# THE EFFECT OF SOCIO-TECHNICAL ENABLERS ON KNOWLEDGE SHARING BEHAVIOUR AMONG ACADEMICIAN IN IRAN WITH SOCIAL NETWORK TIES AS A MODERATOR

**By**

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## DEDICATION

This thesis, in one way or another, is a reflection and translation of Doa, love, care, sacrifice, hardship, value, inspiration, and moral support, to mention a few, by my most valued asset blessed by Allah S.W.T. Thus, this special and humble dedication came sincerely from the bottom of my heart to special individuals. To my adorable, beloved and caring husband, Abdol Reza Bank Tavakoli, my lovely son, Mohammad, my beloved parents, Fatemeh Sofiabadi, in loving memory my late dad, Ali Jahani (al-fatihah), my loving siblings, Shahram Jahani, Shahla Jahani (al-fatihah), Shahrzad Jahani, and Sheida Jahani. No words can accurately express or describe how grateful I am to be related to you all. Despite all the hardships and sacrifices experienced by all of you as a result of my selfishness during my PhD journey, may Allah give me time to recover and repay all that I had done to you, Insya Allah.

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## ABSTRAK

Dewasa ini, pengurusan ilmu atau pengetahuan (knowledge management, KM) dianggap sebagai suatu kebolehan penting yang menjadi kunci utama kepada faedah bersaing bagi para pengamal dan para akademik. Para penyelidik banyak berdebat bagi kebanyakan bahagian penting yang tergarap dalam KM, bahawa individu adalah penggerak utama penjanaan ilmu di sesebuah organisasi. Perkongsian ilmu merupakan suatu bahagian penting daripada KM. Dewasa ini, ia dianggap sebagai suatu sumber faedah bersaing yang berpotensi. Pembangunan sesebuah masyarakat, dalam dimensi ekonomi, budaya, sosial, dan politik, dipengaruhi oleh sumber insannya. Pendidikan dianggap sebagai suatu faktor utama dalam pembangunan sumber insan. Universiti adalah penjana utama ilmu, inovasi dan kemahiran, di samping memainkan peranan penting dalam pembangunan modal insan sebagai asas perkembangan dan pembangunan masyarakat.Sehubungan itu, adalah penting bahawa penyelidikan yang dijalankan oleh pihak universiti mengambil kira serta sejajar dengan perubahan masa. Kajian ini memberi tumpuan terhadap isu perkongsian ilmu sebagai suatu bidang kajian yang cerah pada masa depan dan kemampuannya menberikan manfaat yang penting terhadap institusi pendidikan tinggi. Kajian ini cuba mengenal pasti pemangkin utama (persekitaran organisasi, faktor individu dan penggunaan teknologi maklumat) untuk berkongsi ilmu dan natijah (output intelektual) daripada amalan ini. Sebagai tambahan, kajian ini juga

meneroka kesan daripada ikatan rangkaian sosial sebagai moderator bagi perkongsian ilmu dan output intelektual. Data dikumpul berdasarkan kajian yang dilakukan secara pos (mailed survey). Sejumlah 276 respons digunakan bagi tujuan kajian ini. Dapatan kajian menyediakan beberapa bantuan empirik bagi rangka kerja teori. Dapatan membuktikan bahawa persekitaran organisasi, faktor individu dan penggunaan teknologi maklumat memainkan peranan penting dalam mempengaruhi perlakuan perkongsian ilmu dalam kalangan ahli akademik. Perkongsian ilmu terdiri daripada dua dimensi, iaitu perkongsian ilmu secara tersurat (explicit) dan tersirat (implicit). Dapatan menunjukkan bahawa subdimensi persekitaran organisasi (anugerah intrinsik) dan komitmen organisasi mempunyai kesan yang paling signifikan terhadap kedua-dua dimensi perkongsian ilmu. Di samping itu, peranan kepimpinan mentor, struktur terpusat, keberkesanan diri dan penggunaan teknologi maklumat secara signifikannya memungkinkan perkongsian ilmu secara tersurat. Kajian ini menunjukkan beberapa bukti dalam usaha menyederhanakan kesan ikatan rangkaian sosial di antara pemangkin, perkongsian ilmu dan output intelektual. Berdasarkan dapatan kajian, perbincangan tentang dapatan semasa serta batasan, implikasi teori dan praktikal kajian juga diutarakan.

# THE EFFECT OF SOCIO-TECHNICAL ENABLERS ON KNOWLEDGE SHARING BEHAVIOUR AMONG ACADEMICIANS IN IRAN WITH SOCIAL NETWORK TIES AS A MODERATOR

## ABSTRACT

Nowadays, knowledge management (KM) is recognised as an important capability that opens the key to competitive advantage for many practitioners and academicians. Researchers have argued the most important part of KM is that individuals are the main mover of knowledge creation in an organization. Knowledge sharing behaviour is an essential part of KM. Nowadays, recognised by business as a potential source of competitive advantage. The development of any society, in economic, cultural, social, and political dimensions, influences its human resources. Education is recognised as a major factor in human resource development. Universities are the supreme creator of knowledge, innovation and proficiency, taking on the vital role developing human capital as the base of societal growth and development. In this role, it is important that university research responds to the changing modern day environment. This thesis addresses the issues of knowledge sharing behaviour as a promising area of study and has the capability to provide vital benefits to higher education institutions. The study tries to identify key enablers (organizational environment, individual factors and information technology usage) to knowledge sharing behaviour and the outcomes (intellectual output) of these practices. In addition, the study examines the effects of social network ties as a moderator between knowledge sharing behaviour and intellectual output. Data collected through the mailed survey. A total of 276 usable responses were used for

the purpose of this study. The findings provided some empirical support for the theoretical framework. The results provided evidence that organisational environment, individual factors and information technology usage played an important role in influencing knowledge sharing behaviour among academicians. Knowledge sharing behaviour comprises two dimensions, namely explicit knowledge sharing behaviour and implicit knowledge sharing behaviour. The result indicated that the sub-dimensions of organisational environment (intrinsic reward) and organisational commitment had the most significant effect on both dimensions of knowledge sharing behaviour. In addition, mentor leadership role, centralised structure, self-efficacy and information technology usage significantly enabled explicit knowledge sharing behaviour. This study demonstrated some evidence to support the moderating effect social network ties between variables, knowledge sharing behaviour and intellectual output. Based on the study's findings, discussions of the current findings as well as limitations, theoretical and practical implications of the study were provided.

# CHAPTER ONE

# INTRODUCTION

## 1.0 Introduction

In the "new economy," the way in which organisations acquire, use, and leverage knowledge have become a major business driver (Ling et al., 2009). Knowledge management activities include knowledge creation, storage and distribution, and learning and sharing (Fang et al., 2005). Nowadays, knowledge management (KM) is recognised as an important capability that keeps the key to competitive advantage for many practitioners and academicians. Researchers have argued the most important part of KM is that individuals are the main mover of knowledge creation in an organisation (Nonaka, 1994). Knowledge sharing behaviour among individuals is critical in assisting in knowledge creation in the organisation. According to Nahapiet and Ghoshal (1998), creating and transferring knowledge among individuals could develop organisational knowledge. Hence, many companies and scholars are interested in the factors that enhance knowledge sharing behaviour within organisations. However, there are obstacles to knowledge sharing behaviour. Employees may hoard unique knowledge to secure their positions for internal rewards and promotions in today's intensely competitive organisations (Menon & Pfeffer, 2003).

Knowledge sharing behaviour is an essential part of KM (Gupta & Govindarajan, 2000; Szulanski, 1996), nowadays recognised by business as a potential source of competitive advantage. One of the key goals of knowledge sharing behaviour research, as it relates to business, has been to identify ways in

which organisations might tap into employees' knowledge in order to benefit the overall organisation (Nonaka & Takeuchi, 1995). Much of the knowledge sharing behaviour literature focused on business organisations and attempts to identify ways in which technology can help employees share knowledge more efficiently in order to increase a business' profitability (Hou, Sung & Chang, 2009). An emphasis on knowledge has sparked a recent interest in performance implications of organisational knowledge management/sharing processes and practices (Hsu, 2007).

However, knowledge sharing is a test of human nature and accessing knowledge from colleagues can be difficult (Hsu, 2006).The development of any society, in economic, cultural, social, and political dimensions, influences its human resources. Education is recognised as a major factor in human resource development, as H. G. Wells, the famous novelist noted in his statement, "History is a race between education and catastrophe." And Lyndon B. Johnson, former president of the United States, expressed his belief that the answer to all the problems of any country is hidden in a single word; a word called 'education' (Seresht, 2001). Although education may be insufficient to obviate all deprivations afflicting a country, appropriate and effective education creates a brighter future for people and hopes that societal change will follow.

Universities are the supreme creator of knowledge, innovation and proficiency, taking on the vital role developing human capital as the base of societal growth and development (Karname, Hagi & Akbari, 2004). In this role, it is important that university research responds to the changing modern day environment (Teichler, 2003).As with other professions, knowledge sharing behaviour in academia could enable an academician's individual knowledge to be integrated into a collective knowledge base of the profession. For example, if a lecturer retires after

thirty years of service, her or his experience will not be lost, but instead passed along to her or his successor, as well as to other lecturers.

Knowledge sharing behaviour has, more recently, been recognised as a significant issue as higher education institutions shift their strategic focus towards quality of intellectual output. Indeed, educational institutions play a critical role in knowledge creation. Over time, academic staff build-up a mental cache of embedded implicit knowledge. This knowledge can be a competitive advantage if it is shared with those who need and benefit from it, thus it is important to encourage knowledge sharing behaviour among academicians, especially those with a long tenure. Unfortunately, "knowledge sharing within organisation very often is not successful and organisational performance is not improved" (Hsu, et al., 2007).

This paper addresses the issues of knowledge sharing behaviour as a promising area of study and has the capability to provide vital benefits to higher education institutions. The study tries to identify key enablers to knowledge sharing behaviour and the outcomes of these practices. In addition, the study examines the effects of social and professional connections as a moderator for knowledge sharing behaviour. This introductory chapter describes Iran's issues, background of study, problem statement, as well as research questions and objectives. This chapter ends with the definition of key terms of the study and the organisation of remaining chapters.

## 1.1 Background of the Study

Iran is the second-largest economy and the most populous country in the Middle East, with domestic production (GDP) of USD 115 billion and a population of 68 million. Among OPEC members, Iran is the second prime oil producer in the world and holds the world's second-largest raw materials of gas. The literacy rate is

more than 87 percent with more than 18 million students of which about 1.7 million are in higher education. Moreover, about 2.3 million staff reworking in the governmental organisations, such as ministries, universities, and other state institutions (UNESCO, 2008).

A World Bank Report stated that Iran had made good progress in the areas of human resource development (Kousha & Abdoli, 2004). For example, in the years from 1970 to 2001, primary school enrolment rates improved from 60 to 90 percent. From 1978 to 1999 there was a significant reduction in the number of people living under the poverty line, just 16 percent down from 47 percent. For the period 1980 to 2001, the population growth rate decreased from 3.7 percent to 1.4 percent, and the productiveness rate decreased from 6.8 to 2.62. The high unemployment rate that is at 15 percent, are the most crucial social challenges for Iran (Kousha & Abdoli, 2004).

Higher education in Iran has a long history of research activities that can be traced back to Gondishapour University, which was regarded as a great scientific centre for centuries. In ancient Iran, education was a privilege reserved for the royal family. One thousand five hundred years ago a small number of higher education institutions called 'Madrasas,' were established, which translated means schools or colleges (Sedig, 1975). Later, under the Safavid dynasty, advanced programs were developed to support increased national solidarity and security. The Iranian Prime Minister in the mid-19$^{th}$ century, Amir-Kabir, established Dar al-Fonoun or a polytechnic, and sent students overseas to study. During this time Iran invited international lecturers to teach at the technical colleges in Tehran, Tabriz, and Oroumieh (Ganimeh, 1993). Academic advances continued in the 20$^{th}$ century with the establishment of The Ministry of Education, Endowments, and Fine Arts in 1910,

followed by the Supreme Councils for Education in 1921, Culture in 1941, and Central Councils for Universities in 1965, and for General Education in 1969. Universities, including the University of Tehran were established about one century after Dar al-Fonoun. In 1934, the Prime Minister was appointed the chancellor of the University of Tehran for eight years.

The expansion of higher education institutions in Iran was modelled on the structure of the University of Tehran. In the last two decades the Iranian population has almost doubled (33 million in 1976; 65 million in 2000) and similarly, higher education activities have increased. Higher education institutions are now spread across Iran with closer attention paid to research activities and on-going development of postgraduate degrees.

According to Iran's 20-year development plan (1404 Plan), Iran plans to gain developed country status by the year 2025 and across the region be ranked number one in the areas of economics, technology, and education (MSRT, 2001).Iran, like many developing countries, looks towards technology as an enabler of economic development. Higher education, developing social capital and human resources, is also a strategic enabler, and many government entities are responsible for developing relevant policies. For example, after the Iranian Revolution the High Council Informatics was established to systemise information technology (IT) activities.

Its primary role was to evaluate and organise IT enterprises and supervise software development. Another entity, the National ICT Agency (NIKTA), with the structure and sectors illustrated in Figure 1.1, was responsible for designing and managing Iran's ICT development plan (Sadeghnezhad, 2003).

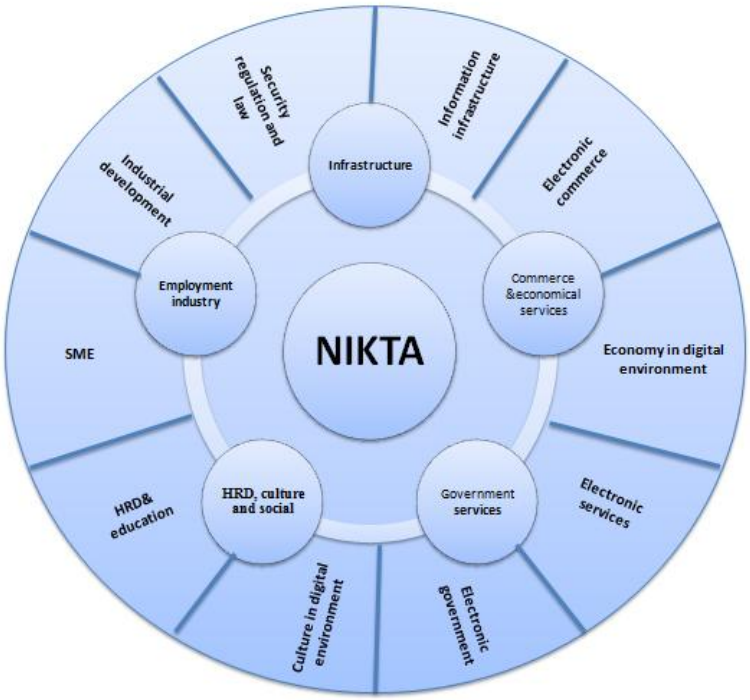


**Figure 1.1: Structure and Areas of Focus for NIKTA**
(Source: Kousha & Abdoli, 2004)

The Information and Communication Technology Application programme (TAKFA) is, at this time, the most important policy initiative for Iran. Its task is to promote the development of a knowledge-based economy with the following objectives:

- Create infrastructure communications development
- Compile and apply a comprehensive system of communications and information
- Develop productive and beneficial employment
- Promote the development of IT skills at both individual and institutional levels
- Implement flagship projects
- Create the groundwork for entry into the international IT market
- Increase the country's economic and financial capabilities

### 1.1.1 Education System in Iran

The government partners in Iran's education sector are the Ministry of Science, Research and Technology (MSRT) and Iran's National radio and TV broadcaster. The Ministry of Culture and Higher Education and Ministry of Health and Medical Education are the two ministries responsible for higher education in Iran. Some higher education programmes, including primary, teachers-training colleges, technical and vocational institutes, are under the jurisdiction the Ministry of Education.

Higher education in Iran is centralised; all training and development decisions for academic staff are made centrally and then dispatched to universities for implementation. Vaziri (1999) explained the history of Iran's education as five separate phases. The first period (from 1934 to 1949) exhibited a semi-centralised approach, with centralised university management and financial affairs, but student admission, faculty member selection and curricula planning were decentralised. In the second period (1949 to l967), financial affairs remained centralised, university management was decentralised, and student admission, faculty member selection and curricula planning were decentralised, constituting a quasi-semi-centralised system. In the third period (from 1967 to 1980), university financial affairs was decentralised, faculty member selection remained decentralised but curricula planning was semi-centralised. In the fourth period (1980 to 2000), significant changes occurred where all university functions including financial affairs, student admissions, faculty member selection, educational affairs, and curricula planning were centralised under the Ministry of Science, Research, and Technology (MSRT). Finally the fifth period, from 2000, trended towards decentralised educational affairs and curricula planning in universities. The first step towards decentralisation

occurred with an executive by-law in 1990, which was followed with a proposed by-law in 1999.

## 1.2 Iran's IT Plan for Development and Education of Human Resources

Figure1.2 shows the 2004 distribution of financial credits for information and communication technologies (ICT). As shown; about 60% of credit is related to the development and education of human resources using ICT in Iran.

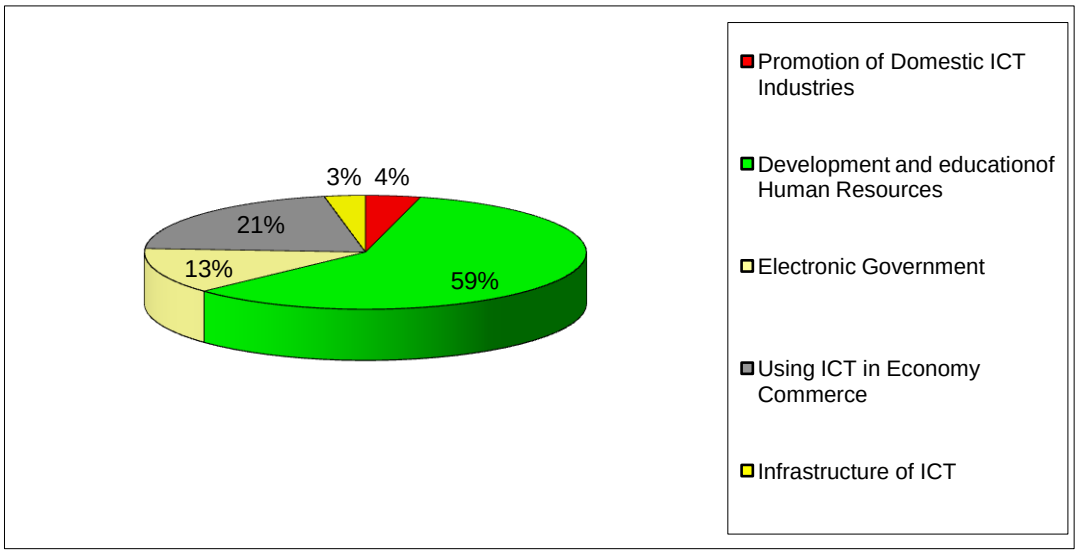


**Figure 1.2 Distribution of Financial Credits for Iran's National IT Agenda in 2004**
(Source: Kousha, Abdoli, 2004)

In recent years, MSRT has invested heavily in securing access to databases and electronic journals. Universities and some other higher education institutions now have access to more than 8000 electronic journals and publications. Greater transparency of this research resource through the creation of a university and research consortia, or a joint venture between MSRT and the Ministry of Health and Medical Education, could increase productivity and capital savings.

A recent statistics report, ranking 64 countries on their adoption and usage of information technology, placed Iran at number 64. The issues cited in the report were deficient implementation of a new technology, in particular the lack of knowledge

transfer on installation, usage and maintenance. To be effective, new technology must be accompanied by transfers in education, organisation, administration, employment strategy, research, and so forth. To achieve the expected benefits, a new technology must also be adopted by the receiving organisation and users (Asemi, 2006).To avoid these issues, which currently hamper Iran's educational structure, education policymakers fundamentally reform programmes promoting IT use in universities.

Figure 1.2 illustrates the overall commitment to and importance of information technology as an enabler of economic development. However, higher education is another factor in supply of social capital and human resource development. Despite the heavy investment, evidence shows that the country's position in technological production is not ideal and furthermore, there little attention paid to the commercial aspects of science. The relevance of higher education to national development requires still more concrete attention.

In the following section we will show the beneficial effects of scientific publications on ISI and teaching staff numbers in the Iranian higher education sector.

### 1.2.1 Student Facts and Figures

**Table 1.1 Student Numbers by Academic Year and Ratio in 2008-09**

| Academic Year | Graduate student population | Student population | Ratio |
|---|---|---|---|
| 2008-09 | 135,262 | 1,945,931 | 7 |

(Source: Institute For Research and Planning in Higher Education, 2008-09)

**Table 1.2 Frequency and Percentage of Full-Time Faculty by Sector & Rank in 2008-09**

| Sector / Rank | Public | | Non-Public (Private) | | Total | |
|---|---|---|---|---|---|---|
| | Number | Percentage | Number | Percentage | Number | Percentage |
| Professor | 973 | 3.47 | 93 | 0.6 | 1,066 | 2.5 |
| Associate Professor | 2,009 | 7.1 | 128 | 0.9 | 2,137 | 5.0 |
| Assistant Professor | 11,012 | 39.2 | 3,591 | 23.9 | 14,603 | 33.9 |
| Instructor | 9,281 | 33.0 | 10,937 | 72.8 | 20,218 | 46.9 |
| Educator | 389 | 1.4 | 114 | 0.8 | 503 | 1.2 |
| Others | 4,442 | 15.8 | 165 | 1.1 | 4,607 | 10.7 |
| Total | 28,106 | 100 | 15,028 | 100 | 43,134[a] | 100 |

(Source: Institute for research and planning in higher education, IRPHE)

a. In addition to the 43,143 full-time faculty members in the Iranian higher education system in 2008-2009 academic year, 28,509 visiting faculty members, on a teaching-contract basis, were also engaged in teaching.

**Table 1.3 Ratios of Students to Full-Time Faculty Members by Sector in 2008-09**

| Sector | Regular, Daytime Students | Full-time Faculty Members | Ratio |
|---|---|---|---|
| Public | 754,399 | 28,106 | 26.8 |
| Non-Public(Private) | 1,056,933 | 15,028 | 70.3 |
| Total | 1,811,332 | 43,134 | 42 |

(Source: Institute For Research and Planning in Higher Education, 2008-09)

The number of Iranian scientific productions indexed by ISI rose to 0.18 percent of the total scientific productions published in such journals in 2009, up by 53 percent compared with year 2000.The highest number of references to the Iranian scientific productions indexed by ISI belongs to the basic science field. Iranian scientific productions indexed by ISI are more concentrated in a few fields particularly in the field of basic sciences.

## 1.3 Knowledge Sharing Behaviour in the Educational Context

Knowledge management (KM) has attracted much attention by the business world since the introduction of the concept by Davenport and Prusak about 12 years ago. Although the essence of managing knowledge is not a new-fangled issue (Davenport & Prusak, 2000), the changing contemporary business environment, calls for an active engagement into KM initiatives. Whatever, the KM strategy followed by an organisation is, it targets for the promotion of sharing knowledge, ideas, and experience among individuals and groups (Cabrera & Cabrera, 2002).

Philosophically, knowledge management is often advanced from two diametrically different, and one integrative viewpoint: (1) interpretive versus (2) functionalist and (3) the socio-technical perspective. These three perspectives are affected by certain epistemologies that exist at both the individual and group level: autopoiesis, connectionism, and cognitivism. As a mix area of study, knowledge management is a field that crosses various disciplines, such as information systems and psychology, which is conceptually complex consisting of many issues and viewpoints, ranging from the nature of knowledge itself to its most effective method of transfer (Collison & Parcell, 2004; Hart & Warne, 2006; Smith, 2004). These complexities place the field within the interests of information systems researchers, psychologists, management scientists, and practitioners, with debate focussed on methods of approach (i.e., technological versus social) and, often, definitions of what specific terms actually mean (i.e., knowledge versus information and data). Conceptual frameworks of what constitutes a ‘knowledge management system’ and the definition of ‘information’ and its distinction from ‘knowledge’ vary across these disciplines. In the interest of narrowing this spectrum of methods and definitions, the focus of this particular analysis will be the interrelationships that exist between

concepts in knowledge management, focussing on socio-technical systems, cognitive perspectives, and influences on knowledge management that include individual and organisational epistemologies. An understanding of these interrelationships allows organisations to establish effective knowledge management systems that align with prevailing individual or group perspectives on knowledge sharing. Knowledge sharing can be broadly defined as an exchange of knowledge from giver to receiver with socio-cultural factors and organisational structures as influencing factors (Lin, 2008; Usoro & Kuofie, 2006).

On the other hand, Educational institutions have long created and delivered multiple aspects of knowledge. Knowledge Management adds an element of organization and structure that encompasses strategic and operational focus through knowledge sharing and practices. Benefits of knowledge sharing behaviour are often associated with organisations gaining competitive advantage (Liebowitz, 2007). Few knowledge sharing behaviour studies focus on education (Hou, Sung, & Chang, 2009). This could be because academic institutions do not utilise KM strategies to the same extent that other professions tend to, which means that knowledge sharing behaviour is then not studied at the same rate in education as it is in fields such as business. Therefore, there is less information regarding "knowledge sharing behaviour in an academic environment" (Kim & Ju, 2008, p. 284).

In order to establish a practice of effective knowledge sharing behaviour in an organisation, one must identify knowledge sharing behaviour activity, its contextual factors, and its relationship to performance. According to Rao (2002) indicated that KM is formalized pedagogically when there is access to knowledge. He noted that proficiency and expertise which create new capabilities enable superior academic performance and encourage innovative ideas and real-world applications. The

author's suggestion implies that educational departments' knowledge can be readily organized around domains of specialized areas of knowledge, subject areas, disciplines, frequently used information and specific research endeavours.

The focus of this study is the extent of knowledge sharing behaviour in terms of research (e.g. publications, papers, grants etc.) and the enhancement of academic performance as an outcome of the quality of higher education. Nowadays, the role of human capital in economic growth and development cannot be ignored. Higher education, as the most important source of educating people, is a key element to developing a knowledge-rich human capital base (Karname Hagi & Akbari, 2004). Educational institutions play a critical role in knowledge creation.

As we show in Figure 1.2 the financial credit for education and infrastructure is not balanced. According to Kharabsheh (2007, p.419), "the effective flow of knowledge is only sustainable through people and too much faith has been invested in technology at the expense of people issues and ignoring people issues associated with knowledge sharing behaviour led to the failure of KM initiatives". Bringing together three core organisational resources, people, and process, and technology that knowledge management enables organisations to share knowledge more efficiently (Petrides & Nodine, 2003).

Hence, knowledge sharing has been recognized as a critical process through which organizational knowledge can be utilized. For successful knowledge sharing, companies need to capitalize on various socio-technical enablers. The primary objective of this study is to provide a better understanding of how these enablers can affect knowledge sharing behaviour, and explore practical implications for it. Knowledge sharing behaviour is a relatively new area of organisational and research interest, especially in the education sector. While there are plenty of stories about

different KM initiatives undertaken by organisations, there are too few systematic studies on knowledge sharing behaviour at the individual level (Dixon 2000; Von Krogh, Ichijo & Nonaka, 2000).

## 1.4 Problem Statement

Knowledge sharing is the behaviour in which an individual disseminates his acquired knowledge to other members within an organization but doing so is critical for assisting in knowledge creation in the organization (Ryu et al. 2003). Knowledge sharing is important to organizational success. The need for knowledge sharing is even more desired in knowledge-intensive organizations (like public universities). Such organisations need to share knowledge held by employees if they are to gain the most from their intellectual capital and compete effectively in the global marketplace (Swart & Kinnie, 2003). Thus, without an understanding of who holds the key knowledge in a university, KM loses all importance. Perhaps the main critical element for a university to understand is that KM is not a single set of abilities or the usage of informational technology, it is rather a collection of ideas and experiences only to be passed on by those who live and understand it (Aronson & McCarthy, 2004).

Steyn (2004) asserted that harnessing the power of knowledge in higher education; management should give the same stress on people, technology, and structures". The balance between them can only be ignored at a great cost: The synergism between the three ingredients add value to the whole process. Organisations, which invest in KM processes, do not have the means to track academic outcomes, fail to take advantage of the benefits of improved innovation, creativity and decision making (Petrides & Nodine, 2003).

Although there are many benefits associated with knowledge sharing (Kautz & Mahnke, 2003), for the most part, its facilitators are unknown (Szulanski, 1996; Wiig, 1997). Moreover, the main studies in the knowledge sharing field have been approved out in Western and South-East Asian countries. Evidently, only few studies have been conducted in Iranian organisations.

Nedjat et al. (2008) conducted a survey in a Middle Eastern developing country and asserted that, as in other universities around the world, many academicians fail to prioritise active strategies of knowledge sharing behaviour. Therefore, if improvements in knowledge sharing behaviour and academic output are linked to actions necessary to achieve Fully Developed Nation status by 2025, it may also be necessary to introduce significant changes in academic processes and motivation policies, employment and promotion criteria of academicians (MSRT, 2010).

There is now a considerable body of research that addresses knowledge sharing behaviour factors and their affect. Prior studies have identified a number of enablers for and barriers to knowledge sharing (e.g., Ardichvili, 2008). Similarly, a theoretical model was developed by Ipe (2003) to integrate factors such as the type of knowledge and motivation to share. In addition, the organisational competences that impact knowledge sharing behaviour, such as structure, human and technical knowledge were examined by Yang and Chen (2007) for the effect on knowledge sharing behaviour(as cited in Choi et al., 2008).

Although advanced IT applications and network systems facilitate employee knowledge sharing, employees are the main driver of knowledge and information sharing in organizations (like public universities) (Bartol & Srivastava2002; Nonaka 1994). Therefore, an important challenge for public and private sector organizations

is to establish an organizational environment. Many researchers and practitioners alike have sought to address the question of what influences drive people to share their knowledge (Bock & Kim, 2002; Buckman, 1998; Connelly & Kelloway, 2003; DeLong & Fahey, 2000; Ford, 2003; Ford & Chan, 2003; Goldstein, 2002; Gupta & Govindarajan, 2000; Haldin Herrgard, 2000; Jalal-Karim et al., 2010; Jarvenpaa & Staples, 2001; Mehra, 2003; Riege 2005; Szulanski, 2000; Tohidi & Mosakhani, 2010; Wasko & Faraj, 2000). Some studies have reported unconvincing results on organisational environment, that is leadership, structure, and reward system and individual factors, in terms of self–efficacy and organisational commitment. Also a few studies tested technological factors, which may influence knowledge sharing behaviour in the organisation (Sondergaard et al., 2007) but the effects of long lasting and omnipresent psychological factors (i.e. personality) on knowledge sharing behaviour have not yet been the subject of thorough empirical tests (Mooradian, Renzl & Matzler, 2006). More specifically, the passion to share knowledge in an open-network environment is affected by interacted factors socially, economically and technically. This study builds on these researches and proposes a model to explain part of the variances in knowledge sharing among academicians.

Additionally, knowledge sharing has been linked in certain studies to performance (e.g., Du, Ai, & Ren, 2007; Schenkel & Teigland, 2008). Few studies, however, empirically investigate the link between knowledge sharing and performance. Earlier studies focus on organisational performance as the sole benefit of knowledge sharing behaviour (Du et al., 2005; Gorelick, & Tantawy-Monsou, 2005; Massey, Ramesh, Montoya & Weiss, 2005), yet there opportunities to consider individual performance as a benefit, especially in higher education institutions.

Besides organisational and individual performance, this study highlights the role of social network ties as significant factors that facilitate the knowledge sharing behaviour practice. According to Cross and Cummings (2004), Considered to be highly important, social network ties cross organisational boundaries, acquire competitive capabilities, and product innovation. Previous studies mainly emphasise the role of other factors like IT (Connelly & Kelloway, 2003), Few studies, however, empirically investigated the effect of social network ties as a moderator.

There is still a gap in the subject. Researchers focusing on their antecedent factors have received little attention. There have been very few studies that investigate the linkage between organisational environment, individual factors, information technology usage, knowledge sharing behaviour, and intellectual output in an integrated framework. My proposition is that the problem may be approached through the socio-technical theory and social network.

## 1.5 Research Objectives

To answer the research questions, the study objectives are set as follows:

a. To investigate the relationships between organisational environment (leadership role, organisational structure, and reward system) and individual variables and explicit knowledge sharing behaviour.

b. To investigate the relationships between organisational environment (leadership role, organisational structure, and reward system) and individual variables and implicit knowledge sharing behaviour.

c. To investigate the relationships between information technology usage and explicit knowledge sharing behaviour.

d. To investigate the relationships between information technology usage and implicit knowledge sharing behaviour

e. To investigate the moderating effect of social network ties in the relationship between knowledge sharing behaviour and intellectual output of academicians.

f. To investigate the knowledge-sharing behaviours influence intellectual output of academicians

## 1.6 Research Questions

This study attempts to answer the following main research questions:

a. Do organisational environment (leadership role, organisational structure, and reward system) and individual variables have a direct relationship with explicit knowledge sharing behaviour?
b. Do organisational environment (leadership role, organisational structure, and reward system) and individual variables have a direct relationship with implicit knowledge sharing behaviour?
c. Does information technology usage have a direct relationship with explicit knowledge sharing behaviour?
d. Does information technology usage have a direct relationship with implicit knowledge sharing behaviour?
e. Do social network ties moderate the relationship between knowledge sharing behaviour and intellectual output of academicians?
f. Do knowledge-sharing behaviours influence intellectual output of academicians?

## 1.7 Scope of the Study

This study will focus is to provide a better understanding of how these enablers (organisational environment, individual factors, and information technology usage) can effect on knowledge sharing behaviour and intellectual output. The selection of these dimensions is based on the literature review. Social technical theory is conceptualised in this study as people's decisions to exchange knowledge. Knowledge sharing behaviour is the focus variable and the variable under study. The intellectual output is the outcome variable. Social network theory will be used to explain the effect of social network ties on relationships between knowledge sharing behaviour and intellectual output. The population for the study is the faculty of top 10 public universities in Iran. Given this scope, the current study is viewed as extremely important since previous studies on knowledge sharing behaviour have not focused on areas of education.

## 1.8 Significance of the Study

Knowledge plays an important role in organisations. In the last decades, managers have realised the competitive advantages of knowledge. Many companies accumulate organisational resources to construct KM systems and promote knowledge sharing behaviour within their organisations. The impact of knowledge has been widely discussed on a managerial level within firms during the past decade. Numerous international business scholars have stated that knowledge is of crucial importance to a firm's survival and success. Institutions of higher education contribute to the knowledge pool as creators of new knowledge and innovation in society and the nation as a whole.

Operating in an ever-changing, complex environment requires modern organisations to heavily depend on research, from commercial businesses and higher education, as a source of competitive advantage. Hence organisations are forced to revisit their strategic planning–and the higher education (HE) sector is not an exception. The HE sector has begun to recognise that strategic planning is necessary in order to respond to and meet the needs of its stakeholders (Streib & Poister, 1990; Smith et al., 1987). Ostar (1989)asserted that universities have experienced changes in technology and demographics, increased competition and costs and funding cuts. Educational administrators have been challenged to predict changes and to create proactive responses that improve practices within college and university campuses. Higher education research can make a significant contribution in such dynamic and demanding circumstances by predicting shifts in matters currently in the public eye and emerging themes (Teichler, 2003). Knowledge sharing behaviour is critical to success in academic institutions but it is often not managed effectively.

If KM is done efficiently, it can lead to better decision-making capabilities, reduced product development cycle time, improved academic and administrative services, and reduced costs. A university can support every part of their mission with the application of KM practices from education to public service and research.

This study examines the relationship between organisational environment such as leadership role, structure, reward systems, and technology (using IT tools) and individual factors related to knowledge sharing behaviour and intellectual output. It further examines the effect of social network ties as a moderator between knowledge sharing behaviour practice and intellectual output.

Alavi and Leidner (2001) suggested research areas for effectual knowledge sharing behaviour from the organisational viewpoint, including the social and

technical factors. This study was based on socio-technical theory and social network theory and examined the impact of internal assets on knowledge sharing behaviour practice. In these theories, knowledge is a valuable and vital resource for competitive advantage. Socio-technical theory links technology and people-oriented processes to knowledge sharing behaviour as part of KM approach (Scarbrough, 2003). There is little study on knowledge sharing behaviour in the educational system and about academicians and intellectual output in terms of knowledge sharing behaviour.

## 1.9 Contribution of the Study

The specific expected theoretical and practical contributions from the study for researchers and higher educational institutions are as follows:

### 1.9.1 Theoretical Contribution

The main contribution of this study is that it is the first to examine knowledge sharing behaviour using existing theories of socio-technical and social network.

1. The study will add to the existing literature on enablers to knowledge sharing behaviour by investigating the effect of three important factors organisational environment, individual factors and technology as significant enablers that motivate institutions to implement knowledge sharing behaviour. The study augments existing research that was focused on investigating the effect of only one of three factors.
2. The study adds to the existing literature on outcomes of knowledge sharing behaviour, by thoroughly analysing intellectual output. This advances on the previous studies that focused only on analysing organisational performance.

3. The study can add to the socio-technical theory by examining the role of organisational environment, individual factors and technology with social network ties as a moderator. Of particular interest to organisations with knowledge workers, is to find the 'best fit' in any given job/work design between the social elements (such as people's psychological and social needs) and technical elements of an organisation. The intention is to uncover ways to open channels of communication and organisational boundaries that conduce sharing of information, learning and knowledge. The study can offer advancements combining two theories: the socio-technical theory and socio-network theory, which discuss how strong and weak ties affect knowledge sharing behaviour to enhance intellectual output. For the social network theory, the study can give empirical evidence to the effect of social network ties on the relationship between knowledge sharing behaviour and intellectual output (academic research performance).

### 1.9.2 Practical Contribution

1. The study reveals the concept, significance and outcome of knowledge sharing behaviour. Thus, it can advance the understanding by academic staff of the state of knowledge sharing behaviour in the higher education and promote collaborative implementation of knowledge sharing behaviour in higher education.
2. The study identifies key enablers for knowledge sharing behaviour. Thus, academic staff and policy makers can better understand the requirements for the implementation of knowledge sharing behaviour and other similar innovative advancements in higher education.

3. The study may help policy makers in developing countries in general, and Iran in particular, in setting appropriate policies and strategies for promoting knowledge sharing behaviour based on collaborative efforts rather than concentrating only on individual organisational efforts, technology or the organisational environment.

## 1.10 Definition of Key Terms

- **Knowledge Sharing Behaviour (KSB):** Knowledge sharing is the behaviour when an individual disseminates his acquired knowledge to other members within an organisation (Ryu et al., 2003).
- **Explicit Knowledge:** Explicit knowledge is regarded as "objective, composed of facts that can be codified into a tangible form like words and graphs, and is separate from individual and social values" (Hislop, 2005, p. 19).
- **Implicit Knowledge:** Implicit knowledge is highly "personal knowledge, sometimes even subconscious knowledge that includes both physical and cognitive frameworks causing it to be difficult or even impossible to express verbally" (Ein-Dor, 2006; Hislop, 2005, p.19).
- **Self-Efficacy:** Self-efficacy is defined is as the opinions of individuals concerning their capabilities to arrange and implement courses of action that achieve specific levels of performance (Bandura, 1986).
- **Organisational Commitment:** Organisational commitment is "the relative strength of an individual's identification with and involvement in a particular organisation" (Mowday et al., 1979, p.226).

- **Reward Systems:** Extrinsic rewards can range from financial incentives such as salary and bonuses to non-financial rewards such as promotions and job security (Davenport & Prusak, 1997).
    - Intrinsic rewards refer to willingness to engage in an activity out of personal interest, pleasure or the satisfaction derived from such an experience (Deci, 1975).
- **Organisational Structure:**
    - Centralisation refers to "the degree to which power and authority are concentrated at the organisation's higher levels" (Kim & Lim, 2006, P.373).
    - Formalisation refers to the degree to which are manifest in written documents regarding procedures, job descriptions, regulations, and policy manuals" (Kim & Lim, 2006, P.374).
- **Leadership:** Effective leaders typically adopt facilitation and mentoring roles when interacting with group members, aiming to foster social relationships.
    - Facilitators encourage group interaction and consensus to minimise dissent and develop points of common ground. They promote member involvement in problem diagnosis and solving and develop organisational assets.
    - Mentors guide group members to make appropriate decisions with regard to skill development and behaviour (Rost, 1993).
- **Intellectual Output:** Research and scholarship are typically measured in terms of quantity and quality to assess overall academic achievement and performance. 1) Productivity, Higher education institutions normally have established measures for productivity, encompassing article and paper

submissions, frequency of presentations, performances, publications, and funding proposals (Braskamp & Ory, 1994).

- **Social Network Ties:** Social network ties indicate the strength of colleague or member relationships as a combination of the emotional intensity, the length of time, the confidence and the reciprocal support characterising the tie (Chae et al., 2005).

## 1.11 Organisation of Remaining Chapters

Chapter One introduces the study. Chapter Two is the literature review. Chapter Three establishes a theoretical framework and shows the relationship between and among variables and hypotheses and focuses on the methodology of the study, including the research design, variables, measures, population and sampling method and data collection. Chapter Four presents the data analysis and results of the study. Chapter Five discusses findings and draws conclusions.