristics on satisfaction. The results in Table 4 show that different education groups exist substantial difference on their perceived campsite satisfaction ( $F = 4.66,$

$p = 0.001 < .05$ ), in which campers with the elementary degree tend to have a greater satisfaction level than college and master degree campers. Campers living in different areas perceive campsite satisfaction differently ( $F = 2.95, p = 0.020 < .05$ ); however, the results of the Scheffe's analysis cannot identify differences among varying living areas. Therefore, hypothesis 1b is also partially supported.

Pearson's correlation analysis was performed to understand the relationships between campers' leisure motive and their satisfaction. The results show that the three dimensions of leisure motive are all correlated to satisfaction at a medium level with correlation coefficients ranging from 0.474-0.492.

Table 6. Regression Results for Service Innovation and Satisfaction

Independent variables	b	Standard error	$\beta$	t	p	Adjusted R <sup>2</sup>
Novelty of service innovation	0.297	0.063	0.234	12.702*	0.000	0.468
Effectiveness of service innovation	0.228	0.067	0.189	5.936*	0.001	

\*  $p < .05$

Table 7. Regression Results of Mediating Effects of Service Innovation

Dependent var.	Service Innovation		Satisfaction		Satisfaction	
	Model 1		Model 2		Model 3	
Independent var.	$\beta$	t	$\beta$	t	$\beta$	t
Leisure motive	0.562	15.871*	0.542	15.078*	0.254	6.759*
Service innovation					0.514	13.678*
F	251.886		227.357		244.341	
R <sup>2</sup>	0.316		0.294		0.475	
$\Delta R^2$					0.181	

The aggregate correlation between leisure motive and satisfaction indicates a medium level of relationship ( $r = .0.542, p < .05$ ). Regression analysis was conducted to further investigate the explanation power of leisure motive and the relative importance of the three dimensions of motives for their influence on satisfaction. The results in Table 5 show that leisure motive has 29.1 % explained variance in satisfaction, and that among the three leisure motives, health improvement ( $\beta=0.234$ ) has a greater impact than both self-

expression ( $\beta=0.191$ ) and learning experience ( $\beta=0.189, p < 0.05$ ) on satisfaction. Therefore, hypothesis 2 is supported.

Regression analysis was again performed to understand the relationship between service innovation and campers' satisfaction. The results show that both the novelty and effectiveness dimensions of service innovation are correlated to satisfaction at a medium level with correlation coefficients being 0.661 and 0.552, respectively. The ag-



gregate correlation between service innovation and satisfaction indicates a near strong level of relationship ( $r = 0.671, p < .05$ ). Regression analysis was employed to further investigate the explanation power of service innovation on campers' satisfaction. The results, as provided in Table 6, show that service innovation explains 46.8% of satisfaction; however, novelty of services ( $\beta=0.234, p < 0.05$ ) has a greater impact than effectiveness of services ( $\beta=0.189, p < 0.05$ ) on camper's satisfaction. Therefore, hypothesis 3 is supported.

#### *Test for the Mediating Effect of Service Innovation*

This study followed Baron & Kenny's (1986) procedure to examine the mediating effects of service innovation. The procedure first regresses the independent variable and the mediator on the dependent variable, respectively. Then the independent variable together with the mediator simultaneously regress on the dependent variable. If the results of the multiple regression show no significance between the independent variable and dependent variable, a full mediation effect is found and otherwise a partial mediating effect is specified.

Table 7 provided the results for the three regression models according

to the steps. As shown in Table 7, the first regression model indicates that leisure motive positively impacts service innovation ( $\beta= 0.562, t=15.871, p < .05$ ) and explains it by 31.6% ( $F=251.886, p < .05$ ); the second regression model shows leisure motive also positively impacts satisfaction ( $\beta= 0.542, t=15.078, p < .05$ ) and explains it by 29.4% ( $F=227.357, p < .05$ ). These results fulfill the prerequisites.

Finally, the results of the third regression model in Table 7 show leisure motive and service innovation all significantly impact on satisfaction. The coefficients of leisure motive and satisfaction in model 3 ( $\beta= 0.254$ ) is smaller than that in the model 1 ( $\beta= 0.562$ ). Moreover, the model 3 explains satisfaction by 47.5%, which is increased by 18.1% in comparison with the model 2. All these results indicate a partial mediating effect of service innovation. Therefore, the hypothesis 4 is supported

#### Conclusion

This empirical study has some encouraging findings. First, campers' leisure motives in health improvement, self-expression, and learning experience are general high. Married people tend to have a stronger health improvement motive for camping. Leisure motives of elementary graduates in the

three dimensions are all greater than those of the other education groups. Campers with different education levels perceive campsite satisfaction differently, in which elementary degree campers tend to have a greater satisfaction level than other degree holders.

Moreover, leisure motive is found to have direct connects to satisfaction, in which health improvement has a greater impact on satisfaction. These findings are consistent with prior studies in that travelers with higher leisure motive are more likely to perceive a higher level of satisfaction (Fielding et al., 1992). Nevertheless, this study further detected health improvement having a greater impact on satisfaction. Second, service innovation influences campers' satisfaction, which again agrees with previous study (Krom, 2015). However, this study further observed novelty of services having a greater impact than effectiveness of services on camper's satisfaction. Finally, service innovation plays as a partial mediating role bridging campers' leisure motive to a higher level of satisfaction.

The findings of this study provide several managerial insights into management of campsites. Campsite managers can promote camping by evoking people's inner motives for health im-

provement, self-expression, and learning experience, such as launching marketing campaign or spreading words in the online social network for the benefits of camping or services offered on the campsite. Specially, they can emphasize the benefit of health improvement to appeal to elementary graduates and married people. These efforts should be able to encourage people to take advantages of camping to accomplish their inner motives and at the same time realize the feeling of content and happiness, which in turn will lead to a greater satisfaction.

Campsite managers should design and customize diversified experiential activities that give customers totally different experiences from others. Therefore generating creative ideas to tailor customer expectations is crucial. By coproduction with employees, customers and collaboration partners could be resourceful. Finally, regularly implement novel and creative services effectively to attract people attention and to meet their desires such as for self-challenge, better health, interpersonal relationships, skills and knowledge, should enhance customer perceived satisfaction.

This study purposed a parsimonious model, not examining other variables may important to campers'

satisfaction. Moreover, the sample came from only two campsites. Therefore, incorporating other antecedents and mediators such as customer value in future studies can get a thorough understanding in the issue. Augmenting the sample by including all campsites can increase external validity.

#### References

- Baron, R. M., & Kenny, D. A. (1986). The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations. *Journal of Personality and Social Psychology*, 51, 1173-1182.
- Bread, J. G. & Ragheb, M. G. (1980). Measuring Leisure Satisfaction. *Journal of Leisure Research*, 12(1), 20-33.
- Chao, H. (2007). *A Study of Relationships among Service Innovation, Normative Evaluation, Service Quality and Customer Satisfaction in Auto Lease Industry*. Master Thesis, National Chung Kung University, Tainan, Taiwan.
- Chen W. (2013). *Relationships among Family Campers' Motivation of Leisure Participation, Leisure Benefits and Life Satisfaction*, Master Thesis, Asian University, Taichung, Taiwan.
- Driver, B., & Brown, P. (1975). A Socio-Psychological definition of Recreation Demand, with Implications for Recreation Resource Planning. *Assessing Demand for Outdoor Recreation*, 12(8), 62-88.
- Fielding, K., Pearce, P. L. & Hughes, K. (1992). Climbing Ayers Rock: Relating Visitor Motivation Hous-ton perception and enjoyment. *Journal of Tourism Studies*, 3(2), 49-57.
- Halliday, S. & Trott, P. (2010). Relational, Interactive Service Innovation: Building Branding Competence. *Marketing Theory*, 10(2), 144-160.
- Hsiao, T. (2010). *A Research on the Travel Motivation, Satisfaction and Service Quality- The Case of Tsou-Ma-Lai Farm*. Master Thesis, Asian University, Taichung, Taiwan.
- Huang, L. (2008). Bed and Breakfast Industry Adopting E-Commerce Strategies in E-Service. *The Service Industries Journal*, 28(5), 633-648.
- Jan, V. & Christian, Z. (2005). Introduction: Innovation in Services. *Industry and Innovation*, 12(2), 147-152.
- Kotler, P. J. & Armstrong, G. M. (2010). *Principles of Marketing*. Pearson Education.
- Krom, I. (2015). Global Online Entrepreneurship and Impact of Innovation on Brands. *Emerging Markets Journal*, 5(2), 89-101.
- Lu, C., Hsu, Y., Lu, Y. & Lin, W. (2015). Measuring Tourist Satisfaction by Motivation, Travel

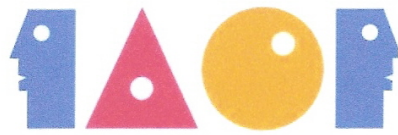
Behavior and Shopping Behavior: the Case in Lake Scenic Area in Taiwan. *International Journal of Organizational Innovation*, 8(1), 117-132.

Mannell, R. C. & Kleiber, D. A. (1997). *A Social Psychology of Leisure*. Venture Publishing Inc.

Parasuraman, A., Zeithaml, V. A. & Berry, L. L. (1985). A conceptual Model of Service Quality and Its Implication for Future Research. *Journal of Marketing*, 49(6), 41-50.

Wang, E.S. & Juan, P. (2016). Entrepreneurial Orientation and Service Innovation on Consumer Response: A B&B Case. *Journal of Small Business Management*, 54(2), 532-545.

Weissinger, E. (1985). Development and Validation of an Intrinsic Leisure Motivation Scale. Unpublished Doctoral Dissertation, University of Maryland, College Park.



IDENTIFYING THE TECHNOLOGY POSITION ON PATENT  
ACQUISITION OF CARDIOVASCULAR STENT BY COMPLEMEN-  
TARITY AND SUPPLEMENTARY KNOWLEDGE

Hornng-Jinh Chang

Department of Management Sciences, Tamkang University, Taiwan, R.O.C.

Hsueh-Chen Chen

Department of Management Sciences, Tamkang University, Taiwan, R.O.C.

\*Chun-Ming Chang

Chaoyang University of Technology, Dept. of Business Administration,  
Taiwan, R.O.C.

\*corresponding author: [happy.ccm82@gmail.com](mailto:happy.ccm82@gmail.com)

Kuei-Kuei Lai

Chaoyang University of Technology, Dept. of Business Administration,  
Taiwan, R.O.C.

Chien-Yu Lin

Department of Business Administration, National Yunlin University of Science &  
Technology, Yunlin, Taiwan, R.O.C.

Kung-Ling Ho

Department of Business Administration, National Yunlin University of Science &  
Technology, Taiwan, R.O.C.

## Abstract

The most common way for an organization to expand its innovation capability is to acquire technological patent. Consequently, it is an important issue for firms to identify and estimate the target patent. Before acquiring, firms also have to make sure whether the target patents is matching the strategic purpose, and whether the target patent is suitable for the adopting after acquiring. And the result of patent citation analysis can be referred for estimating target patent as the result reveals the technology relationship between firms, the market value of technologies and the technology development strategy. Moreover, technology network analysis can visualize the overall social structure of actors in the technology network and illuminate their relationships and roles. However, few scholars have examined the relative positions of firms in technology networks from the viewpoint of individual social networks. This research uses the idea of the “ego-network”, defining the firm’s core technology patent portfolio as “ego” while patents which directly cite core patents are defined as the “neighborhood. The purpose of this research is to understand how the firm, through patent transfers, alters its technology position and performs inductive analysis as a reference for future changes in its patent portfolio strategies. The results of this research demonstrate that irrespective of patent transfer strategy, the relative position of firms in the technology network is displaced by patent transfers. By dividing the trajectory of displacement into quadrants the data set may be named as pioneers, leaders, followers, and laggards. And the result shows firms may exit markets, reduce internal subdivisions, carry out cost control, or sell off patents, moving their position to the left or downward and making them followers or laggards. By the same token, when firms enter a new technology area or market, increase their technological capabilities, or acquire technology patents, their position shifts to the right or downward, and they become leaders or pioneers.

Keywords: patent acquisitions, supplementary, complementary, social network, patent citation

### Introduction

For technology-intensive industries, the rapid expansion of the ability to innovate is a key element in maintaining

long-term competitiveness. Corporate mergers and acquisitions of other patented technologies are the most common methods for expanding innovative abili-

ties (Hagedoorn, 2002 ; King et al., 2008; Gantumur & Stephan, 2010).

When the technological resources of potential partners or acquisition targets are rich or diverse, companies are more likely to choose mergers and acquisitions than other methods to obtain the desired knowledge or technology (Phene, Tallman, & Almeida, 2012). However, such an acquisition is not a panacea for rapid access to the new technology.

When the technology gap between the new technology obtained by the firm and its original technology is too great, the firm's ability to absorb new knowledge may be affected. By the same token, when the similarity between the new technology and the firm's original technology is too high, innovation performance may also be greatly reduced (Hagedoorn & Wang, 2012).

Consequently, companies must clearly understand and evaluate the desired technology resources and select cooperation or merger partners to effectively achieve their strategic purposes, in order to enhance innovation performance after the acquisition of the new technology. Further, how firms analyze their own and competitor technologies and position in technology networks, as a basis for assessing future patent acquisition,

transfer, and targets for cooperation, in order to successfully obtain the required patented technology and achieve strategic objectives, is critical.

Therefore, firms should consider how to use patent acquisition strategies and to identify shifts in technology among groups of firms in the industry, as well as how to effectively use patent analysis to locate valuable technology resources.

Patent citations not only reveal flows of knowledge and technologies, commonalities of knowledge (Yoon & Park, 2004 ; Stuart & Podolny, 1996), and the market value of technologies, they also reveal the layout of technology development strategies and cooperative relationships between firms. By following the direction of patent citations and links, the technological dependency relationships between firms may be illuminated, enabling elucidation of the structure of technological networks, which are similar to social networks.

From the decision-making point of view, the results of a patent citation analysis may enable the firm to make judgments about partner firms for cooperation and provide a basis for patent acquisition (Park & Yoon, 2013). Moreover, a broad technology network analysis can illuminate the overall social



structure of actors in the technology network, their relative positions, and their relationships and roles (Podolny et al., 1996 ; Yoon & Park, 2004; Marianna et al., 2010).

Most studies investigate the overall industry technology development pattern from the outside looking in, exploring technology development trends, firm strategic behavior (Stuart, 1996), and industry or national competitiveness. From the viewpoint of individual social networks, few scholars have examined the relative positions of firms in technology networks. To address this lack, this research uses the idea of the “ego-network”. The firm’s core technology patent portfolio is defined as the “ego” while patents which directly cite core patents are defined as the “neighborhood,” which includes cited patents, patent citations, and the firm’s own patent citations. We pool all patent to form the core of the firm’s ego- centered technological network (ETN) (Wasserman & Faust, 1994; Yan-dong & Chan, 2011). From the inside looking out, using specific areas of patent litigation as the basis for analysis, the analysis of individual and social network levels enables understanding of the firm’s technology types and trends, the attributes of patent acquisitions and firm technology types, the relationship between acquired patents and their technology development

trends, and changes in their relative positions within technology networks

Based on the different considerations of their actions and functions, firms search for supplementary or complementary knowledge and technology. The purpose of this research is to understand how the firm, through patent transfers, alters its technology position and performs inductive analysis as a reference for future changes in its patent portfolio strategies.

#### Data and Analysis Method

##### *Data*

The subjects of this research are two companies, Cordis and Boston. Initially we retrieved patent data used in a patent infringement case involving a cardiovascular stent. This research collected news items from LexisNexis during the period 2003 to 2016. After processing, items regarding a total of ten patents were retrieved for the period from Aug 12, 2003 to Dec 7, 2016. These ten patents formed the basis for analysis. We next retrieved patents citing and cited by these ten patents from the USPTO. We collected a total of 1,657 cardiovascular stent-related technology patents, which formed the patent database for analysis in this research.

## Analysis Method

This research uses the perspective of ego technology networks for its analysis. The patent analysis method used in this research which is based on overlap of technological knowledge used to measure the supplementing and complementing effect of a technology. Two indicators of technological knowl-

edge position, technology knowledge status (TKS) and technology knowledge reliability (TKR), are used to examine the traits of technology development in the firm and the frequency of cooperative activities with external firms, the changes in firms' relationships. The measurements for the analysis are described below.

*(Editor's Note: the following section is printed in single column format in order to facilitate easier reading of formulas)*

### Affiliated Condition

The definition and mathematics 1 of the matrix of the affiliated condition of the two companies and their patents is:

(1) When the  $K_{gh}$  patent  $P_k$  is the  $r$ th firm's  $A_r$  patent,  $P_k$  and  $A_r$  affiliation = 1, and  $\alpha_{kr} = 1$ ; otherwise, it is 0.

(2) When the  $K_{gh}$  patent  $P_k$  cites any patent of the  $r$ th firm  $A_r$ ,  $P_k$  and  $A_r$  affiliation = 1, and  $\alpha_{kr} = 1$ ; otherwise, it is 0.

$$M = [\alpha_{kr}]_{p,h}, \alpha_{kr} = \begin{cases} 1 & P_k \text{ and } A_r \text{ affiliation} = 1 \\ 0 & \text{otherwise} \end{cases} \quad (1)$$

$k=1,2,\dots,g$  and  $r=1,2,\dots,h, g \geq h$  (1)

(Equation 1:  $k$  denotes the  $K_{gh}$  patent,  $r$  denotes the  $r_{th}$  firm,  $g$  represents the number of patents in the network, and  $h$  represents the number of firms in the network

Technological Knowledge Status (TKS) - Measures the firm's technological knowledge position in the network. The measurement indicator is based on the total number of patents defined as all patents cited by other firm's patents plus the sum of the number of patents the firm manages internally. The measure is defined as given in 2:

$$[TKS_{ii}]_{h,h} = M^T M, TKS_{ii} = \sum_{k=1}^g \alpha_{ik} \alpha_{ki} \quad (2)$$

(( $i=1, 2, \dots, h$ ))

Equation 2: the matrix  $[TKS_{ij}]$  is calculated by Equation. 1 using technology knowledge relationship matrix  $M$  of the firm and patents and the “plot” of its transposed matrix  $M^T$ .  $[TKS_{ij}]$  represents the sum of the overlapping patents (or product) of firm  $i$  itself, the  $[TKS_{ii}]$  diagonal matrix values.  $\alpha_{ik}$  represents the  $(K_{ch})$  associated patent of firm  $i$ , while  $g$  denotes the number of patents in the network and  $h$  represents the number of firms in the network.

Technological Knowledge Reliability (TKR) - This indicator measures the degree of “common knowledge” overlaps in the firm’s network. In 3, the matrix  $[TKS_{ij}]$  is formed from 1 using the technology knowledge relationship matrix  $M$  of the patents and the “plot” of the  $M^T$ .  $[TKS_{ij}]$  represents the sum of the overlap (or product) of patents associated with firms  $i$  and  $j$ , where  $\alpha_{ik}$  represents the  $(K_{ch})$  associated patent of firm  $i$ ;  $\alpha_{kj}$  where  $k$  is the  $(K_{ch})$  associated patent and  $j$  the  $(I_{ch})$  firm, while  $g$  denotes the number of patents in the network and  $h$  represents the number of firms in the network.

$$[TKR_{ij}]_{h \times h} = M^T M \cdot TKR_{ij} \sum_{k=1}^g \alpha_{ik} \alpha_{kj} \quad (3)$$

$$i = 1, 2, \dots, h \text{ and } j = 1, 2, \dots, h, \quad i \neq j$$

The total TKR of each firm and other firms are divided by the number of knowledge associated patents (the firm’s TKS value) to obtain a mean. This is used to define individual firm’s overall network TKR value. This research uses Equation 4 as a generalized expression.

$$TKR_{ii} = \frac{\sum_{j=1}^h TKR_{ij}}{TKS_{ii}}$$

$$i = 1, 2, \dots, h \text{ and } j = 1, 2, \dots, h, \quad i \neq j \quad [ [ "" ] ]$$

The matrix  $[TKR_{ii}]$  represents the mean reliability of the technology knowledge of firm  $i$  in the overall technology network.  $[TKR_{ij}]$  represents the total overlap of the knowledge associated patents of firms  $i$  and  $j$  and at the same time, also represents the degree of the two firms’ knowledge reliability.  $[TKS_{ii}]$  is the  $i$ th firm’s technology knowledge position and  $h$  represents the number of firms in the network.

Common Internal Knowledge (CIK) - This indicator measures the overlap between firms' own patents direct citation links and their internal technology knowledge. The greater the number of citations, the greater the commonality of their technology knowledge. CIK<sub>ij</sub> represents the degree of overlap between the patent knowledge of firms i and j or their supplementarity ratio, where represents the patents of firm i and represents patents associated with externally linked patents of firm j. Limiting condition: the approval date of patent  $K_o$  owned by firm i must be earlier than the approval date of externally cited patent  $K_e$  of firm j.

$$CIK_{ij} = \frac{\sum \alpha_{ik_o} \alpha_{kj_e}}{\sum \alpha_{ik_o}}$$

$i = 1, 2, \dots, h$ , and  $j = 1, 2, \dots, h$ ,  $i \neq j$   
 $o = 1, 2, \dots, n$ , and  $e = 1, 2, \dots, n$ ,  $n < g$  (5)

Common External Knowledge (CEK) - It is important because it measures the number of third party co-citations of two firms in the network, the degree of the external technology overlap, and the external common knowledge of the two firms. The greater the common knowledge overlap, the greater the complementary knowledge. CEK<sub>ij</sub> represents the external patent knowledge overlap or complementarity ratio between firms i and j, where represents the patents of firm i and represents patents associated with externally linked patents of firm j. Limiting condition: the approval date of patent  $K_o$  owned by firm i must be earlier than the approval date of externally cited patent  $k_e$  of firm j.

$$CEK_{ij} = \frac{TKR_{ij} - \sum \alpha_{ik_o} \alpha_{kj_e}}{TKS_{ii} - \sum \alpha_{ik_o}}$$

$i = 1, 2, \dots, h$  and  $j = 1, 2, \dots, h$ ,  $i \neq j$   
 $(o = 1, 2, \dots, n$  and  $e = 1, 2, \dots, n$ ,  $n < g$  (6)

### Result

A summary of the results of the data from the binary correlation matrix (after calculation using (2), (3), and (4), is given in Table 1 below.

The indicators TKS and TKR are useful for firms conducting a self technology network analysis. TKS measures the relative position of each firm in the technology network, resembling an assessment of their prestige (Podolny et al., 1996 ; Stuart, 1996 ; Wasserman & Faust, 1994). Thus, the greater the scope

of knowledge firms in the self technology network can directly contact, integrate, or manage, the greater their prestige. Faust (1997) contends that the prestige position is affected by the resources the firm owns. TKR is used to measure the degree of knowledge overlap between two firms in a firm's self technology network in order to understand the degree of difference in knowledge attributes between the firm and other firms (Rindfleisch, 2001). It can act as a reference in the firm's selection of cooperation partners.

Based on the needs of the research, from the large number of companies, we selected only the first six companies as subjects for this research: ACS, BCS, Cook, Cordis, Expandable/Lifeport, and Medtronic. As shown in Table 1, after patent being (transferred, the TKS values of most firms show clear growth and their technology position in their self technology network has increased. For example, Cordis (TKS increase of 60), BSC (TKS increase of 37), Cook (TKS increase of 24), Medtronic (TKS increase of 11) all show obvious growth. The TKS value for ACS, however, fell after transfer. The related value for Expandable disappears after patent being transferred. Conversely, the related value for Lifeport appeared after patent

transfer. This implies that at the same time as ACS was transferred also released a portion of its technology resource, reducing its technology knowledge position. Via patent acquisition activities, Lifeport reduced the processes and technology barriers necessary to enter this technology field. Expandable used transfers of core technology and collected funds from the transfer as a way to make quick profits for the firm. Thus, its TKS value disappears from this data set after transfer.

Looking at TKR, five firms used acquisitions to acquire desired technology, strengthening their technological capability and reducing their reliance on technology from outside firms and cooperation activity ratio. Consequently, their TKR fell after patent transfer, with the exception of Lifeport, whose TKR rose. Looking at technology development strategies, though still in the early stage in a field replete with technologically-capable firms, Lifeport has developed its own technological capabilities with the support and integration of outside technology.

Comparison of the results in Table 1 and cumulative chart of patents before and after transfer shows that, the rise or fall in the number of patents after the

Table 1. Evaluation index before/ after patent transference of the six main companies

Company	TKS		TKR		Patent counts	
	Before	After	Before	After	Before	After
1 ACS	99	80	12.626	11.062	34	33
2 BSC	65	102	17.831	10.853	13	16
3 Cook	143	167	14.014	9.287	16	22
4 Cordis	137	197	14.073	8.609	16	25
5 Expandable/Lifeport	189	58	11.831	12.621	10	18
6 Medtronic	131	142	14.305	10.120	14	17

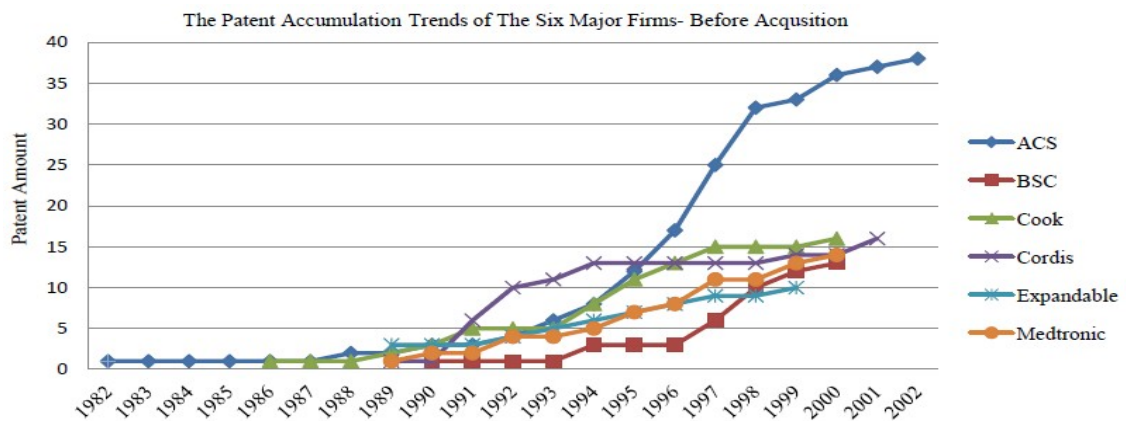


Figure 1. The Patent Accumulation trends of the Six Major firms

transfer was driven by the firm's strategic goals, depending on whether patents were acquired to increase the firm's technology capabilities, or whether they were transferred out for cash. It appears that five of the companies sought to acquire patents in order to increase their technology development capability. Though ACS transferred a patent out, this transfer caused its TKS value to fall, showing the importance of this patent. The data set for TKS value, TKR value, and number of patents before and after transfer is given in Figure 2. It shows that the patent transfer process ensured that some firms experienced changes after the development of unique technology or outside firm cooperation.

However, for other firms, the relative effect is unclear. Looking at the left side of Figure 2, the cluster is smaller. Firms with a smaller number of patents cluster on the left before and after patent transfer, with only a small portion shifting to the right. This implies that when a firm acquires a more unique patent or patent with high market value, it moves towards a higher knowledge position, gradually developing unique patented technology, reducing its competitive disadvantages and building competitiveness in its market. After the transfer, there is no great change in the position of firms on

the left. They are unable to raise their technology knowledge position via patent acquisition. Such firms can only follow the market leader, or be weeded out after languishing on the fringes of the market. Firms that possess more patented technology are concentrated on the right side of Fig. 2. Though after acquiring patents they move in different directions, for such firms the direction of the movement shows the strategic implications of their technology development.

The smaller cluster located on the right in Figure 2 represents firms whose technology knowledge position is lower, after being weeded out. This displays the changes in trajectory among important firms before and after patent transfer, as shown in Figure 3. *(Note: see Figures 2 - 6 at the end of this article.)*

The six firms in this research tend to locate on the right. Their position in the technology network is higher. Because they added patents, the size of the cluster increased. Benefitting from patent transfers, after holding unique patents, BSC, Cook, Cordis, and Medtronic all shifted rightward and their knowledge technology position rose. Their reliance on outside technology fell, as did the frequency of their cooperation with outside firms. ACS, by



contrast, shifted to the left after patent transfer and its knowledge technology position fell. Expandable disappeared after patent transfer, while Lifeport appeared.

For ease of interpretation, simplified Figures 4 and 5 show rightward and leftward shifting firms. Figure 4 shows that before transfer, BCS was located among the four leftmost firms, and its knowledge technology status was lowest and TKR value the highest, illustrating how reliance on outside support and cooperation played a key role in its technology development process and how acquiring its own patents was a rapid shortcut to increasing its own technology development capability. For Medtronic, Cordis, and Cook, prior to transfer they were located in mutually overlapping clusters whose size differences were not great. It is clear that the knowledge technology status, number patents owned, and degree of overlap with outside technology of these three firms is quite similar. After transfer, the number of patents owned increased. The cluster not only increased in size, but shifted rightward. As their technology status rose, their TKS values fell. This implies that the acquired patented technology was indeed helpful for these firms in developing their own unique technology. Among this firms, Cordis

exhibited the most obvious change. This highlights the importance of constructing a firm's own independent technology development capability in increasing its competitiveness.

Figure 5 displays the shift in ASC's trajectory before and after transfer, along with the status of Expandable before transfer and the appearance of Lifeport after transfer. Because ACS only transferred one patent, the change in the size of the circle in the figure is not apparent. Worth noting is that the TKS value of ACS fell from 99 to 80 after the patent transfer, while TKR fell from 12.656 to 11.062, and the cluster shifted down and to the left. This implies that the patented technology must have been extremely unique in order to have reduced the knowledge technology status of ACS.

Since ACS already has a solid foundation for technology development, the effect of the transfer on its reliance on outside support is slight. Fig. 4 shows that prior to the patent transfer, Expandable had the highest knowledge technology status among the 6 firms. The cluster is below the TKR value of all the firms, implying that Expandable's technology is even more unique than that of the other firms. Thus, during the technology development process, it is clear that Ex-

pandable's reliance on outside technology resources is low. From the viewpoint of market value, Expandable's technology patents have great potential and high market value. This enables Expandable to obtain great profits from transferring them. Such profits can then act as resources for future technology development.

Unlike the other firms, Lifeport's cluster appeared after the transfer. Lifeport's strategy was to acquire patents to rapidly obtain desired technology and break out of its weak position. As a result, the clusters of Lifeport and ASC after transfer overlap, showing the commitment of Lifeport to this area of technology. Its TKR value shows a considerable overlap between Lifeport and external knowledge technology, signaling that the technology Lifeport is constructing is still in its early stages and has a strong need for integration with external support and resources. In sum, Lifeport clearly has a great interest in this area of technology and this market and has been aggressively acquiring key technology and investing substantially in the development of unique technological capabilities and closely cooperating with outside firms. This will enable it to rapidly enter target markets, shrink the technology development process, and lay the foundation for stable competitiveness.

## Conclusion

The results of this research demonstrate that irrespective of patent transfer strategy, the relative position of firms in the technology network is displaced by patent transfers. An analysis of the trajectory of displacement is given in Figure 6. A division of TKS and TKR into quadrants shows that the data set may be divided into pioneers, leaders, followers, and laggards.

Cook, Cordis, Medtronic, and Expandable were located in the upper right prior to patent transfer and had a higher TKR and TKS. This means that they had a higher status in the self technology network. However, unlike the patented technology of future pioneers, current market leaders are more inclined to develop existing technologies which can be applied in current markets. Their patented technologies are more easily referenced and expanded by other firms. This research examines this field's well known, leading firms. After patent transfer, these firms' technology status moves into a leading position, perhaps demonstrating that the strategic goal of these firms is to acquire the unique patented technology of other firms in order to rapidly enter new markets. Consequently, they have higher TKR and

TKS. Though these firms have great technology development potential, one risk they take is developing technology more rapidly than market demand requires or moving in a different direction than the market, leading to the phenomenon of destructive innovation.

After patent acquisition, Cook, Cordis, and Medtronic shifted downward and rightward and had a relatively higher TKS and TKR than firms in the other quadrant. This indicates that these three firms developed technology that was more unique than the technology common in the market and thus had greater market potential. Because their ability to develop unique technology is more stable than that of other firms, they are more active in cooperating with outside firms. Further, since their technology is more unique and not available in the market, the number of citations of their patents by outside firms is lower while internal citations are higher.

This research treats such well-known firms as pioneers. After firms have undertaken patent transfer and their quadrant has shifted, their strategic goals become similar in order to rapidly enter new markets and acquire key technology patents. However, this type of market is typically already mature. After patent acquisition, the firm

will integrate the technology, producing synergies and developing superior new products.

Hence, when developing technologies for the market, current leaders need to consider the necessary resources for effective integration, and gradually build their own unique technology capabilities to avoid the limitations imposed by market demand development, risks from sudden changes in the market, and the threats of new pioneers.

ACS before transfer and Lifeport after transfer are both located in the upper left quadrant. Firms located in that area are followers of trends set by the leading firms. Lacking their own technology capability, they are forced to rely on outside firms for support and integration and cite great numbers of outside technology patents. Thus, these firms have higher TKR and lower TKS. After transfer firms that shift quadrants may reduce their internal subdivisions, engage in resource integration, or carry out entrepreneurial development in new areas of technology or new markets. They may even sell off key technologies in unique areas, reducing their TKS. However, because their technology resources have market value, they are cited often by other firms, giving them higher TKR.

In order to establish long-term competitive superiority, current followers should aggressively develop their technological capabilities and acquire patents for key technologies, a rapid shortcut to technological capability. However, if such firms face limited internal resources or integration capabilities, and cannot invest heavily in R&D, then their patent strategy becomes even more important. Such firms can surround competitors' key technology patents, to obstruct their strategic technology development or slow their entrance into particular markets.

After transfer, ACS shifted from the upper left quadrant to the lower right. Fig.3 shows that firms in that quadrant have fewer patents and their TKS and TKR values are lower. This indicates that these firms both lack market technology development capability and infrequently cooperate with outside firms, and their patents are less cited as well. Such firms are treated as laggards in this research. After transfer, they shift to a new quadrant, indicating that their strategy has moved to reducing internal subdivisions, exiting certain technology fields, and selling off core technology patents, reducing TKR and TKS. In sum, firms in this area have fewer patents and lower levels of internal resources. They have no

extra resources to devote to R&D activities aimed at new technology development or to acquire technologies from the market. Consequently, their patent design should avoid patents already existing in the market, to reduce opportunities for competitors to sue them. After obtain funds from profits, investment should be made in raising R&D capabilities, cooperative opportunities with outside firms should be seized, and the ability to develop unique technologies should be fostered.

The resource-based view stresses that when drafting a competitive strategy, firms must analyze their internal resources and the strengths of competitors and their likely adaptive strategies. However, when forming resources for a firm's competitive strengths, they must be heterogeneous, immobile, valuable, rare, inimitable, and irreplaceable. In the technology-intensive cardiovascular stent industry, the critical resource is the firm's possession of unique technology development capabilities and patent portfolios with high market value. From the point of view of network analysis, when firms can occupy a higher position in the technology network, this is equivalent to having greater competitiveness.

Few researchers have used the individual social network perspective to explore the position of firms in the technology network. To address this gap in the literature, this research uses an inside-out perspective, focusing on a firm's litigation against other firms in order to understand the relative positions of firms in a technology network and the changes in trajectory wrought by patent transfers.

Transfer and purchase of technology patents is a major driving force behind firm strategic activities aimed at maintain competitiveness and a stable position in the market. Firms may exit markets, reduce internal subdivisions, carry out cost control, or sell off patents, moving their position to the left or downward and making them followers or laggards. By the same token, when firms enter a new technology area or market, increase their technological capabilities, or acquire technology patents, their position shifts to the right or downward, and they become leaders or pioneers. We hope the results of this study can contribute to the performance of appropriate analysis when firms engage in internal evaluation of their own resources when

acquiring patents, as well as serving as a basis for evaluation of the effectiveness of patent acquisitions to ensure that after patent acquisition, the firm moves to the expected position and reaches its strategic goals.

This research only explores and classifies the trajectory of firm technology position shifts. Future research can use central or mean figures for a more accurate determination of firm position within the technology network. Further, this research investigated only a handful of firms in the cardiovascular stent field. Future scholars should include all the firms in the industry in their research and carry out a more general analysis, exploring technology clusters, observing the shifts within groups of firms, obstacles to movement, and changes and adaptations in the role of individual firms within groups, to act as a reference for firms performing internal evaluation and formulating strategies. The generalizability of the results of this research are limited by its exploration of only one industry. Future researchers should investigate other industries in order to develop more comprehensive strategic implications.

## References

- Faust, Katherine. (1997). Centrality in affiliation networks. *Social Networks*, Vol.19, 157–191.
- Gantumur, T., & Stephan, A. (2010). Do external technology acquisitions matter for innovative efficiency and productivity? DIW Berlin Discussion Paper No. 1035
- Hagedoorn J. (2002). Inter-firm R&D partnerships: an overview of major trends and patterns since 1960. *Research Policy* Vol.31, 477–492.
- Hagedoorn, J., & Wang, N. (2012). Is there complementarity or substitutability between internal and external R&D strategies? *Research Policy*, Vol.41, 1072-1083.
- King DR, Slotegraaf RJ, Kesner I. (2008). Performance implications of firm resource interactions in the acquisition of R&D intensive firms. *Organization Science*, Vol.19, 327–340.
- Marianna makri, Michal A. Hitt & Peter J. Lane, (2010). Complementary Technologies, Knowledge Relatedness, and Invention Outcomes in high Technology mergers and acquisitions. *Strategic Management Journal, Strat. Mgmt. J.*, Vol.31, 602–628.
- Podolny, J.M., Stuart, T.E. & Hannan, M.T. (1996). Networks, knowledge, and niches: Competition in the worldwide semiconductor industry, 1984-1991, *American Journal of Sociology*, Vol.102, 659-689.
- Park, I., & Yoon, B. (2013). Identifying Potential Partnership for Open Innovation by using Bibliographic Coupling and Keyword Vector Mapping, *International Journal of Computer, Electrical, Automation, Control and Information Engineering*, Vol.7, 206-211.
- Phene, A., Tallman, S., & Almeida, P. (2012). When do acquisitions facilitate technological exploration and exploitation? *Journal of Management*, Vol.38, 753-783.
- Rindfleisch, A., & Moorman, C. (2001). The Acquisition and Utilization of Information in New Product Alliances: A Strength of Ties Perspective, *Journal of Marketing*, Vol.65, 1-18.

- Stuart, T. E. & Podolny, J. M. (1996).  
Local search and the evolution of  
technological capabilities, *Strate-  
gic Management Journal*, Vol.17,  
21-38.
- Wasserman, S. & Faust, K. (1994). *So-  
cial Network Analysis: Methods  
and Applications*. Cambridge  
University Press, UK.
- Yan-dong, Z., & Chan, Z. (2011). The  
cooperation network of Chinese  
researchers: a perspective of ego-  
centered social network analysis  
[J]. *Studies in Science of Sci-  
ence*, Vol.7, 999-1006
- Yoon, B. & Park, Y. (2004). A text-  
mining-based patent network:  
analytical tool for high-  
technology trend, *Journal of High  
Technology Management Re-  
search*, Vol.15, 37-50.



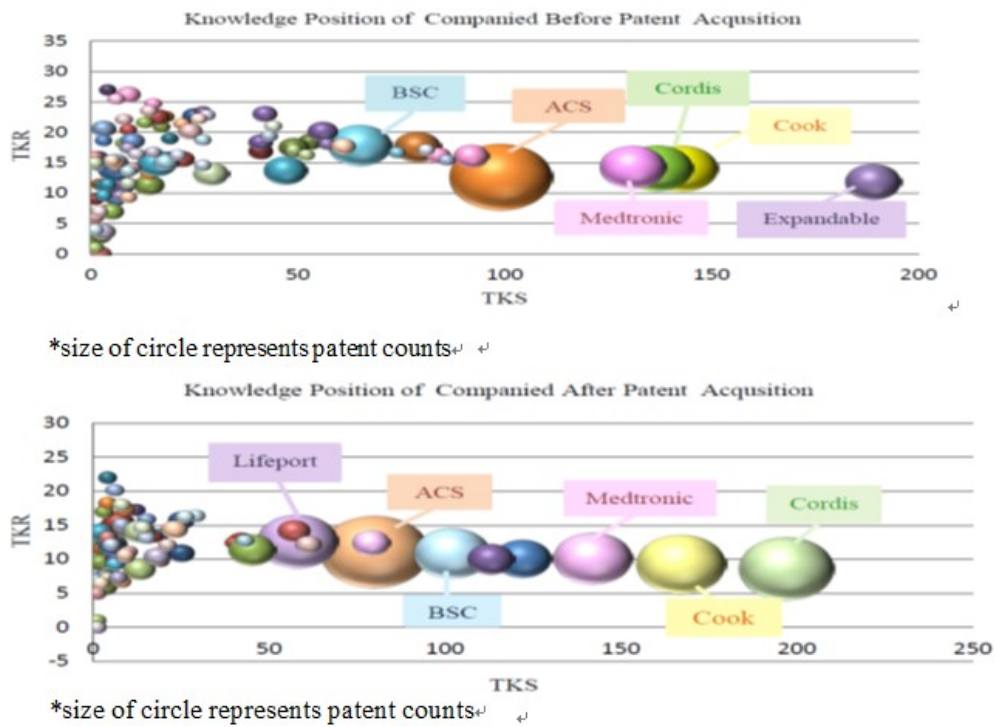


Fig. 2: Knowledge Position of Companied Before/ After Patent Acquisition

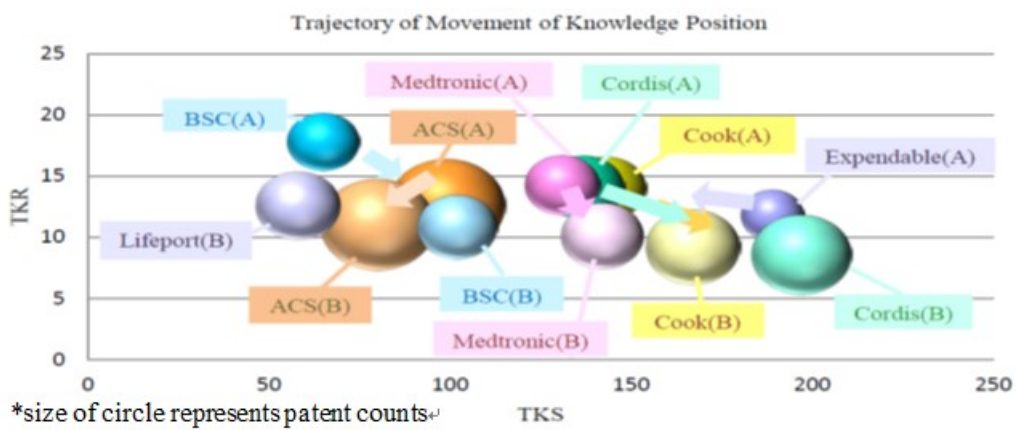


Fig. 3: Trajectory of Movement of Knowledge Position

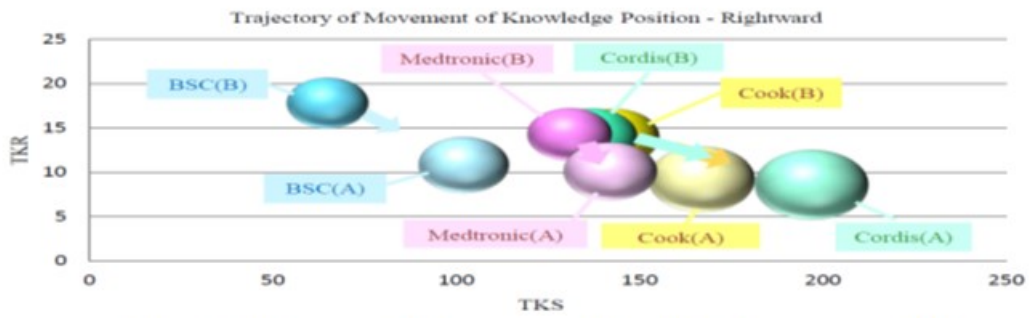


Fig. 4: Trajectory of Movement of Knowledge Position – Rightward.

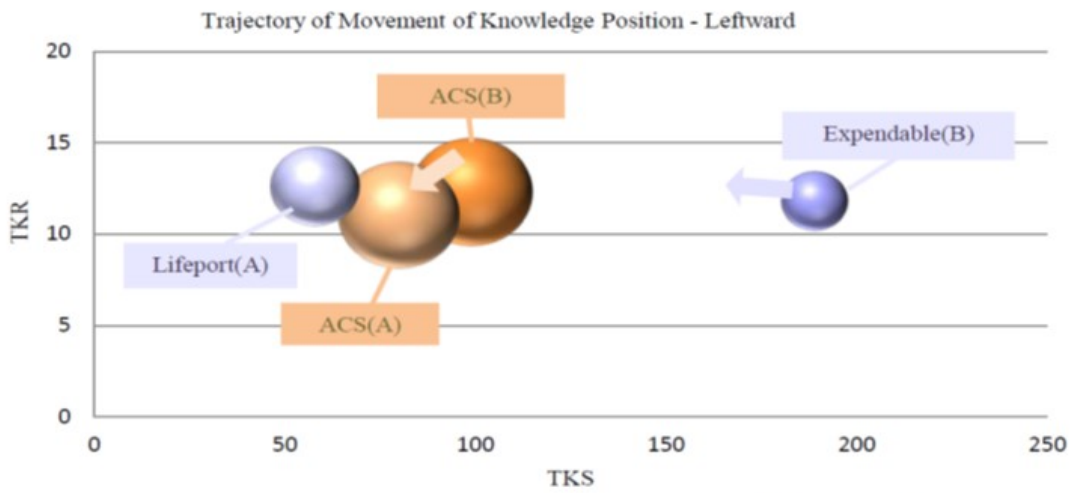


Fig. 5: Trajectory of Movement of Knowledge Position – Leftward.

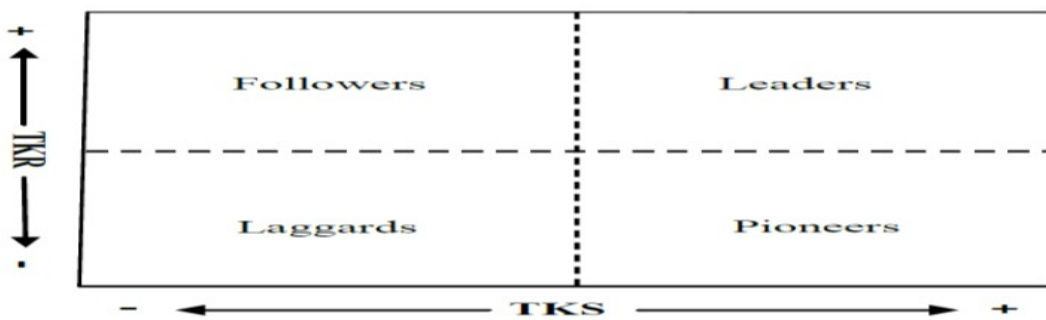
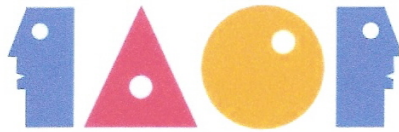


Fig. 6: the Strategic Implication of the Trajectory.



## A STUDY INTO THE IMPACT OF EMPLOYEE WELLNESS AND JOB SATISFACTION ON JOB PERFORMANCE

Chien-Hung Wu

Department of Marine Recreation, National Penghu University of Science and Technology, Taiwan R.O.C

I-Shen Chen

Department of Leisure Industry Management, National Chin-Yi University of Technology, Taiwan R.O.C.

Jia- Chern Chen

Department of Leisure Industry Management, National Chin-Yi University of Technology, Taiwan R.O.C.

\*Corresponding Author: [jiachern@gmail.com](mailto:jiachern@gmail.com); [ymcafit@gmail.com](mailto:ymcafit@gmail.com)

### Abstract

This study aims to investigate the impact of employee health and job satisfaction on job performance. The study adopted a questionnaire survey approach and dispatched questionnaires to specifically chosen enterprises in Taiwan which employ more than 100 full-time employees. A variety of organization types including public agencies, private companies, as well as for-profit and non-profit organizations were approached. The questionnaire was then distributed in northern, central, and southern Taiwan, with the cluster sampling period running from June 2014 to May 2015. A total of 530 questionnaires were sent out and 493 were returned, giving a return rate of 93.0%. After deducting 60 incomplete questionnaires which were deemed invalid, the total number of valid questionnaires was 433, resulting in an effective return rate of 87.8%. The results of this study showed that: 1. Employee health has a clear positive influence on job performance; 2. Employee health has a notable positive impact

on job satisfaction; 3. Job satisfaction has a noticeably positive effect on job performance. In the conclusion, this study proposes some suggestions for further research as well as some implications for management based on the results obtained.

Keywords: employee health, job satisfaction, job performance, social support, individual value

## Introduction

The idea that labor can be viewed as a resource by enterprises has now become ubiquitous. In keeping with this idea, ensuring the correct implementation of labor, maintaining sound physical and mental health among employees, along with taking measures to prevent injuries have all become key activities undertaken by Human Resources (HR). If employees are healthy it can increase their output, job satisfaction, and overall performance at work. This in turn can reduce employee turnover and outlays on medical expenses, while also reducing the accumulation of workplace injuries, chronic illnesses, and reductions in physical ability to their lowest levels. All of this can bring productivity and competitiveness to an enterprise's operations. In their study titled "Health, Human Capital, and Economic Development", the scholars Tariq & Ihtsham (2014) investigated the short- and long-term correlations between employee health in the workplace and economic growth in developing countries. The results of their study

revealed that the correlation between good employee health within the workplace and economic growth helped to increase gross domestic product (GDP) by an average of 7.34%, while per-capita GDP increased by 4.16%. The discoveries made by this study show that employee health can have long-term and noticeable impacts on the economic growth of developing countries. Additionally, the International Labor Organization identified that the physical and mental health conditions of workers are important considerations for management in the 21st century (ILO, 1993). With competition between enterprises now so intense, workers are finding themselves in highly competitive and pressurized job environments. This causes physical, mental, and motivational health problems for employees. These health problems may lead to a drop in productivity, an increase in costs for the business, as well as a drop in the organization's competitiveness. As for the psychological aspect, the crushing of aspiration results in anxiety, depression, and may even cause suicide. Radical changes in the indus-

trial environment and forms of employment, along with workplaces that are full of tension, pressure, despair, and overwork have caused an increase in job-related stress among workers. This has also caused problems with overwork and workplace depression to become increasingly potent – a trend which is shared around the world. Longenecker, Yonker & McGoldrick (2009) stated that employee health is a significant potential competitive advantage which is often overlooked by companies. For this reason, valuing and paying attention to employee health can be an important sustainable development issue for enterprises, organizations, and institutions. When enterprises strive to improve and strengthen their employees' health, increase levels of job satisfaction, and lower occupational burnout, their employees will make an even greater contribution to the organization. Improving employee health can also be used by enterprises to reduce their costs, while managers can use these cost savings to obtain higher profits. Maintaining employee health is a win-win competitive strategy for enterprises: it not only improves the health of the employees, but also increases the enterprises' competitiveness and economic benefits. For these reasons, this study mainly investigates the relationship between employee health, job satisfaction, and job

performance. The results of this study may be used as a reference of managerial practice by industry.

## Literature Review

### *Studies Into Employee Health*

In 1961, Professor Halbert Dunn defined wellness as: integrating the mind, body, and spirit, and being oriented toward maximizing the potential of which the individual is capable within the environment where they are functioning, while striving to maintain a healthy state and developing the individual's greatest potential to achieve an overall perception of well-being. Well-being is a subjective state which covers health, happiness, satisfaction, comfort, and contentment. This state includes the physical, materialistic, social, emotional, and active aspects which make up one's quality of life. In addition, Hettler (1980) developed his Six Dimensions of Wellness Model which includes physical, social, emotional, intellectual, occupational, and spiritual health. Later research took this one step further and discovered that employee health influences the employees' judgment of their self-efficacy as well as their overall positivity. For instance, people with a proactive mindset, positive mood, and a belief in themselves (Mitchell, Hopper, Daniels, George-

Falvy, & James, 1994), as well as those with a positive attitude all have an increased commitment to work obligations, better perceived value of their work, confidence that results will be achieved (Erez & Isen, 2002), and establish even greater goals (Ilies & Judge, 2005). Previous empirical studies have discovered that employee health has a clear link with organizational citizenship behavior (OCB) (Taris, 2006; Wright, Cropanzano, Denney, & Moline, 2002), an individual's job performance, as well as an organization's overall performance. When employees have a proactive and positive approach to their health, it has a clear positive impact on their enthusiasm at work (Beck et al., 1987). Furthermore, when employees are physically fit with good mental and physical health it has a stabilizing effect on their physiology, psychology, emotions, recognition, and interpersonal relationships at work.

#### *Studies Into Job Satisfaction And Occupational Performance*

According to the social exchange theory, employees see their work as a contribution and exchange with the organization which they work for, with increased performance at work leading to the expectation of more remuneration from the organization (Van Dyne,

Graham, & Dienesch, 1994). The social cognitive theory perspective explains that employee job satisfaction within an enterprise influences the employees' attitudes to their work (Eagly & Chaiken, 1993; Fishbein & Ajzen, 1975), with this attitude leading to remuneration as part of their job performance (Naylor, Pritchard, & Ilgen, 1980; Vroom, 1964). As a result of this, scholars have concluded that there is a positive correlation between job satisfaction and job performance (Edwards & Bell, 2008). Brief (1998) believed that job satisfaction is an attitude which stems from the comparison of an employee's expectations of a job with the actual results seen (Misener, Haddock, Gleaton, Ajamieh, 1996). Job satisfaction includes both internal and external satisfaction. Internal satisfaction covers the enjoyment obtained from a job's intrinsic interest, excitement, accomplishments, autonomy, responsibilities, and opportunities; whereas external satisfaction refers to the enjoyment obtained from a job's environment, salary and benefits, opportunities for advancement, effective operation, along with efficient organization and decision-making (Kalleberg, 1977; Rorter, Steers, Mowday, & Boulian, 1974). High levels of job satisfaction can stimulate enthusiasm and positive feelings among employees toward their companies, making them more willing

to exert themselves while carrying out their tasks and responsibilities. This ultimately benefits and helps to increase the organizations' performance (Eagly & Chaiken, 1993; Judge, Bono, Thoresen & Patton, 2001). Luthans (1992) pointed out that high levels of job satisfaction have a direct correlation with good physical fitness and health among employees. Similarly, Spector (1997) indicated that improving the overall health condition of employees is one way of achieving job satisfaction. To summarize the above-mentioned studies, employee health is an important element which affects job satisfaction. It can therefore be used as an early warning sign for organizations to be aware of human resource issues in a timely manner. This means that action can be taken when required to maintain the enterprises' operations and production capacity.

## Research Methodology

### *Research Framework*

In accordance with the aims of this study and other relevant literature, this study proposes a framework for the relationship between employee health,

job satisfaction, and job performance. This framework is shown in Figure 1.

### *Research Hypotheses*

This study proposes the following hypotheses in accordance with the aims of the study and other relevant literature:

**Hypothesis 1:** Employee health has a noticeably positive impact on job performance.

**Hypothesis 2:** Employee health has a noticeably positive impact on job satisfaction.

**Hypothesis 3:** Job satisfaction has a noticeably positive impact on job performance.

### *Research Participants*

This study issued questionnaires to specifically chosen enterprises in Taiwan which employ more than 100 full-time employees. A variety of organization types including public agencies, private companies, as well as for-profit and non-profit organizations



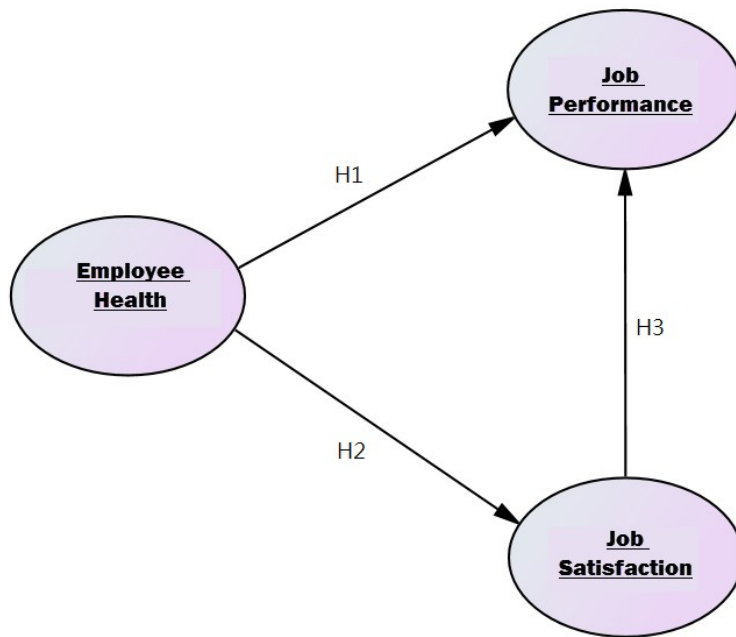


Figure 1. Research framework

were approached. The questionnaire was then distributed in northern, central, and southern Taiwan, and adopted a cluster sampling method which ran from June 2014 to May 2015. A total of 530 questionnaires were sent out and 493 were returned, giving a return rate of 93.0%. After deducting 60 incomplete questionnaires which were deemed invalid, the total number of valid questionnaires was 433, resulting in an effective return rate of 87.8%.

#### *Research Tools*

The content of this study's questionnaire was mainly compiled by amalgamating the areas covered in the literature review. The Employee Well-

ness Scale referred to the five factors of wellness in the research scales put forward by Myers & Sweeney (2008), and were then edited in accordance with the scales used by Porter, Claycomb & Kraft (2008) by translating a total of 23 statements for the questionnaire. The Occupational Burnout Scale referred to the theories put forward by Maslach (1982), and were edited in accordance with those used by Almer & Kaplan (2002) to create 9 statements. The Job Performance Scale referred to the theories on job performance as put forward by Choo (1986), as well as those used by Fisher (2001) to create 9 statements. Each of the aspects covered in this study used the Likert Scale for measurement, with each statement using a

score ranging from 1 (strongly disagree) to 5 (strongly agree).

### Data Analysis

This study took all of the data from returned valid questionnaires and encoded it, removed any errors, organized it, dealt with missing values, converted the reverse-wording questions, and then examined and combined the scales. After a final check to ensure no errors were present, the data was analyzed and collated using SPSS for Windows 19.0.

### Results And Discussion

#### *Factor Analysis*

#### Employee Wellness Scale.

This study used Principal Component Analysis (PCA) to carry out factor analysis. After using the Varimax Method to perform orthogonal rotation, the factor loading values which were extracted were all greater than .5. The factors were segmented as follows: Factor 1 was named “Staying Healthy” and contained four statements with an explained variation of 14.516%; Factor 2 was named “Coping Mechanisms” and contained four statements with an explained variation of 10.959%; Factor 3 was named “Health Awareness” and

contained five statements with an explained variation of 14.446%; Factor 4 was named “Social Support” and contained five statements with an explained variation of 12.683%; Factor 5 was named “Individual Values” and contained five statements with an explained variation of 13.816%.

#### Job Satisfaction Scale.

This study used Principal Component Analysis (PCA) to carry out factor analysis. After using the Varimax Method to perform orthogonal rotation, the factor loading values which were extracted were all greater than .5. Factor was named “Job Satisfaction” and contained nine statements with an explained variation of 67.483%.

#### Job Performance Scale.

This study used Principal Component Analysis (PCA) to carry out factor analysis. After using the Varimax Method to perform orthogonal rotation, the factor loading values which were extracted were all greater than .5. Factor was named “Job Performance” and contained nine statements with an explained variation of 60.709%.

#### *Reliability Analysis*

The internal consistency coefficients from this study (using Cron-

bach's  $\alpha$  value) are as follows: Staying Healthy: .830, Coping Mechanisms: .816, Health Awareness: .858, Social Support: .806, Individual Values: .841, Job Satisfaction: .939 and Job Performance: .918.

### *Correlation Analysis*

Table 1 shows the results of the correlation analysis that was carried out. A description of the correlations for each of the variables is as follows: The product-moment correlation between employee health and job performance is  $r(431) = -.615, p < .01$ . This shows that when employees have a better understanding of health, their job performance is better. The product-moment correlation between employee health and job satisfaction is  $r(431) = -.539, p < .01$ . This shows that when employees have a better understanding of health, they are more satisfied at work. The product-moment correlation between job satisfaction and job performance is  $r(431) = -.722, p < .01$ . This shows that the more satisfied employees are, the better they perform at work.

### *Employee Health and Job Performance Regression Analysis*

In accordance with the returned questionnaires, the variables were en-

tered into the regression analysis in two stages. The five aspects used as control variables for the analysis were: gender, age, level of education, length of service, and the independent variable. These were used to examine the influence on job performance which served as the dependent variable. The results are shown in Table 2.

In the first stage, the control variables were inserted to understand the impact of these variables on the job performance dependent variable. Model 1 (M1) was produced, with the F-test value of significant overall explanatory power being 6.289 which shows that the results were statistically significant ( $p < .001$ ). The R2 value for M1 was 0.56, AdjR2 was 0.47, and  $\Delta R2$  increased by 0.56.

In the second stage of the analysis, employee health was included as an independent variable and Model 2 (M2) was produced. From this it can be seen that there is a clear positive correlation between employee health and job performance, with an F value of 56.486 showing that the results were statistically significant ( $p < .001$ ). The R2 value for M2 was .398, AdjR2 was

Table 1. Correlation Analysis For The Employee Health, Job Satisfaction, Occupational Burnout, And Job Performance Scales (N=433)

	1	2	3	4	5	6	7	8
1. Gender	1.000							
2. Age	- .241**	1.000						
3. Level of Education	-.076	-.213**	1.000					
4. Length of Service	-.126**	.825**	-.268**	1.000				
5. Employee Health	.066	-.138**	.010	-.183**	1.000			
6. Job Satisfaction	.066	-.219**	.075	-.234**	.539**	1.000		
7. Occupational Burnout	.036	.169**	-.016	.183**	-.399**	-.589**	1.000	
8. Job Performance	-.018	-.145**	-.030	-.208**	.615**	.722**	-.525**	1.000
Average	1.56	2.89	3.05	3.22	48.92	20.51	31.49	20.01
Standard Deviation	.497	1.024	.516	1.538	10.125	5.815	4.911	4.775

Note: \* refers to a significant correlation when the level of significance is .05; \*\* refers to a significant correlation when the level of significance is .01; \*\*\* refers to a significant correlation when the level of significance is .001.

.391, and  $\Delta R^2$  increased by .343. The regression  $\beta$  coefficient for employee health was .597, and the level of significance was reached ( $p < .001$ ), showing that employee's job performance is better when they are healthier. Therefore, the hypothesis proposed by this study that employee health has a noticeably positive impact on job performance is supported.

According to Table 3, the tolerance figures for Models 1 and 2 are both greater than 0.1. As the variance inflation factor (VIF) is also under the standard value of 10, this shows that there are no repeated collinearity issues within the models. Checking for unique error terms was carried out using the Durbin-Watson (D-W) statistic. With all of the values achieved being between 1.000 and

Table 2. Employee Health And Job Performance Regression Analysis

	Dependent Variable: Job Performance	
	$\beta$ Coefficient (Model 1)	$\beta$ Coefficient (Model 2)
Control Variables		
Gender	-.047	-.076
Age	.064	.027
Level of Education	-.099	-.077
Length of Service	-.293	-.151
Independent Variable		
Employee Health		.597***
F Value	6.289***	56.486***
R <sup>2</sup>	.056	.398
AdjR <sup>2</sup>	.047	.391
$\Delta$ R <sup>2</sup>	.056	.343

Note: \* refers to a significance level greater than .5 ( $p < .05$ ); \*\* refers to a significance level greater than .01 ( $p < .01$ ); \*\*\* refers to a significance level greater than .001 ( $p < .001$ )

Table 3. Collinearity Diagnosis As Part Of A Regression Model For Employee Health And Job Performance

Model	Research Variable	Tolerance	VIF	Durbin-Watson
M1	Gender	0.913	1.095	1.823
	Age	0.301	3.325	
	Level of Education	0.916	1.092	
	Length of Service	0.307	3.258	
M2	Gender	0.911	1.097	1.765
	Age	0.300	3.329	
	Level of Education	0.914	1.094	
	Length of Service	0.301	3.317	
	Employee Health	0.962	1.039	

2.000 (which is close to the value of 2), this shows that there are no instances of autocorrelation.

*Employee Health and Job Satisfaction  
Regression Analysis*

In accordance with the returned questionnaires, the variables were en-

tered into the regression analysis in two stages. The five aspects used as control variables for the analysis were: gender, age, education level, length of service, and the independent variable. These

were used to examine the influence on job performance which served as the dependent variable. The results are shown in Table 4.

Table 4. Employee Health And Job Satisfaction Regression Analysis

Dependent Variable: Job Satisfaction		
	$\beta$ Coefficient (Model 1)	$\beta$ Coefficient (Model 2)
Control Variables		
Gender	.029	.005
Age	-.069	-.102
Level of Education	.017	.036
Length of Service	-.168	-.045
Independent Variable		
Employee Health		.516***
F Value	6.550***	38.989***
R <sup>2</sup>	.058	.313
AdjR <sup>2</sup>	.049	.305
$\Delta R^2$	.058	.256

Note: \* refers to a significance level greater than .5 ( $p < .05$ ); \*\* refers to a significance level greater than .01 ( $p < .01$ ); \*\*\* refers to a significance level greater than .001 ( $p < .001$ )

In the first stage, the control variables were inserted to understand the impact of these variables on the job performance dependent variable. Model 1 (M1) was produced, with the F value being 6.550 which shows that the results were statistically significant ( $p < .001$ ). The R<sup>2</sup> value for M1 was 0.58, AdjR<sup>2</sup> was 0.49, and  $\Delta R^2$  increased by 0.58.

In the second stage of the analysis, employee health was included as an independent variable and Model 2 (M2)

was produced. From this it can be seen that there is a clear positive correlation between employee health and job satisfaction, with the F-test value of significant overall explanatory power being 38.989 which shows that the results were statistically significant ( $p < .001$ ).

The R<sup>2</sup> value for M2 was .313, AdjR<sup>2</sup> was .305, and  $\Delta R^2$  increased by .256. The regression  $\beta$  coefficient for employee health was .516, meaning that the level of significance was reached ( $p < .001$ ). This result shows

that employees are more satisfied with their jobs when they are healthier. Therefore, the hypothesis proposed by this study that employee health has a noticeably positive impact on job satisfaction is supported.

According to Table 5, the tolerance figures for Models 1 and 2 are both greater than 0.1. As the variance inflation factor (VIF) is also under the standard value of 10, this shows that there are no repeated collinearity issues within the models. Checking for unique error terms was carried out using the Durbin-Watson (D-W) statistic. With all of the values achieved being between 1.000 and 2.000 (which is close to the value of 2), this shows that there are no instances of autocorrelation.

#### *Job Satisfaction And Job Performance Regression Analysis*

In accordance with the returned questionnaires, the variables were entered into the regression analysis in two stages. The five aspects used as control variables for the analysis were: gender, age, education level, length of service, and the independent variable. These were used to examine the influence on job performance which served as the dependent variable. The results are shown in Table 6.

In the first stage, the control variables were inserted to understand the impact of these variables on the job performance dependent variable. Model 1 (M1) was produced, with the F value being 6.289 which shows that the results were statistically significant ( $p < .001$ ). The R<sup>2</sup> value for M1 was 0.56, AdjR<sup>2</sup> was 0.47, and  $\Delta R^2$  increased by 0.56.

In the second stage of the analysis job satisfaction was included as an independent variable and Model 2 (M2) was produced. From this it can be seen that there is a clear positive link between job satisfaction and job performance, with the F value being 101.501 which shows that the results were statistically significant ( $p < .001$ ). The R<sup>2</sup> value for M2 was .543, AdjR<sup>2</sup> was .538, and  $\Delta R^2$  increased by .488. The regression  $\beta$  coefficient for job satisfaction was .719, meaning that the level of significance was reached ( $p < .001$ ). This result shows that employees perform better at work when they are more satisfied with their jobs.



Table 5. Collinearity Diagnosis As Part Of A Regression Model For Employee Health And Job Satisfaction

Model	Research Variable	Tolerance	VIF	Durbin-Watson
M1	Gender	0.913	1.095	1.708
	Age	0.301	3.325	
	Level of Education	0.916	1.092	
	Length of Service	0.307	3.258	
M2	Gender	0.868	1.097	1.743
	Age	0.295	3.329	
	Level of Education	0.910	1.094	
	Length of Service	0.299	3.317	
	Employee Health	0.550	1.039	

Table 6. Job Satisfaction And Job Performance Regression Analysis

	Dependent Variable: Job Performance	
	$\beta$ Coefficient (Model 1)	$\beta$ Coefficient (Model 2)
Control Variables		
Gender	-.047	-.069
Age	.064	.114
Level of Education	-.099	-.111
Length of Service	-.293	-.172
Independent Variable		
Job Satisfaction		.719***
F Value	6.289***	101.501***
R <sup>2</sup>	.056	.543
AdjR <sup>2</sup>	.047	.538
$\Delta R^2$	.056	.488

Note: \* refers to a significance level greater than .5 ( $p < .05$ ); \*\* refers to a significance level greater than .01 ( $p < .01$ ); \*\*\* refers to a significance level greater than .001 ( $p < .001$ )

Therefore, the hypothesis proposed by this study that job satisfaction has a noticeably positive impact on job performance is supported.

According to Table 7, the tolerance figures for Models 1 and 2 are both greater than 0.1. As the variance inflation factor (VIF) is also under the

standard value of 10, this shows that there are no repeated collinearity issues within the models. Checking for unique error terms was carried out using the Durbin-Watson (D-W) statistic. With all of the values achieved being between 1.000 and 2.000 (which is close to the value of 2), this shows that there are no instances of autocorrelation.

Table 7. Collinearity Diagnosis As Part Of A Rregression Model For Job Satisfaction And Job Performance

Model	Research Variable	Tolerance	VIF	Durbin-Watson
M1	Gender	0.913	1.095	1.823
	Age	0.301	3.325	
	Level of Education	0.916	1.092	
	Length of Service	0.307	3.258	
M2	Gender	0.912	1.096	1.865
	Age	0.300	3.330	
	Level of Education	0.915	1.093	
	Length of Service	0.304	3.288	
	Job Satisfaction	0.942	1.061	

## Conclusion and Suggestions

### *Conclusion*

This study used research design, the gathering of data, and the results of empirical analysis to examine the relationship between employee health, job satisfaction, and

job performance. The results of this empirical analysis are as follows:

Employee health has a noticeably positive impact on job performance. When employees are in good health, it helps to improve their efficiency and efficacy at work. It also gives them more originality, increases their concentration levels,

and improves their ability to adapt and respond to the environment in which they work. Overall, the healthier an employee is, the better their performance at work will be.

Employee health has a noticeably positive impact on job satisfaction. When an employee is in good health, it results in them having a more positive and proactive demeanor at work. It also increases their ability to shoulder their job's responsibilities, improves their attitude to work, makes them more willing to put in effort, and raises both commitment and loyalty to the organization. Job satisfaction has a noticeably positive impact on job performance. When an employee fits in better with an organization's culture behavior, they will in turn have a more positive attitude toward their work. As previous scholars identified that job satisfaction positively impacts job performance, this study once again demonstrates their contribution.

### Suggestions

When the concept of health capital is put into practice it can offer business value for an organization. This is because employee health is an important hidden factor which affects organizational performance. When managers are seeking or have

found ways to increase job performance within the workplace, valuing employee wellness is one of the plans and strategies which can be adopted to deal with production costs. Organizations which value a healthy workforce will influence the physical, mental, and spiritual development of their employees, as well as employees' acknowledgment of the significance and value of the job that they do. Any organization which provides their employees with support and rewards at suitable intervals can also receive the support and approval of their employees' families. Furthermore, aiding employees to improve their health and implementing measures which can improve their health also helps an organization with its human resource management. This includes reducing employee turnover, lowering employees' work-related stress, and earning increased profits for the company. For this reason, organizations should not only pay attention to job satisfaction and occupational burnout in their management practices, but also take employee health into consideration. Doing this will help them to achieve further optimal management results.

## References

- Almer, E. D., & Kaplan, S. E. (2002). The effects of flexible work arrangements on stress, burnout, and behavioral job outcomes in public accounting. *Behavioral Research in Accounting* 14, 1-34.
- Aghion, P., Howitt, P., & Murtin, F. (2010). The Relationship between Health and Growth: When Lucas Meets Nelson-Phelps. Bruegel Working Paper (2010/04).
- Beck, A. T., Brown, G., Steer, R. A., Eidelson, J. I., & Riskind, J. H. (1987). Differentiating anxiety and depression: A test of the cognitive content-specificity hypothesis. *Journal of Abnormal Psychology*, 96, 179-183.
- Brief, A. P. (1998). *Attitudes in and around organizations*. Thousand Oaks: Sage.
- Choo, F. (1986). Job stress, job performance and auditor personality characteristics. *A Journal of Practice & Theory* 5(2), 17-34.
- Erez, A., & Isen, A. M. (2002). The influence of positive affect on the components of expectancy motivation. *Journal of Applied Psychology*, 87, 1055-1067.
- Eagly, A. H., & Chaiken, S. (1993). *The psychology of attitudes*. Fort Worth, TX: Harcourt Brace Jovanovich.
- Edwards, B. D., & Bell, S. T. (2008). Relationships between facets of job satisfaction and task and contextual performance. *Applied Psychology an International Review*, 57(3), 441-465
- Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An introduction to theory and research*. 2 (pp. 596-692). Reading, Massachusetts: MA: Addison-Wesley.
- Fisher, R. T. (2001). Role stress, the Type A behavior pattern, and external auditor job satisfaction and performance. *Behavioral Research in Accounting*, 13, 143-170.
- Hettler, B. (1980). Wellness promotion on a university campus: Family and community health. *Journal of Health Promotion and Maintenance*, 3(1), 77-95.

- Ilies, R., & Judge, T.A. (2005). Goal regulation across time: The effects of feedback and affect. *Journal of Applied Psychology*, 90, 453-467.
- Judge, T. A., Thoresen, C. J., Bono, J. E., & Patton, G. K. (2001). The job satisfaction job performance relationship: A qualitative and quantitative review. *Psychological Bulletin*, 127, 376-407.
- Kalleberg, A. L. (1977). Work values and job rewards: A theory of job satisfaction. *American Sociological Review*, 42, 124-143.
- Longenecker, C. O., Yonker, R., & McGoldrick, L. (2009). The competitive performance benefits of managerial health: five key practices. *Development and Learning in Organizations*, 23(5), 19-21.
- Luthans, F. (1992). *Organizational behavior* (6th ed). New York: McGraw-Hill Inc.
- Mitchell, T. R., Hopper, H., Daniels, D., George-Falvy, J., & James, L. R. (1994). Predicting self-efficacy and performance during skill acquisition. *Journal of Applied Psychology*, 79, 506-517.
- Misener, T. R., Haddock, K. S., Gleaton, J. U., & Ajamieh, A. R. (1996). Toward an international measure of job satisfaction. *Nursing Research*, 45(2), 87-91.
- Myers, J. E., & Sweeney, T. J. (2008). The Indivisible Self: An evidence-based model of wellness. *Journal of Individual Psychology*, 86, 482-493.
- Maslach, C. (1982). Understanding burnout: Definitional issues in analyzing a complex phenomenon. In *Job Stress and Burnout: Research, Theory, and Intervention Perspectives*, edited by Paine, W. Beverly Hills, CA: Sage Publishers.
- Naylor, J. C., Pritchard, R. D., & Ilgen, D. R. (1980). *A theory of behavior in organizations*. New York: Academic Press.
- Porter, S. S., Claycomb, C., & Kraft, F. B. (2008). Sallsperson wellness lifestyle: A measurement perspective. *Journal of Personal Selling & Sales Management*, 28(1), 53-66.

- Rorter, L. W, Steers, R. M., Mowday, R. T., & Boulian, R. V. (1974). Organizational commitment, job satisfaction, and turnover among psychiatric technicians. *Journal of Applied Psychology*, 59(5), 603-609.
- Spector, P. E. (1997). *Job satisfaction: Application, assessment, causes and consequences*, Thousand Oaks, CA: Sage.
- Tariq, M. A., & Ihtsham, U. H. P. (2014). Health human capital and economic development. *World Applied Sciences Journal*, 32(6), 1015-1023.
- Taris, T. W. (2006). Is there a relationship between burnout and objective performance. A critical review of 16 studies. *Work & Stress*, 20, 316-334.
- Van Dyne, L., Graham, J. W., & Dienesch, R. M. (1994). Organizational citizenship behavior: Construct redefinition measurement, and validation. *Academy of Management Journal*, 47, 765-802.
- Vroom, V. H. (1964). *Work and motivation*. New York: Wiley.
- Wright, T. A., Cropanzano, R., Denney, P. J., & Moline, G. L. (2002). When a happy worker is a productive worker: A preliminary examination of three models. *Canadian Journal of Behavioral Science*, 34, 146-150.

