
Structural capital: Concept and its Application in Service Sector of India with Special Reference to Banking and Reality Sector

ARPITA KAUL

Sri Venkateswara College, University of Delhi

Intellectual capital constitutes Human Capital, Structural Capital & Relational Capital. Structural capital is the supportive infrastructure, processes and databases of the organization that enable the human capital to function (Maddocks, 2002). Because of its diverse components, structural capital can be classified further into organization, process and innovation capital. Organizational capital includes the organization philosophy and systems for leveraging the organization's capability. Process capital includes the techniques, procedures, and programs that implement and enhance the delivery of goods and services. Innovation capital includes intellectual properties and intangible assets (Edvinsson, 1997).

Structural Capital includes culture, spirit of firms, copyrights, trademarks, patents, internal databases; management processes (Seetharaman et al., 2004). Many other authors like Abdel Aziz, Ahmad Sharabati, Shawqi Naji Jawad, Nick Bontis, Yusuf Topal, M. Kemalettin, Conkar Mustafa Saudah Sofian, Mike Tayles, Richard Pike, Mark A. Youndt and Scott A. Snell have used questionnaires to identify the factors of structural capital which were read and analyzed and incorporated in this study.

After an in depth analysis of literature related to the subject a questionnaire was formulated. This questionnaire was circulated amongst the middle management level of the service sector and then analyzed using PASW. The reliability test was conducted, descriptives were calculated, Levene's test and correlation was applied.

The author tries to find the relevant factors of structural capital for banking sector and reality sector. It was also analyzed if there is a difference in the private and public sectors banks with regard to structural capital. Also, the difference in structural capital in reality sector and banking sector was analyzed.

Key words: Culture, Process and Internal Database.

INTRODUCTION

Structural capital is the supportive infrastructure, processes and databases of the organization that enable human capital to function (Maddocks, 2002). Structural capital includes such traditional things as buildings, hardware, software, processes, patents, and trademarks. In addition, structural capital includes such things as the organization's image, organization information system, and proprietary databases. Because of its diverse components, structural capital can be classified further into organization, process and innovation capital. Organizational capital includes the organization's philosophy and systems for leveraging the organization's capability. Process capital includes the techniques, procedures, and programs that implement and enhance the delivery of goods and services. Innovation capital includes intellectual properties and intangible assets (Edvinsson, 1997). Intellectual properties are protected commercial rights such as copyrights and trademarks. Intangible assets are all of the other talents and theory by which an organization is run.

LITERATURE REVIEW

Many researches have been conducted on the structural capital and have identified the various factors of structural capital; the effect of structural

capital on profitability, productivity etc. but this subject is relatively new for India. Thus, this was the motivation behind this paper. In order to understand the Indian perspective on the topic, literature on the subject was reviewed.

RESEARCH OBJECTIVES

- To identify the key factors of structural capital in service sector of India.
- To study the key characteristics and interrelationships among them that define structural capital concept.
- To do a comparative analysis of structural capital between private and public banks.
- To do a comparative analysis of structural capital in banking and reality sector.

HYPOTHESES

Accordingly, the following hypotheses were framed for the study:

HO1: There is no significant difference between different factors that contribute towards structural capital process in private and public sector banks.

HA1: There is significant difference between different factors that contribute towards structural capital process in private and public sector banks.

HO2: There is no relationship between different factors of structural capital concept.

HA2: There is relationship between factors of structural capital concept.

HO3: There is no significant difference between different factors that contribute towards structural capital process in banking and reality sector.

HA3: There is significant difference between different factors that contribute towards structural capital process in banking and reality sector.

RESEARCH METHODOLOGY

It is not sufficient to rely only on the human capital but also emphasize on structural capital. Twelve of its characteristics were identified as follows:

System: This factor concentrates on whether organizations have systems and programs in place, like recruitment, succession training, and reward systems. A system refers to a detailed, step by step approach or process followed consistently throughout the organization all the time.

Research and Development: This factor assesses whether organizations invest in research and development. Research and development means searching for better methods, product- ideas and developing them into products, processes etc.

Intellectual Property Rights: This factor emphasizes if organizations invest in copyrights, trademarks etc.

Information System: It depicts whether organizations have strong information systems or not. Information system is a system by which information can be stored, retrieved and used.

Culture: Depicts if companies have positive culture. Culture refers to shared beliefs that people have about the organization.

Learning Organization: Assesses if organizations believe in learning from each other and knowledge sharing. A learning organization has a belief that the organization should never stop learning; it is an ongoing process that helps the organization improve and get better and better.

New Ideas: If companies promote suggestions from employees and develop new and better ideas and products. It means that there is an effort to promote new ideas.

Documentation: Whether companies documents

their knowledge. Everything should be documented so that it acts as ready made reference for future.

Strategy: Emphasizes if companies have a strategy in place. A strategy is a plan of action which is formulated keeping in mind the environment both internal and external, customers, marketing mix etc.

Communication: Are there open communication channels. Communication is significant for an organization, if there is lack of proper communication then the organization can never achieve its objectives.

Authority Responsibility: This factor focuses on if the job responsibility and roles are clearly defined. Does the company have a well defined hierarchy?

Participation: Means promoting democratic set up. It means all level employees are allowed to participate in the decision making.

Data Collection

The research design of the study categorizes service sector into five major areas i.e., banking, hotels, telecommunication, and realty and information technology. The questionnaire was distributed to 300 respondents personally and via mail, out of which 243 were returned hence the response rate was 81%. Random sampling method was used to collect the data. However, this paper concentrates on

- 39 responses each from public and private sector banks.
- 46 responses each from banking sector and reality sector.

Questionnaire

After an in-depth literature review a questionnaire containing 123 questions was formulated. The questionnaire had the following factors (containing various questions) taken from various researches:

Table 1: Conceptualization of Structural Capital

| Authors | Definitions of Structural Capital |
|-----------------------------|--|
| (Alama, 2007) | Intangibles that determine the manner of working of a company. |
| (Carson et al. 2004) | Processes and procedures that arise from employee intellectual contribution. |
| (Ordoñez de Pablos, 2004) | Knowledge that remains in the organization when employees return to their homes and, therefore, is owned by the firm. In this sense, SC is integrated by organizational routines, strategies, process manuals and databases. |
| (CamisónZomosa et al. 2000) | Knowledge that the organization has internalized and that remains within its structure processes or culture although employees leave. |
| (Kogut& Zander, 1996) | Elements that belong to the organization and that facilitates its configuration as an entity providing coherence and superior principles for coordination. |
| (Euroforum, 1998) | Knowledge that can be reproduced and shared and, therefore, becomes somewhat explicit. |
| (Bontis, 1996) | Those technologies, methodologies and processes that make the functioning of the organization possible, this is, basically the elements that define the working mode of the firm. |

Structural capital: Concept and its Application in Service Sector of India with Special Reference to Banking and Reality Sector

Table 2: Constituents of Structural Capital

| Author Name | Year | Constituents of SC |
|--------------------|------|---|
| Maddocks | 2002 | supportive infrastructure, processes and databases of the organization that enable human capital to function |
| Edvinsson | 1997 | Organization, process and innovation capital. Organizational capital includes the organization philosophy and systems for leveraging the organization's capability. Process capital includes the techniques, procedures, and programs that implement and enhance the delivery of goods and services. Innovation capital includes intellectual properties and intangible assets |
| Bontis | 2000 | mechanisms and organizational procedures which support the employees in completing their tasks, and includes all non-human storehouses of knowledge in organizations like databases, process manuals, routines, strategies, and anything whose value to the company is higher than its material value |
| Seetharaman et al. | 2004 | Cultural, spirit of firm, copyrights, trademarks, patents, internal databases, management processes |
| Lönnqvist | 2004 | Technologies, information systems, databases, processes, culture and values, management philosophy, patents, copyrights, trade secrets & other immaterial properties |
| Knight | 1999 | Organization's strategies, internal networks, systems, databases and files, as well as its legal rights to technology, processes, inventions, copyrights, trademarks, trade secrets, brands and licenses. |
| Saint-Onge, Hubert | 1996 | <ul style="list-style-type: none"> Systems - the way in which an organization's processes (information, communication, decision making) and outputs (products/services and capital) proceed. Structure - the arrangement of responsibilities and accountabilities that defines the position of and relationship between members of an organization. Strategy - the goals of the organization and the ways it seeks to achieve them. Culture - the sum of individual opinions, shared mindsets, values, and norms within the organization. |

Table 3: Table showing variables and factors taken from various researches

| S.No. | Factor | Research |
|-------|------------------------------|--|
| 1. | System | Bontis 1998, Ali et.al 2010 |
| 2. | Research and Development | Bontis 1998 |
| 3. | Intellectual Property Rights | Bontis 1998 |
| 4. | Information System | Youndt and Snell 2004, Ali et.al 2010 |
| 5. | Culture | Ali et.al 2010 |
| 6. | Learning Organization | Ali et.al 2010 |
| 7. | New Ideas | Bontis 1998, Sofian et.al |
| 8. | Documentation | Youndt and Snell 2004 |
| 9. | Strategy | Ali et.al 2010 |
| 10. | Communication | Organizational Culture Questionnaire by Human Factors International 2011 |
| 11. | Authority Responsibility | Organizational Culture Questionnaire by Human Factors International 2011 |
| 12. | Participation | Organizational Culture Questionnaire by Human Factors International 2011 |

Structural capital: Concept and its Application in Service Sector of India with Special Reference to Banking and Reality Sector

Sample

Multistage Stratified Random Sampling was used. Data was gathered from Prowess. In all the five sectors top 3 companies were selected. Criterion of selection of the companies was Net Sales for March 2012 in Rs Million. Hence the companies selected are as follows:

Table 4: Organizations that are part of the study

| S. No. | Company/ Organization Name |
|--------|--|
| 1. | State Bank of India |
| 2. | Punjab National Bank |
| 3. | Canara Bank |
| 4. | ICICI Bank Ltd. |
| 5. | HDFC Bank Ltd. |
| 6. | Axis Bank Ltd. |
| 7. | Indian Hotels Co. Ltd. |
| 8. | EIH |
| 9. | Mahindra Holidays & Resorts India Ltd. |
| 10. | Bharti Airtel Ltd. |
| 11. | Reliance Communication Ltd. |
| 12. | Idea Cellular Ltd. |
| 13. | Jaypee |
| 14. | DLF |
| 15. | Omaxe Ltd. |
| 16. | Tata Consultancy Services Ltd. |
| 17. | Wipro Ltd. |
| 18. | Infosys Ltd. |

The idea was to collect 31 responses from each organization but it was not possible thus the detailed company wise response description is given in the next table.

Table 5: Table showing sample description based on companies in which respondents work

Organisation

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------------|-----------|---------|---------------|--------------------|
| ICICI | 25 | 10.3 | 10.3 | 10.3 |
| HDFC | 20 | 8.2 | 8.2 | 18.5 |
| Axis | 13 | 5.3 | 5.3 | 23.9 |
| SBI | 31 | 12.8 | 12.8 | 36.6 |
| PNB | 30 | 12.3 | 12.3 | 49 |
| Canara | 21 | 8.6 | 8.6 | 57.6 |
| Indian Hotels | 17 | 7 | 7 | 64.6 |
| Reliance | 2 | 0.8 | 0.8 | 65.4 |
| DLF | 2 | 0.8 | 0.8 | 66.3 |
| Wipro | 10 | 4.1 | 4.1 | 70.4 |
| Omaxe | 13 | 5.3 | 5.3 | 75.7 |
| Infosys | 3 | 1.2 | 1.2 | 77 |
| TCS | 22 | 9.1 | 9.1 | 86 |
| EIH | 1 | 0.4 | 0.4 | 86.4 |
| JAYPEE | 31 | 12.8 | 12.8 | 99.2 |
| Airtel | 2 | 0.8 | 0.8 | 100 |
| Total | 243 | 100 | 100 | |

Table 6: Table showing sample description based on gender of respondents

Gender

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|--------|-----------|---------|---------------|--------------------|
| Valid | Male | 187 | 77 | 77 | 77 |
| | Female | 56 | 23 | 23 | 100 |
| | Total | 243 | 100 | 100 | |

Data Analysis

Reliability Analysis: Cronbach alpha was computed using SPSS for all the factors and the entire questionnaire in order to test the internal consistency of the questions.

Structural capital: Concept and its Application in Service Sector of India with Special Reference to Banking and Reality Sector

Table 7: Reliability Test

| S.No. | Name of construct | Value of Cronbach alpha |
|-------|------------------------------|-------------------------|
| 1. | System | 0.809 |
| 2. | Research & Development | 0.906 |
| 3. | Intellectual Property Rights | 0.963 |
| 4. | Information System | 0.879 |
| 5. | Culture | 0.737 |
| 6. | Learning Organization | 0.793 |
| 7. | New Ideas | 0.931 |
| 8. | Documentation | 0.806 |
| 9. | Strategy | 0.569 |
| 10. | Communication | 0.878 |
| 11. | Authority Responsibility | 0.900 |
| 12. | Participation | 0.912 |

The value of Cronbach alpha for all the above factors is more than 0.7 except in case of strategy. Hence, there is internal consistency in all the factors except in the factor strategy.

Descriptives

The descriptive analysis was conducted using SPSS for both private and public banks and the following results were found:

Table 9: Table showing mean and standard deviation of all factors of structural capital for private and public banks

| PRIVATE SECTOR BANKS | | | PUBLIC SECTOR BANKS | | |
|-----------------------------|------|--------------------|-----------------------------|------|--------------------|
| Factor | Mean | Standard Deviation | Factor | Mean | Standard Deviation |
| System | 3.92 | 0.923 | System | 3.93 | 0.916 |
| Research and Development | 3.86 | 0.873 | Research and Development | 3.93 | 0.860 |
| Intellectual Property Right | 3.52 | 0.719 | Intellectual Property Right | 3.12 | 0.884 |
| Information System | 4.15 | 0.765 | Information System | 4.31 | 0.758 |
| Culture | 3.99 | 0.755 | Culture | 4.09 | 0.792 |
| Learning Organization | 3.95 | 0.789 | Learning Organization | 4.11 | 0.797 |
| Documentation | 3.57 | 0.901 | Documentation | 3.89 | 0.909 |
| Strategy | 3.1 | 1.174 | Strategy | 3.64 | 1.031 |
| Communication | 3.95 | 0.829 | Communication | 4.03 | 0.802 |
| Authority Responsibility | 3.97 | 0.713 | Authority Responsibility | 4.07 | 0.778 |
| Participation | 3.85 | 0.770 | Participation | 3.87 | 0.865 |
| New Ideas | 3.68 | 0.845 | New Ideas | 3.73 | 0.963 |

Table 8: Table showing sample description based on banks in which respondents work

Organisation

| Organization | | | | |
|--------------|--------|-----------|---------|---------------|
| | | Frequency | Percent | Valid Percent |
| Valid | ICICI | 13 | 16.7 | 16.7 |
| | HDFC | 13 | 16.7 | 16.7 |
| | Axis | 13 | 16.7 | 16.7 |
| | SBI | 13 | 16.7 | 16.7 |
| | PNB | 13 | 16.7 | 16.7 |
| | Canara | 13 | 16.7 | 16.7 |
| | Total | 78 | 100 | 100 |

So, from each bank we have taken 13 respondents each. Total 39 responses are from private banks and 39 responses are from public banks.

a) Comparison of public and private sector banks

The above table depicts that Information System is the most important factor of structural capital for private banks. After Information System, Culture and Authority and Responsibility are

Structural capital: Concept and its Application in Service Sector of India with Special Reference to Banking and Reality Sector

the most important factors of structural capital for private banks. As noticed, while taking the responses, Intellectual Property Rights is a factor which is not applicable to banking sector especially as they have to follow the Banking Regulations Act and they do not focus on Intellectual Property Rights. Also, it shows that Learning Organization, Communication, Research and Development and Participation are important factors of structural capital in private banks. On the other hand, Strategy, Intellectual Property Rights, Documentation and New Ideas are less important factors for private sector banks as their mean value varied between 3 to 3.7. Maximum variability is noticed in the responses of Strategy, System and Documentation. Minimum variability was noticed in the responses of Authority Responsibility, Intellectual Property Rights, Culture, and Information System.

The table above shows that mean value is highest for Information System (4.15) for private banks while the mean value is highest for Information System (4.31) in public sector banks. The lowest mean value for private sector bank is of strategy (3.1) and that for public sector bank is that of Intellectual Property Rights (3.12). Second highest mean value for private sector bank is that of Culture (3.99). Second highest mean value for public sector bank is that of Learning Organization (4.11). Authority Responsibility has the third highest mean value for private banks of 3.97 while Culture has the third highest mean value for public sector banks of 4.09. In case of public sector banks five factors have mean value of more than 4 i.e. Information System, Learning Organization, Culture, Authority Responsibility and Communication while in case of private banks only one factor has mean value of more than 4 i.e. Information System.

Minimum variability is observed in the responses for the factor Authority Responsibility (0.713) in case of private sector

banks and in case of public sector banks, minimum variability is observed in the responses for the factor Information System (0.758). Maximum variability is observed in the responses of factors Strategy (1.174), System (0.923) and Documentation (0.901) in case of private banks while in case of public sector banks maximum variability is observed in the responses of the factors Strategy (1.031), New Ideas (0.963) and Documentation (0.909).

HYPOTHESIS TESTING

The T-test examines the difference in mean values of the (twelve) variables among two groups (private and public banking sector organizations) and calculates the probability that the observed difference in mean results from sampling error alone. Table 11 of independent sample t-test compared twelve aspects of Structural Capital and total SC of the two sectors. The results in Table 10 indicated that there was no significant difference in mean score of private and public banking sector employees overall SC score. Hence, H01 is accepted. Table 11 indicates that there was no significant difference in the mean scores of private and public sector organization among any of the structural capital factors.

For second hypothesis testing bivariate pearson correlation (Table 12) was used. It was found that all aspects of Structural Capital were highly positively correlated with each other except Intellectual Property Rights and Strategy, as we have already seen that bank employees feel Intellectual Property Rights has no role to play in banks and also the reliability of strategy is very low. Correlation between all the factors and Intellectual Property Rights varies from 0.231 to 0.391 (low) and that between all the other factors and strategy varies from 0.135 to 0.436 (low). Also, correlation between Information System and New Ideas is 0.456 and that between Information System and Documentation is 0.469. The correlation between documentation and culture is 0.493. The correlation amongst all the other factors is greater than 0.501.

Structural capital: Concept and its Application in Service Sector of India with
Special Reference to Banking and Reality Sector

Table 10: T-Test Result for overall SC score for public and private sector banks

| | | Levene's Test for Equality of Variances | | | | |
|----|-----------------------------|--|-------|--------|--------|-----------------|
| | | F | Sig. | t | Df | Sig. (2-tailed) |
| Sc | Equal variances assumed | 1.122 | 0.293 | -0.923 | 76 | 0.359 |
| | Equal variances not assumed | | | -0.923 | 73.884 | 0.359 |

Table 11: T-Test Result for SC factors for public and private sector banks

| | | Levene's Test for Equality of Variances | | | | |
|------------------------------|-----------------------------|--|-------|--------|--------|-----------------|
| | | F | Sig. | t | Df | Sig. (2-tailed) |
| System | Equal variances assumed | 0.058 | 0.811 | -0.564 | 76 | 0.574 |
| | Equal variances not assumed | | | -0.564 | 75.954 | 0.574 |
| Research and Development | Equal variances assumed | 0 | 0.998 | -0.479 | 76 | 0.633 |
| | Equal variances not assumed | | | -0.479 | 75.781 | 0.633 |
| Intellectual Property Rights | Equal variances assumed | 0.053 | 0.818 | 2.744 | 76 | 0.008 |
| | Equal variances not assumed | | | 2.744 | 71.324 | 0.008 |
| Information System | Equal variances assumed | 4.846 | 0.031 | -1.332 | 76 | 0.187 |
| | Equal variances not assumed | | | -1.332 | 73.951 | 0.187 |
| Culture | Equal variances assumed | 3.41 | 0.069 | -0.935 | 76 | 0.353 |
| | Equal variances not assumed | | | -0.935 | 72.149 | 0.353 |
| Learning Organization | Equal variances assumed | 0.608 | 0.438 | -1.278 | 76 | 0.205 |
| | Equal variances not assumed | | | -1.278 | 75.999 | 0.205 |
| New ideas | Equal variances assumed | 1.79 | 0.185 | 0.01 | 76 | 0.992 |
| | Equal variances not assumed | | | 0.01 | 73.941 | 0.992 |
| Documentation | Equal variances assumed | 0.956 | 0.331 | -1.866 | 76 | 0.066 |
| | Equal variances not assumed | | | -1.866 | 75.577 | 0.066 |
| Strategy | Equal variances assumed | 3.401 | 0.069 | -2.81 | 76 | 0.006 |
| | Equal variances not assumed | | | -2.81 | 71.844 | 0.006 |
| Communication | Equal variances assumed | 0.282 | 0.597 | -0.614 | 76 | 0.541 |
| | Equal variances not assumed | | | -0.614 | 75.675 | 0.541 |
| Authority Responsibility | Equal variances assumed | 2.036 | 0.158 | -0.81 | 76 | 0.42 |
| | Equal variances not assumed | | | -0.81 | 75.132 | 0.42 |
| Participation | Equal variances assumed | 2.275 | 0.136 | -0.15 | 76 | 0.881 |
| | Equal variances not assumed | | | -0.15 | 73.269 | 0.881 |

Structural capital: Concept and its Application in Service Sector of India with
Special Reference to Banking and Reality Sector

Table 12: Correlation

| | | Correlations | | | | | | | | | | | |
|------------------------------|---------------------|--------------|------|------|------|---------|------|------|------|----------|------|------|------|
| | | system | rd | ip | is | culture | lo | ni | doc | strategy | com | ar | par |
| System | Pearson Correlation | 1 | .799 | .311 | .584 | .510 | .575 | .567 | .501 | .316 | .623 | .567 | .481 |
| | Sig. (2-tailed) | | .000 | .006 | .000 | .000 | .000 | .000 | .000 | .005 | .000 | .000 | .000 |
| | N | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 |
| Research and Development | Pearson Correlation | .799 | 1 | .390 | .668 | .556 | .654 | .671 | .522 | .372 | .623 | .595 | .583 |
| | Sig. (2-tailed) | .000 | | .000 | .000 | .000 | .000 | .000 | .000 | .001 | .000 | .000 | .000 |
| | N | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 |
| Intellectual Property Rights | Pearson Correlation | .311 | .390 | 1 | .264 | .199 | .315 | .380 | .231 | .135 | .298 | .314 | .394 |
| | Sig. (2-tailed) | .006 | .000 | | .019 | .081 | .005 | .001 | .042 | .240 | .008 | .005 | .000 |
| | N | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 |
| Information System | Pearson Correlation | .584 | .668 | .264 | 1 | .567 | .510 | .456 | .469 | .378 | .363 | .509 | .376 |
| | Sig. (2-tailed) | .000 | .000 | .019 | | .000 | .000 | .000 | .000 | .001 | .001 | .000 | .001 |
| | N | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 |
| Culture | Pearson Correlation | .510 | .556 | .199 | .567 | 1 | .635 | .559 | .493 | .270 | .568 | .586 | .525 |
| | Sig. (2-tailed) | .000 | .000 | .081 | .000 | | .000 | .000 | .000 | .017 | .000 | .000 | .000 |
| | N | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 |
| Learning Organization | Pearson Correlation | .575 | .654 | .315 | .510 | .635 | 1 | .725 | .681 | .349 | .654 | .700 | .673 |
| | Sig. (2-tailed) | .000 | .000 | .005 | .000 | .000 | | .000 | .000 | .002 | .000 | .000 | .000 |
| | N | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 |
| New Ideas | Pearson Correlation | .567 | .671 | .380 | .456 | .559 | .725 | 1 | .741 | .379 | .756 | .769 | .838 |
| | Sig. (2-tailed) | .000 | .000 | .001 | .000 | .000 | .000 | | .000 | .001 | .000 | .000 | .000 |
| | N | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 |
| Documentation | Pearson Correlation | .501 | .522 | .231 | .469 | .493 | .681 | .741 | 1 | .436 | .661 | .622 | .711 |
| | Sig. (2-tailed) | .000 | .000 | .042 | .000 | .000 | .000 | .000 | | .000 | .000 | .000 | .000 |
| | N | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 |
| Strategy | Pearson Correlation | .316 | .372 | .135 | .378 | .270 | .349 | .379 | .436 | 1 | .241 | .295 | .316 |
| | Sig. (2-tailed) | .005 | .001 | .240 | .001 | .017 | .002 | .001 | .000 | | .034 | .009 | .005 |
| | N | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 |

Structural capital: Concept and its Application in Service Sector of India with
Special Reference to Banking and Reality Sector

| Correlations | | | | | | | | | | | | | |
|--------------------------|---------------------|--------|------|------|------|---------|------|------|------|----------|------|------|------|
| | | system | rd | ip | is | culture | lo | ni | doc | strategy | com | ar | par |
| Communication | Pearson Correlation | .623 | .623 | .298 | .363 | .568 | .654 | .756 | .661 | .241 | 1 | .808 | .826 |
| | Sig. (2-tailed) | .000 | .000 | .008 | .001 | .000 | .000 | .000 | .000 | .034 | | .000 | .000 |
| | N | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 |
| Authority Responsibility | Pearson Correlation | .567 | .595 | .314 | .509 | .586 | .700 | .769 | .622 | .295 | .808 | 1 | .790 |
| | Sig. (2-tailed) | .000 | .000 | .005 | .000 | .000 | .000 | .000 | .000 | .009 | .000 | | .000 |
| | N | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 |
| Participation | Pearson Correlation | .481 | .583 | .394 | .376 | .525 | .673 | .838 | .711 | .316 | .826 | .790 | 1 |
| | Sig. (2-tailed) | .000 | .000 | .000 | .001 | .000 | .000 | .000 | .000 | .005 | .000 | .000 | |
| | N | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 |

b) Comparison of banking sector and reality sector

| Table 13: Table showing mean and standard deviation of all factors of structural capital for banking and reality sector | | | | | |
|---|------|--------------------|-------------------------------|------|--------------------|
| Banking Sector | | | Reality Sector | | |
| Factor | Mean | Standard Deviation | Factor | Mean | Standard Deviation |
| System | 3.88 | 0.973 | System | 3.43 | 0.835 |
| Research and Development | 3.88 | 0.868 | Research and Development | 3.70 | 0.839 |
| Intellectual Property Rights | 3.40 | 0.728 | Intellectual Property Riights | 3.52 | 0.705 |
| Information System | 4.20 | 0.809 | Information System | 3.72 | 0.715 |
| Culture | 4.03 | 0.777 | Culture | 3.55 | 0.741 |
| Learning Organization | 4.04 | 0.807 | Learning Organization | 3.84 | 0.592 |
| Documentation | 3.74 | 0.978 | Documentation | 3.55 | 0.756 |
| Strategy | 3.16 | 1.183 | Strategy | 3.58 | 0.778 |
| Communication | 4.02 | 0.849 | Communication | 3.78 | 0.695 |
| Authority Responsibility | 4.05 | 0.775 | Authority Responsibility | 3.79 | 0.737 |
| Participation | 3.89 | 0.780 | Participation | 3.67 | 0.695 |
| New Ideas | 3.69 | 0.915 | New Ideas | 3.65 | 0.743 |

The above table depicts that Learning Organization is the most important factor of structural capital for reality sector. After Learning Organization, Authority Responsibility and Communication are the most important factors of structural capital for reality sector. Also, it shows that Information System and Research and Development are important

factors of structural capital in reality sector. On the other hand, System, Intellectual Property Rights, Documentation and Culture are less important factors for reality sector as their mean value varied between 3.50 to 3.56. Maximum variability is noticed in the responses of Research and Development and System. Minimum variability was noticed

Structural capital: Concept and its Application in Service Sector of India with
Special Reference to Banking and Reality Sector

in the responses of Learning Organization, Communication and Participation.

The table above shows that mean value is highest for Learning Organization (3.84) for reality sector while the mean value is highest for Information System (4.20) for banking sector. The lowest mean value for reality sector is of system (3.43) and that for banking sector is that of strategy (3.16). Second highest mean value for reality sector is that of Authority Responsibility (3.79). Second highest mean value for banking sector is that of Authority Responsibility (4.05). Communication has the third highest mean value for reality sector of 3.78 while Learning Organization has the third highest mean value for banking sector of 4.04. Incase of banking sector five factors have mean value of more than 4 i.e. Information System, Authority Responsibility, Learning Organization, Culture and Communication while in case of reality sector none of the factors has mean value of more than 4.

Minimum variability is observed in the responses for the factor Learning Organization (0.592) in case of reality sector and incase of banking sector minimum variability is observed in the responses for the factor Intellectual Property Rights (0.728). Maximum variability is observed in the responses of factor Research and Development (0.839) in case of reality sector while in case of banking sector maximum variability is observed in the responses of the factors Strategy (1.183).

The T-test examines the difference in mean values of

the (twelve) variables among two groups (banking sector and reality sector) and calculates the probability that the observed difference in mean results from sampling error alone. Table 15 of independent sample t-test compared twelve aspects of Structural Capital and total SC of the two sectors. The results in Table 14 indicated that there is significant difference in mean score of banking and reality sector employees overall SC score. Hence, HA3 is accepted and H03 is rejected. Looking at the group statistics table tells us that mean value of structural capital of banking sector (3.84) is greater than that of reality sector (3.65). Table 15 indicates that there was significant difference in the mean scores of eight factors of structural capital i.e., system, information system, culture, learning organization, strategy, communication, authority responsibility and participation. Looking at the group statistics table tells us that mean value for system is greater for banking sector (3.89) than that of reality sector (3.47). Mean value for information system is greater for banking sector (4.20) than that of reality sector (3.72). Mean value for strategy is greater for reality sector (3.58) than that of banking sector (3.20). Mean value for culture, learning organization, communication, authority responsibility and participation is also greater for banking sector rather than reality sector.

SUMMARY AND FINDINGS

In today's competitive environment, banks have become all the more about the importance of

HYPOTHESIS TESTING

| Table 14: T-Test Results for overall SC Score for reality and banking sector | | | | | |
|--|---|-------|-------|--------|-----------------|
| | Levene's Test for Equality of Variances | | t | Df | Sig. (2-tailed) |
| | F | Sig. | | | |
| Equal variances assumed | 10.826 | 0.001 | 2.397 | 90 | 0.019 |
| Equal variances not assumed | | | 2.397 | 73.028 | 0.019 |

Structural capital: Concept and its Application in Service Sector of India with Special Reference to Banking and Reality Sector

Table 15: T-Test Result for SC Factors score for reality and banking sector

| | | Levene's Test for Equality of Variances | | | | |
|------------------------------|-----------------------------|---|-------|--------|--------|-----------------|
| | | F | Sig. | t | Df | Sig. (2-tailed) |
| System | Equal variances assumed | 3.805 | 0.054 | 4.312 | 90 | 0 |
| | Equal variances not assumed | | | 4.312 | 78.926 | 0 |
| Research and Development | Equal variances assumed | 1.251 | 0.266 | 1.419 | 90 | 0.159 |
| | Equal variances not assumed | | | 1.419 | 88.065 | 0.159 |
| Intellectual Property Rights | Equal variances assumed | 2.698 | 0.104 | -1.096 | 90 | 0.276 |
| | Equal variances not assumed | | | -1.096 | 88.044 | 0.276 |
| Information System | Equal variances assumed | 15.732 | 0 | 5.105 | 90 | 0 |
| | Equal variances not assumed | | | 5.105 | 77.124 | 0 |
| Culture | Equal variances assumed | 11.018 | 0.001 | 6.407 | 90 | 0 |
| | Equal variances not assumed | | | 6.407 | 80.819 | 0 |
| Learning Organizations | Equal variances assumed | 11.285 | 0.001 | 2.043 | 90 | 0.044 |
| | Equal variances not assumed | | | 2.043 | 73.416 | 0.045 |
| New Ideas | Equal variances assumed | 15.795 | 0 | 0.872 | 90 | 0.385 |
| | Equal variances not assumed | | | 0.872 | 64.63 | 0.386 |
| Documentation | Equal variances assumed | 10.338 | 0.002 | 1.281 | 90 | 0.204 |
| | Equal variances not assumed | | | 1.281 | 75.887 | 0.204 |
| Strategy | Equal variances assumed | 23.032 | 0 | -3.216 | 90 | 0.002 |
| | Equal variances not assumed | | | -3.216 | 65.028 | 0.002 |
| Communication | Equal variances assumed | 11.961 | 0.001 | 2.216 | 90 | 0.029 |
| | Equal variances not assumed | | | 2.216 | 75.15 | 0.03 |
| Authority Responsibility | Equal variances assumed | 1.388 | 0.242 | 2.526 | 90 | 0.013 |
| | Equal variances not assumed | | | 2.526 | 83.839 | 0.013 |
| Participation | Equal variances assumed | 9.615 | 0.003 | 2.322 | 90 | 0.022 |
| | Equal variances not assumed | | | 2.322 | 68.203 | 0.023 |

structural capital and are applying its model for their customers as well as for the society's benefit. Human Capital runs for greener pastures and hence, it becomes significant to have systems in place. Based on the analysis, following are the findings:

1. There was no significant difference in mean score of private and public banking sector employees overall SC score.
2. There was no significant difference in the mean scores of any of the factors of structural capital for private and public sector organization.

Structural capital: Concept and its Application in Service Sector of India with Special Reference to Banking and Reality Sector

3. All aspects of Structural Capital were highly positively correlated with each other except Intellectual Property Rights and Strategy. Also, correlation between Information System and New Ideas is low and that between Information System and Documentation is also low. The correlation between documentation and culture is also low. The correlation amongst all the other factors is greater than 0.501.
4. There was significant difference in mean score of banking and reality sector overall SC score.
5. There was significant difference in the mean scores of eight factors of structural capital i.e., system, information system, culture, learning organization, strategy, communication, authority responsibility and participation
6. The mean value for banking sector is greater than that of the reality sector for the factors system, information system, culture, learning organization, communication, authority responsibility and participation.
7. The mean score for reality sector is greater than that of banking sector for the factor strategy.

have great significance attached to it in banking sector but it should be given due importance by the banking sector. Reality does not give as much importance to system, culture, learning organization, communication and authority and responsibility but it should. Reality sector gives strategy much more importance than does banking, thus, banking should give more importance to strategy.

REFERENCES

- Alama, E.M. (2007). Intellectual capital and business performance in professional service firms in Spain, Doctoral Thesis, Complutense University of Madrid.
- Bontis, Nick, (1996) There's a Price On Your Head: Managing Intellectual Capital Strategically, *Business Quarterly*, Vol 60 No. 4, p. 40-47.
- Bontis, Nick (1998). Intellectual capital: an exploratory study that develops measures and models". *Management Decision*, Vol. 36 Iss: 2, 63-76.
- Bontis, N., Chua, W.C, and Richardson. (2000). Intellectual capital and business performance in Malaysia industries. *Journal of Intellectual Capital*, 1(1), 85-100.
- Camisón Zornosa C., Palacios Marqués D. and Devece Carañana C. (2000). The model of measuring intellectual capital in the enterprise: Nova Model. In Internet: <http://www.gestiondelconocimiento.com>. (Julio 2002).
- Carson, E.; Ranzijn, R., Winefield, A., and Marsden, H. (2004). Intellectual Capital. Mapping Employee and Work Group Attributes. *Journal of Intellectual Capital*, 5, p443.
- Edvinsson, L. (1997). Developing Intellectual Capital at Skandia. *Long Range Planning*, (30), 336-373.
- Euroforum (1998). Intellect Project, Measuring Intellectual Capital, University Institute Euroforum Escorial, Madrid, Spain.
- Knight, Daniel J., Performans Measures For Increasing Intellectual Capital, *Planning Review*, 27 (2) Mar/ Apr. 1999.
- Kogut, B. and Zander, U. (1996). What firms do? Coordination, identity and learning. *Organization Science*, 3, 383-397.
- Lönnqvist, A. (2004) Measurement of Intangible Success Factors: Case Studies on the Design, Implementation and Use of Measures. (Doctoral dissertation) Tampere University of Technology. Publication 475. Tampere.
- Maddocks, J. and Beaney, M. (2002). See the invisible and intangible. *Knowledge Management*, March, 16-17.

CONCLUSION AND FUTURE AREAS OF WORK

To conclude, the data supports that private and public sector banks do not award different values to different factors of structural capital. Also, reality sector and banking sector have different opinions for different factors of structural capital.

RECOMMENDATIONS

Structural Capital is an important concept for both banking and reality sector; although the analysis highlights that the different sectors might award different significance to different factors of structural capital. Strategy is a factor which does not

Structural capital: Concept and its Application in Service Sector of India with Special Reference to Banking and Reality Sector

Ordóñez de Pablos, P. (2004). Organizational structural capital as a source of corporate competitiveness indicators study of industrial economics. *Industrial Economics*, 357, 131-140.

Saint-Onge, Hubert, Tacit Knowledge: The Key To The Strategic Alignment Of Intellectual Capital, *Planning Review*, 24 (2) Mar/ Apr. 1996, p. 10-14.

Sofian, Saudah and Tayles, Mike and Pike, Richard (2006) The implications of intellectual capital on performance measurement and corporate performance. *Jurnal kemanusiaan* (8). pp. 13-24.

Seetharaman, A., Lock Teng Low, K. and Saravanan, A.S. (2004) "Comparative justification on intellectual capital", *Journal of Intellectual Capital*, Vol 5 No 4, pp. 522-539.

Youndt, M.A., Subramaniam, M., & Snell, S.A. 2004, Intellectual Capital Profiles: An examination of investments and returns. *Journal of Management Studies*, 41, 335-362.

BIOGRAPHY

Arpita Kaul is Assistant Professor in Commerce at Sri Venkateswara College, University of Delhi, India. She is pursuing Ph.D. on "Structural Capital: A Study of Select Organizations." from the Department of Management Studies, Jagannath University, India. She did M. Com from University of Delhi, and B. Com (H) and B.ed from University of Delhi, India. She has about five years of teaching experience. Her research papers have been published in reputed journals. She has been awarded gold medal twice by Szent Istvan University, Hungary, on November 11, 2008 and on June 24, 2009 respectively. She is a part of a project called e pg Pathshala, Project by UGC on e-Content Development for PG Courses in Subject under NMEICT, MHRD, Govt. of India as a content writer. She is also the internship guide of diploma in training and development from Indian Society of Training and Development.