



IBIMA

Publishing

mobile

Communications of the IBIMA

*Vol. 2011 (2011), Article ID
444770, 277 minipages.*

DOI:10.5171/2011.444770

www.ibimapublishing.com

Copyright © 2011 Rohana Ngah and Abdul Razak Ibrahim. This is an open access article distributed under the Creative Commons Attribution License unported 3.0, which permits unrestricted use, distribution, and reproduction in any medium, provided that original work is properly cited.

**The Influence of
Intellectual Capital on
Knowledge Sharing:
Small and Medium
Enterprises' Perspective**

Authors

**Rohana Ngah¹ and
Abdul Razak Ibrahim²**

¹Malaysian Academy of
Entrepreneurship, Universiti
Teknologi MARA, Malaysia

²Faculty of Business and
Accountancy, Universiti Malaya,
Kuala Lumpur, Malaysia

Abstract

Intellectual capital of the organization would determine the success of the organization itself if it is

well capitalized.

Knowledge sharing is a platform for the organization to further enhance productivity.

Furthermore, knowledge

sharing is always linked to small and medium enterprises (SMEs) due to their advantage of being small. Convenience sampling was used for

manufacturing and services industries of SMEs. Data was tested using Structural Equation Modeling (SEM) to investigate the impact of intellectual capital on

knowledge sharing.

Measurement model and structural model were developed. Findings show that relational capital has a positive impact on

knowledge sharing while human capital and structural capital has negative impact on knowledge sharing. All the intellectual capital

dimensions contributed a significant impact on knowledge sharing. It is important for SMEs to invest and focus on knowledge sharing activity

as it would create a platform for innovation, thus enhances the performance.

Keywords: Human capital, structural capital, relational capital, knowledge sharing, small and medium enterprises

Introduction

Knowledge is vital for most of the organizations nowadays, hence, organization must take

a big step to change. The first step to change from a traditional company into a knowledge company is to be aware of the knowledge of the organization, known

as intellectual capital (IC)
(Montequin et al., 2006).

Recently, the concept of
intellectual capital has been
identified as a key resource
and driver of organizational

performance and value creation (Marr et al., 2004). Organizations perform well and create value when they implement strategies that respond to market

opportunities by exploiting their internal resources and capabilities (Penrose, 1959; Andrews, 1971 as cited by Marr et al., 2004).

Knowledge sharing has been highly regarded as an important process in enhancing organizational performance as emphasized by Nonaka and

Takeuchi (1995) on their SECI knowledge circle. However, knowledge sharing is not easy to be implemented. Sharing knowledge requires

willingness, trust,
conducive and suitable
environment in order for
the effective knowledge
sharing to take place. This
study is to investigate the

impact of intellectual
capital dimensions, namely
human capital, structural
capital and relational
capital on knowledge

sharing in the small and medium enterprises.

This paper is organized into four sections: Section 1 will discuss on intellectual

capital and knowledge sharing. Section 2 will discuss the research design. Section 3 is the findings and Section 4 will conclude.

Literature Review

Intellectual capital can be located in its people, its structures and its customers (Stewart, 1997).

Intellectual capital is defined as the organizational resources which comprise human capital, structural capital and relational capital

(Bontis, 1998). Edvinson (1997) define intellectual capital as the possession of knowledge, applied experience, organizational technology, customer

relationships and professional skills that provide Skandia with a competitive edge in the market. Roos and Roos (1997) define intellectual

capital as the sum of the hidden assets of the company not fully captured on the balanced sheet and thus, it includes both what is in the heads of the

organizational members
and what is left in the
company when they leave.
Bontis (1998) define
intellectual capital as the
pursuit of effective use of

knowledge (the finished product) as opposed to information (the raw material). Stewart (1997) explains that human capital is the accumulated

capabilities of individual
responsible for providing
customer solutions.

Structural capital refers to
the capabilities of the
organization to meet

market requirements and relational capital refers to the extent and intensity of the organizations' relationships with customers. The three types

of capital are interrelated
(Johnson, 1999).

Human Capital

The employees in the organization made up the human capital of the organization (Bontis et al.,

2000). Employees are the most important resources in the organization (Chen et al., 2004). Known as human capital, employees' skills, commitment, capabilities,

talents and knowledge are organization's intangible assets that can be turned into its competitive advantage (Yang et al., 2007). The human capital

of one organization to another organization is totally different and that makes it difficult to imitate, difficult to copy, rare and non-replaceable.

Knowledge must be managed effectively in people and organizations to ensure that wealth creating capacity can be maintained (Bohn, 1994 as cited in

Martinez-Torres, 2006).
Human capital represents
the individual tacit
knowledge embedded in
the mind of the employees.
It can be defined as

a combination of employee's competence, attitude and creativity (Jin Chen et al., 2004).

According to Mayo (2001), human capital can be

divided into three dimensions: capability and potential, motivation and commitment and innovation and learning.

For SMEs, the entrepreneur and the inventor are pure human capital (Hisrich et al, 2008). An SME is more than the owner itself, it is about the people who make

things going and make profit for the organization. The most important in human capital is about what people can do, individually and

collectively (Brennan and
Connell, 2000).

Structural Capital

Intellectual capital by itself is of little value without the leveraging effect of the firm's supporting structural

capital resource (Stewart, 1997). The structural capital comprises systems, structure, corporate culture, the organizational process efficiency, data

bases, information and production technology (Bontis, 1998). Structural capital is the embodiment, empowerment, and supportive infrastructure of

human capital. It provides the environment that encourages individuals to invest their human capital to create and leverage its knowledge (Cohen and

Kaimenakis, 2007). The structural capital encompasses all forms of knowledge deposit from human capital which is not supported by employees

such as organizational routines, strategies, process handbooks and databases and many more (Boisot, 2002; Walsh and Ungson, 1991; Pablos, 2007). It also

encompasses the organizational capacity, including the physical systems used to transmit and store intellectual material (Edvinsson and

Malone, 1997). This component of intellectual capital is the firm's infrastructure that develops to commercialize their intellectual capital

(Edvinsson and Sullivan, 1996). Unlike human capital, structural capital can be formally captured and embedded (Tan et al., 2008). Structural capital

provides a platform for people to be creative (Stewart, 2000). While firms do not own human capital (Cohen and Kaimenakis, 2007),

structural capital belongs to the organization. It can be reproduced and shared. A good structural capital will provide a good environment for rapid

knowledge sharing,
collective knowledge
growth, shortened lead
times and more productive
people (Stewart, 2000). In
fact, Stewart (2000) also

refers to structural capital as knowledge management whereby the knowledge of an organization is flowing in this capital. The system in the structural capital is

the knowledge of the company which is independent of people (Brennan and Connell, 2000).

Relational Capital

Relational capital embraces all the relations the firm has established with its stakeholder groups such as

customers, suppliers,
community, and
government (Bontis, 1998;
Allee, 2000). Most of
references refer to the third
part of intellectual capital

as customer capital as those authors are relating it to the market orientation and customer orientation.

However, for the purpose of this study, relational

capital will be adopted.

Many nations are improving economically in today's knowledge-based economy by promoting and supporting SMEs with

necessary infrastructure (Cowey, 2003 as in Wickramansinghe and Sharma, 2005). Stewart (2000) points out that the relationship with these

external stakeholders is to turn it into money.

The information from the market is turned into market orientation while

information of customer is referred to as customer orientation. Customer capital is closely related to market orientation (Cohen and Kaimenakis, 2007).

Market orientation is a set of behaviors and processes (Kohli and Jaworski, 1990) or an aspect of culture (Narver and Slater, 1990) to create a superior

customer value. Market orientation is also an implementation of marketing concept via market intelligence generation, intelligence,

dissemination and responsiveness; that is implementing a marketing strategy (Kohli and Jaworski, 1990). Han et al (1998) emphasize that

market orientation is to coordinate the customer's needs by obtaining and using customer's information, competitor's capabilities and provision

of other significant market agents and authorities (Keskin, 2006; Deshpande and Webster, 1989). This integrated effort on the part of the employees and

across departments in an organization in turn gives high or superior performance to an organization (Kohli and Jaworski, 1990). Customer

orientation is defined as an integral component of a general, underlying organizational culture. Hence, attention to the information about

customers' needs should be considered alongside the basic set of values and beliefs that are likely to reinforce such as customer focus and permeate the

firm (Appiah-Adu and Singh, 1998). They emphasize, that in SMEs, customer orientation is vital determinant of success because of its advantages of

close proximity to their customers. Deshpande and Webster (1993) found the positive relationship between customer orientation and

organizational
performance.

Specifically, relational
capital fosters a
knowledge-producing

behavior – providing a source of ideas for change and improvement by market information processing and marketing strategies (Keskin, 2006).

However, this knowledge has little benefit if not appreciated and implemented for firm innovation. Contemporary classical schemes have

divided intellectual capital into the categories of external (customer-related) capital, internal (structural) capital and human capital (Sveiby, 1997; Roos et al.,

1998; Stewart, 1997; Edvinsson and Malone, 1997; Petty and Guthrie, 2000). In conclusion, it appears that most of the definitions of intellectual

capital listed above include human capital, structural capital and relational capital.

The three IC components (human capital, structural capital and relational capital) are closely intertwined and interdependent

(Subramaniam and Youndt, 2005; Youndt, Subramaniam and Snell, 2004). The IC must have human capital, structural capital and relational

capital in order for the organization to achieve its goal. IC provides the best possible value to organizations through the combination, utilization,

interaction, alignment and
balancing of the three types
of intellectual capital as
well as managing the
knowledge flow between

the three components
(Quink, 2008).

Tacit knowledge is a
tremendous resource for all
activities especially for

innovation (Leonard and Sensiper, 1998). Tacit knowledge is what embedded in the mind (Choi and Lee, 2003), can be expressed through

ability applications; is transferred in the form of learning by doing and learning by watching. Knowledge sharing is basically the act of making

knowledge available to others within the organization (Ipe, 2003). Knowledge sharing can also be explained as a set of behaviors that involve the

exchange of information or assistance to others and it is separate from information sharing (Connelly and Kelloway, 2003). Knowledge sharing

enables managers to keep the individual learning flow throughout the company and integrate it for practical application.

From the perspective of the flow approach of intellectual capital, knowledge resources are flowing through its people, structure and relationship

to create value. The flow process needs a mechanism to represent the basic operations of knowledge. In this study, knowledge sharing is identified as

knowledge processes for intellectual capital. This relationship can be found in the input-process-output model by Hackerman and Moris (1978). Lee and Choi

(2003) demonstrate further this model when they applied seven enablers which they called knowledge enablers to interconnect knowledge

management factors. The human interaction is limited to t-shaped skills rather than the social interaction among the people.

Knowledge is important in intellectual capital that needs to produce higher-valued asset. Intellectual capital is tacit – and tacit knowledge cannot be sold

no matter how much someone is willing to fork over (Stewart, 2000; pp.74). People develop and use tacit knowledge before they formalize or codify it.

But Awad and Ghaziri (2004) stress that knowledge management is not intellectual capital as defined clearly by Wiig (1997):

– Intellectual capital focuses on building and governing intellectual assets from strategic and enterprise governance perspectives

– Knowledge management has tactical and operational perspectives in facilitating and managing knowledge.

Widen-Wuff and Suomi
(2003) found that
intellectual capital needs a
process mechanism which
is knowledge sharing to
give an impact on business

performance as in the research conducted in Finland. Organizational slack, human capital and ICT infrastructure are the base of the process which

then support learning
organization metaphor,
intellectual capital and
knowledge sharing in
process which eventually

lead to knowledge sharing
and business success.

Ruta and Macchitella
(2008) highlight that three
dimensions of intellectual

capital can influence the motivation of individuals to share their knowledge with other members within the organization. Koenig (1998) stresses that in

order for knowledge to be circulated evenly in the organization, it must be supported by other factors such as culture, trust, knowledge behavior and

human capital and
structural capital of
processes, resources,
technology and metric.

Research Design and Methodology

Hypothesis Development

This paper examines the impact of intellectual capital on knowledge sharing. The intellectual capital is represented by human capital, structural

capital and relational
capital which would be
tested against knowledge
sharing.

Employees are the main element in the knowledge sharing activity. When people get together and involve in knowledge-based discussion, they would

share their personal knowledge with their colleagues. The knowledge regardless of its nature, tacit, explicit, formal or informal must be circulated

in order for the knowledge to be beneficial to the organization. This knowledge flow would increase the value of the existing knowledge as

expanded knowledge becomes valuable and meaningful. The structural capital is not only a mechanism to take advantage of the

information and
knowledge, but also a
mechanism to capture,
store, retrieve and
communicate the

knowledge and information
(Koenig, 1984).

The knowledge either tacit
or explicit which is
acquired and gathered

through the interaction with customers, suppliers or any outside party would help the organization to generate, acquire and restore its knowledge asset.

Tacit knowledge is the key element of knowledge sharing, and the knower must be willing to share the knowledge. Factors such as motivation of the sender

and recipient (Huber, 2001), reward and benefit of sharing (Gupta and Govindarajan, 2000, Kaiser and Miles, 2001, Dyer and Nobeoka, 2000), technical

ease of sharing (Decarolis and Deeds, 1999) the utilization of shared knowledge (Cohen and Levinthal, 1990) and the characteristics of the

knowledge (Gupta and Govindarajan, 2000) are among others important to facilitate the movement of knowledge within and between organizations.

Human capital has indirect impact on performance and has impact on performance through structural capital and relational capital

(Bontis et al , 2000; Chen et al, 2004).

- **H1:** Higher levels of Structural Capital and Relational Capital lead to

higher levels of
Knowledge Sharing.

- **H2:** Human Capital has positive impact on Relational Capital.

- **H3:** Human Capital has positive impact on Structural Capital.

- **H4:** Relational capital has a positive impact on Knowledge Sharing.

Based on the literature review and hypotheses

developed, a framework that guides the study has been developed as in Figure 1.2.

Figure 1.2 Proposed Framework

Please see Figure 1.2 in full PDF version

Data and Measures

The aim of this study is to evaluate the effects of intellectual capital elements on knowledge

sharing. Intellectual capital was measured in accordance to Bontis et al (1998), Chen et al (2005), Cohen and Kaimenakis (2007), Narver and Slater

(1990) and Deshpande et al (1993). Knowledge sharing was measured using items from Haldin-Herrgard (2000), Bock and Kim (2002), Ipe (2003), Husted

et al (2005), Chieh-Peng Lin (2007), Calatone et al (2002), Liebowitz(1999), Choi and Lee (2002). All items were measured on a seven point Likert-type

scale where 1 = strong disagree and 7 = strongly agree.

The sample was drawn from Small and Medium

enterprises (SMEs) in Malaysia. The list of SMEs of manufacturing was acquired from Small and Medium Enterprises Corporation (SMIDEC) that

administer the
manufacturing SMEs in
Malaysia. 1000
questionnaires had been
distributed by mail. Two
weeks after distribution, a

phone call was made as a reminder. A total of 336 questionnaires are useable which indicated 34% which is considered an effective response rate. This

response rate is similar to other surveys in Malaysia, which tend to obtain a response of between 15-25 per cent (Sarachek and Aziz, 1983; Rozhan, 1991).

Results and Discussion

Table 1.2 shows the respondents' profile based on the organization. Most of respondents are from

manufacturing industry
which is the biggest
industry player in Malaysia
SMEs. A total of 58.2% of
SMEs are in partnership
while 29.7% have been

operating more than 10 years. Based on the number of employees and annual turnover, 55.6% and 64.4% of respondents are in small enterprises respectively.

Table 1.2 Respondent Organization Profiles

**Please see Table 1.2 in
full PDF version**

Table 1.3 shows the respondent profile of the individual which is based on the current position, education level, previous working experience, years

of working experience and area of expertise. Most of respondents are owners (25.3%) followed by executives (23.2%) and managers (22.3%). Most of

them are degree holders
(42.3%) who have previous
working experience
(76.8%). 41.7% have more
than 5 years of working

experience in business
areas (17.3%).

Table 1.3 Respondents Individual Profile

**Please see Table 1.3 in
full PDF version**

Reliability Test

The reliability of an instrument refers to its ability to produce consistent and stable

measurements. Kumar (1996) explains that reliability can be seen from two sides: reliability (the extent of accuracy) and unreliability (the extent of

inaccuracy). The most common reliability coefficient is the Cronbach's alpha which estimates internal consistency by determining how all items

on a test relate to all other items and to the total test - internal coherence of data. The reliability is expressed as a coefficient between 0 and 1.00. The higher the

coefficient, the more reliable is the test. The result of study showed that Cronbach's alpha reliability coefficient for human capital is 0.869, structural

capital is 0.903, relational capital is 0.898, knowledge sharing of knowledge value is 0.904 and social network is 0.847 indicating that this instrument is a reliable

measure. A measure should have a Cronbach's alpha of at least 0.6 or 0.7 and preferably closer to 0.9 to be considered useful (Aron and Aron, 2002; Sekaran,

2002). Table 1.4 lists detailed scores of Cronbach's coefficient alpha. Since all the Cronbach's alpha values are over the critical point of 0.7

showing that the survey's
reliability is accepted.

Table 1.4 Reliability Test Results

Please see Table 1.4 in full PDF version

Table 1.5 shows the result of fit for each measurement. The Normed χ^2 ranges from 2.079 to 2.793, all below the recommended threshold of

3.0; (Hair et al. 2006)).

RMSEA values (from 0.057 – 0.077) are below the

recommended cut-of-points of 0.08 (Hair et al.2006).

The values of GFI (from

0.948 – 0.988), CFI (from 0.072 – 0.996) and TLI (from 0.961 – 0.991) are all above the recommended threshold of 0.90 (Hair et al. 2006). The intellectual

capital(IC) is made up of three constructs namely; human capital (HC), structural capital (SC) and relational capital (RC). These results show that the

models under
consideration exhibit good
fits.

Table 1.5 Fit Results for Measurement Models after Instrument Validation

**Please see Table 1.5 in
full PDF version**

In addition, Table 1.6 presents the summary of the measurement model showing the values for the standard regression weights ranging from 0.512

to 0.908, all above the 0.5 lower level limit recommended by Hair et al. (2006). The t-values (critical ratios) range from 13.013 to 25.902, all

greater than 2 and significantly with $p = 0.000$ (Hair et al. 2006). The construct reliability, ranges from 0.81 to 0.94, higher than the recommended

value of 0.7 by Hair et al. (2006). Variance extracted is from 0.55 to 0.74. The lower side of the variance extracted is just above the threshold of 0.5

recommended by Hair et al.
(2006).

Table 1.6 Summary of Other Results of the Measurement Models

**Please see Table 1.6 in
full PDF version**

Figure 1.3 Structural Model

Please see Figure 1.3 in full PDF version

The Normed χ^2 was 1.99, CFI was 0.944, TLI was 0.939 while RMSEA was 0.055 respectively. The Normed χ^2 meets the threshold requirement of

less than 3 while CFI and TLI values are above 0.9 thresholds. RMSEA shows a good model fit. All threshold points are according to Hair et al.

(2006). The standardized coefficient of the effect of relational capital on knowledge sharing provides support to hypothesis H4 with path

coefficient of 0.673, t-value 11.853 and significant at $p < 0.05$. The path coefficient of the effect of human capital and relational capital is not significant at

0.053 ($t= 0.628$) while the path coefficient of human capital to structural capital is 0.916 (11.400). The path coefficient of structural capital to relational capital

is 0.925 ($t= 9.454$) and significant at $p<0.05$. According to Chin (1998), only path coefficient of more than 3 is considered meaningful. Hypothesis H2

is not supported while Hypothesis H3 is supported. Jin Chen (2002) and Bontis et al (2002) found that even though human capital is important,

it does not have direct relationship to dependent variable. It has indirect relationship with other capital such as structural capital and relational

capital. Nevertheless, as IC, the human capital, structural capital and relational capital have 86% variance explained in knowledge sharing. This

finding is similar to previous studies done by Lee and Choi (2003), Yang (2005), Cheng et al.,(2008), Widen-Wuff and Suomi (2003), Darroch (2005),

Nahapiet and Ghosal
(1998), Gold et al. (2001)
and Lee and Choi (2003).

Conclusion

Intellectual capital can play a critical role in forming an effective platform for knowledge sharing. The

main idea is to observe the practices among SMEs in identifying their organizational resources. The organizational resources are well

established in every organization and the issue is whether the internal factors (human capital and structural capital) compliment with its

external factor
(relationship to outsiders)
in tapping the business
opportunities. This
framework offers another
insights for SMEs to re-

value their strengths and weaknesses and utilizing their routine activity of knowledge sharing for productivity.

The finding shows that the skill, knowledge and capability of employees do not contribute to the relationship of customers and other parties. SMEs

should focus on this issue to connect its employees to the third parties which are very important for the business future. Relational capital plays a vital role in

knowledge sharing
compared to other
dimensions of intellectual
capital. The information
and knowledge acquired
and gathered from

customers, suppliers and third parties are well shared which is very important for the organization to be ahead of competition and involve in

innovation. However,
human capital and
structural capital should be
addressed accordingly as
they are the internal

resources of the
organization.

SMEs have a lot of
advantages, being small in
terms of size allows SMEs

to forge strong bond among employees, developing close relationship with customers, creating opportunity to share knowledge with every

employee and flexibility in any environment or situation. Through this framework, SMEs would be able to re-set their strategies especially in

innovation to excel in competition. By embarking on knowledge, they should be better able to understand the needs and wants of the marketplace.

This study offers an insight on how SMEs could capitalize on its knowledge which is embedded in its organization structure, relationship and people,

through its common practice which is knowledge sharing, in order to be innovative. In this regard, SMEs should establish a knowledge

culture. Rewards and incentives need to be put in place to motivate knowledge workers to share their knowledge and

thus encourage creativity
and innovation.

References

Appiah-Adu, K. & Singh, S.
(1998). "Customer
Orientation and
Performance: A Study of

SMEs Management
Decision,” 6 (6) 385-394.

Aron, A. & Aron, E. N.
(2002). Statistics for the
Behavioral and Social

Sciences: A Brief Course,
(2nd ed.). New Jersey:
Upper Saddle River.

Bock, X. & Kim, X. (2002).
“Breaking the Myths of

Rewards. An Exploratory
Study of Attitudes about
Knowledge Sharing,”
*Information Resources
Management Journal*, 15 (2)
14- 21.

Boisot, M. (2002). 'The Creation and Sharing of Knowledge,' in Choo, C.W. and Bontis, N. (Eds). *The Strategic Management of Intellectual Capital and*

Organizational Learning,
Oxford University Press,
Oxford.

Bond, M. H. & Yang, K.-S.
(1982). "Ethnic Affirmation

Versus Cross-Cultural
Accommodation: The
Variable Impact of
Questionnaire Language on
Chinese Bilinguals in Hong
Kong," *Journal of Cross-*

Culture Psychology. 13 (X)
169–185.

Bontis, N. (1998).
“Intellectual Capital: An
Exploratory Study that

Develops Measures and Models," *Management Decision*, 36 (2) 63-76.

Bontis, N., Keow, W. C. C. & Richardson, S. (2000).

“Intellectual Capital and
Business Performance in
Malaysian Industries,”
*Journal of Intellectual
Capital*, 1(1) 85-100.

Brennan, N. & Cornel, B.
(2000). "Intellectual
Capital: Current Issues and
Policy Implications,"
Journal of Intellectual

Capital, 1 (3) 206-240.

Calantone, R. J. & Cavusgil,
S. T. & Zhao, Y. (2002).

“Learning Orientation, Firm
Innovation Capability and

Firm

Performance," *Industrial
Marketing Management*, 31
(X) 515-524.

Chen, J., Zhu, Z. & Xie, H. H.
(2004). 'Measuring
Intellectual Capital: A New
Model Innovativeness and
Performance,' *Journal of*

Business Research, 60 (X)
566-575.

Chen, M.-C., Cheng, S.-J. &
Hwang, Y. (2005). "An
Empirical Investigation of

the Relationship between
Intellectual Capital and
Firms' Market Value and
Financial Performance,"
*Journal of Intellectual
Capital*, 6(2) 159- 177.

Chen, S., Duan, Y. Edwards,
J. S. & Lehaney, B. (2006).
“Toward Understanding
Inter-Organizational
Knowledge Transfer Needs
in SMEs: Insight from a UK

Investigation," *Journal of Knowledge Management*, 10 (3) 6-23.

Chin, W. W. (1998). "Issues and Opinion on Structural

Equation Modeling," *MIS Quarterly*. 22(1) 7-17.

Choi, B. & Lee, H. (2003).
"An Empirical Investigation
of KM Styles and their

Effect on Corporate
Performance," *Information
and Management*, 40 (X)
403-417.

Cohen, S. & Kaimenakis, N.
(2007). "Intellectual Capital
and Corporate Performance
in Knowledge-Intensive
SMEs," *The Learning*

Organization, 14 (3) 241-262.

Cohen, W. M. & Levinthal, D. A. (1990). "Absorptive Capacity; A New

Perspective on Learning
and Innovation,”
*Administrative Science
Quarterly*, 35 (X) 128-152.

Darroch, J. (2005).
“Knowledge Management,
Innovation and Firm
Performance,” *Journal of
Knowledge Management*,
9(3) 101-115.

Decarolis, D. M. & Deeds, D. L. (1999). "The Impact of Stocks and Flows of Organizational Knowledge on Firm Performance: An Empirical Investigation of

Biotechnology Industry,”
*Strategic Management
Journal*, 20 (X) 953-968.

De Pablos, P. O. (2004).
“Measuring and Reporting

Structural Capital: Lessons
from European Learning
Firms," *Journal of
Intellectual Capital*, 5 (4)
629-647.

Edvinsson, L. & Malone, M.
(1997). 'Intellectual
Capital,' *Harper Business*,
New York.

Edvinsson, L. & Sullivan, P.
(1996). "Developing Model
for Managing Intellectual
Capital," *European
Management Journal*, 14 (4)
356-364.

Gold, H. A., Malhotra, A. &
Segars, A. H. (2001).

“Knowledge Management:
An Organizational
Capabilities Perspective,”
Journal of Management

Information Systems, 18 (1)
185-214.

Gupta, A. K. & Govindarajan,
V. (2000). "Knowledge
Management's Social

Dimension: Lessons from
Nucor Steel," *MIT Sloan
Management Review* 42 (1)
71-80.

Guthrie, J. & Petty, R.
(2000). "Intellectual
Capital: Australian Annual
Reporting Practices,"
*Journal of Intellectual
Capital*, 1(3) 241-251.

Hackerman, J. R. & Morris,
C. G. (1978). "Group Task,
Group Interaction Process
and Group Performance
Effectiveness: A Review and
Proposed Integration¹," In

L. Berkowitz (Ed), Group
Process. New York;
Academic Press, 1-15.

Hair, J. F., Jr., Black, W. C.,
Babin, B. J., Anderson, R. E.

& Tatham, R. I. (2006).
Multivariate Data Analysis,
6th Edition, *Pearson
Education Inc.*, Upper
Saddle River, NJ.

Hisrich, R. D. & Peters, M. P.
(2008). 'Entrepreneurship,'
McGraw-Hill. Singapore.

Huber, G. P. (1991).
"Organizational Learning:

The Contributing
Knowledge Processes and
Literature," *Organization
Science*, 2 (1) 88-115.

Husted, K. & Michailova, S.
(2005). 'Knowledge Sharing
and Organizational
Performance: The Role of
Extrinsic and Intrinsic
Motives,' 8th International

Human Resource
Management Conference,
Cairns, Australia,
Copenhagen Business
School.

Ipe, M. (2003). "Knowledge Sharing on Organizations: A Conceptual Framework," *Human Resource Development Review*, 2 (4) 337-358.

Keskin, H. (2006). "Market Orientation, Learning Orientation, Innovation Capabilities in SMEs: An Extended Model," *European Journal of Innovation*

Management, 9 (4) 396-417.

Koenig, M. E. D. (1998).

“From Intellectual Capital to Knowledge Management:

What are they Talking about?" *INSPEL*, 32 (4) 222-233.

Kohli, A. K. & Jaworski, B. J. (1990). "Market

Orientation: The Construct,
Research Propositions, and
Managerial Implications,”
Journal of Marketing, 54
(2) 1-18.

Lee, H. & Choi, B. (2003).
“Knowledge Management
Enablers, Processes and
Organizational
Performance: An
Integrative View and

Empirical Examination,"
*Journal of Management
Information Systems*. 20 (1)
179-228.

Liebowitz, J. & Chen, Y.
(2001). "Developing
Knowledge-Sharing
Proficiencies," *Knowledge
Management Review*, 3 (6)
12-15.

Lin, C.-P. (2007). "To Share or Not to Share: Modeling Tacit Knowledge Sharing, its Mediators and Antecedents," *Journal of*

Business Ethics, 70 (X) 411-418.

Marr, B., Schiuma, G. & Neely, A. (2004). "The Dynamics of Value

Creation: Mapping your
Intellectual Performance
Drivers," *Journal of
Intellectual Capital*, 5 (2)
312-325.

Martinez-Torres, M. R.
(2006). "A Procedure to
Design a Structural and
Measurement Model of
Intellectual Capital: An
Exploratory Study,"

*Information and
Management, 43 (X) 617-
626.*

Narver, J. C. & Slater, S. F.
(1990). "The Effect of a

Market Orientation on
Business Profitability," *The
Journal of Marketing*, 54 (4)
20-35.

Quink, U. (2008). “An Exploration of Knowledge Management and Intellectual Capital in Non-Profit Organization Context,” *Master Thesis*.

University of Queensland.
Australia.

Roos, J., Roos, G. &
Edvinsson, L. (1998).
“Intellectual Capital:

Navigating the New
Business Landscape," *New
York University Press*, New
York.

Rozhan, O. (1998). 'Human Resource Management Practice of Service Organizations: Evidence from Selected Malaysian Firms,' *Journal of Asia-*

Pacific Business, 2 (X) 65-81.

Ruta, C. D. & Macchitella, U. (2008). "Fostering Intellectual Capital through

Communication
Technologies: An Analysis
of Knowledge Sharing
Determinants,”
International Journal of

*Learning and Intellectual
Capital, 5 (2) 123-152.*

Sarachek, B. & Aziz, A. H.
(1983). 'A Survey of
Malaysian Personnel

Practices and Problems,'
Journal Pengurusan, 2 (X)
61-79.

Sekaran, U. (2003).
Research Methods for

Business: A Skill Building
Approach (4th Eds.) *John
Wiley and Sons, NY.*

Stewart, T. A. (2000).
'Intellectual Capital: The

New Wealth of
Organizations,' London,
Nicholas Brealey Publishing.

Subramaniam, M. & Youndt,
M. A. (2005). "The Influence

of Intellectual Capital on
the Types of Innovative
Capabilities," *Academy of
Management Journal*, 48 (3)
450-463.

Sveiby, K. E. & Simons, R.
(2002). "Collaborate
Climate and Effectiveness
of Knowledge Work – An
Empirical Study," *Journal of
Knowledge Management*, 6

(5) 420-433.

Tan, H. P., Plowman, D. &
Hancock, P. (2008). "The
Evolving Research on
Intellectual Capital," *Journal*

of Intellectual Capital, 9(4)
585-608.

Walsh, J. P. & Ungson, G. R.
(1991). "Organizational
Memory," *Academy of*

Management Review, 16 (X)
57-91.

Wickramansinghe, N. &
Sharma, S. K. (2005). "Key
Factors that Hinder SMEs in

Succeeding in Today's
Knowledge-Based
Economy," *International
Journal of Management and
Enterprise Development*, 2
(2) 141-157.

Widen-Wulff, G. & Suomi, R.
(2003). "Building a
Knowledge Sharing
Company – Evidence from
the Finnish Insurance
Industry," Proceedings of

the 36th Hawaii
International Conference
on System Sciences.

Youndt, M. A.,
Subramaniam, M. & Snell, S.

A. (2004). "Intellectual
Capital Profiles: An
Examination of
Investments and Returns,"
Journal of Management

Studies, 41 (2) 335-361.