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Knowledge Sharing Practice in Public Service College of Oromia (PSCO)

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Abstract:

Many scholars have debated on the meaning of both knowledge and knowledge sharing for many decades. For the sake of this research, knowledge is all facts, feelings or experiences known by a person or group of people (Collins English Dictionary, 2009). Basically, organizations can obtain knowledge from two sources. The first is through acquisition and the second source of knowledge is innovation.

All knowledge (whether externally acquired or internally created) should be shared effectively to create a learning organization. Generally, the basic preposition behind this research is that if the given organization is able to promote these preconditions of effective knowledge sharing, then there is no doubt the concerned organization can exploit different comparative and competitive advantages.

Based on the above concepts, the investigator has conducted investigation to know what the Knowledge Sharing Practice in Public Service College of Roomier looks like.

To exhaust the research, he adopted a concurrent mixed research design approach where both qualitative and quantitative techniques will be used. Questioners, face-to-face interview, observations and focus group interview were used as a data collecting instruments. Both probabilistic and non-probabilistic approaches were used to take samples from the sample frame. To rigorously analyze the collected data, the researcher implemented frequency distribution tables, mean, variance, standard deviation, and correlation. The study is limited to Public Service College of Oromia(PSCO).

1. Introduction

1.1. Background of the Study

Although many scholars debated and are on the way of debating on the issue of knowledge for many years, there still is no consensus on the definition of the term knowledge. For the sake of this research, knowledge is all the information, facts, truths, and principles learned throughout the life of knowledge workers (Cliff F., Nancy R., 2004). According to the description of Nonika (1991), knowledge is the fuel for innovation. He argues that companies are more like living organisms. As living organism grow and develop when they get adequate food, organizations will also grow and develop when they get adequate knowledge as a fuel. To have adequate knowledge, there should be effective mechanisms to create and share knowledge.

➤ Generally, no knowledge sharing means the concerned organization will automatically decline even to death.

Moreover, many scholars advocate that our world today has entered in to the knowledge era. Savage (1995), for example, identified three waves that our world has faced. The first wave was the Agricultural Age with wealth defined as ownership of land. In this case, the success of organizations is dependent up on to which extent organizations and/or individuals are owners of property especially land. In the second wave (the Industrial Age); wealth was based on ownership of Capital, i.e. factories. In this regard, the more organizations are owner of factories, the more their overall organizational success, and vice-versa. In the last wave (Knowledge Age), the organizational wealth is dependent up on the overall capabilities of organizations. In this regarded the knowledge, skill, and competence possessed by the given organization determine the overall success of the organization.

However, how knowledge sharing comes to existence? Throughout the history of knowledge sharing, oral communication has been used as a channel of sharing different experiences and practices among people. People have passed knowledge form one generation to the next using oral conversations. Through time, these conversations were gradually changed in to the written documents and these in turn, accelerate the importance of knowledge sharing both internally and externally. Historically, the first and oldest written recorded stories are concerned with religion, politics, and culture societies (<http://www.systems-thinking.org/kngmt/kngmt.htm.com>).

Many scholars have also tried their best to identify the first knowledge storage centres in the history of human civilization. But, although there is still a confusion regarding this 1st knowledge holding centre/s among different scholars, many of them agreed that the one began by the Egyptian empire began around 3,000 B.C. (Cliff, F. and Nancy, R., 2002).

Additionally, researchers agree that many thinkers were undertook dialogue on the issue of knowledge in Alexandria in the mid 15th century and this led to many significant advances in knowledge sharing practices. To confirm this idea they cite the work of the known librarian in the same century called Callimachus of Cyrene. He is well acknowledged in creating the first subject catalogue for 120,000 scrolls of the library's holdings, dividing all knowledge into eight major categories. These are oratory, history, laws,

philosophy, medicine, lyric poetry, tragedy and miscellany. Though it was by no means comprehensive, this library was the first attempt of indexing different records.

➤ This is the beginning for today's online databases of books and information (Cliff, F. and Nancy, R.,2002).

Moreover, in 400?-1468, a German author and pioneer, Gutenberg, began to use the first type-writer and printer, and scholars identify this pioneer as the first European inventor to print with hand-set type cast in mells Redmond. After Gutenberg's contribution, the printing of books was accelerated so rapidly and in the early 15th century, there were more than 1,000 print shops in Europe (Maier, R., 2007).

It is in such a way that human being has developed itself to its today's status of knowledge sharing, beginning with cave-painting of our ancestors. Thanks to human mind, at the doorway to this 20th century, the world is able to reach a considerable accumulation and sharing of human experience and traditions (Maier, R., 2007).

- These all laid the foundation for the new practice of knowledge management and sharing which evolved in 1990to support knowledge workers in storing and sharing knowledge with one another (Maier, R., 2007).
- This all can give us a hint about the evolution of knowledge creation and knowledge sharing trends in the history of human civilization.

1.2. Background of the Organization

As it is indicated in the brochure and long-term strategic plan of the college, Public Service College of Oromia (PSCO) is a regional capacity building institution established in 1976E.C. to capacitate the human resource aspect of the region through education, training, consultancy and research activities. Its head office is situated in Addis Ababa. The college has begun its education, training, research and consultancy program in the same year.

When this college began its work in (1996), it has developed its own missions, visions and core values. While its mission is sustaining the regionalre form program by producing competent civil servants through delivering reform led training and education, its vision is becoming a competent center of excellence in training and education in East Africa (A five year strategic plan of the college, 2003).

To achieve this mission and vision the college works within the sphere of core values such as: respect for customer, team work, high commitment, highest ethical standards, result oriented behaviors, partnership, integrity, innovativeness, creative management, motivation, multilateral communication and equity(Strategic plan of the college, 2003).

Generally, the college has four basic thematic areas: education, training, consultancy and research. These thematic activities are conducted by two core processes (education delivery core process and training, consultancy and research core process) and two supportive staffs (HR supportive staff and finance and purchasing supportive staffs). There are many teams under each core and supportive processes and this in turn leads to team based organization structure.

The college also undertakes many transactions daily. For the success of these different transactions, it continuously adopts different tacit and explicit knowledge. According to the idea forwarded by different scholars regarding knowledge and knowledge sharing, organizations should be effective in its knowledge flow to be effective in its daily business transactions (Karl, M. et.al.2004 & Susan, E. J., et.al. 2003).

But, no one still knows what the knowledge sharing practice of the college looks like. No assessment is conducted in this area. This is why the researcher takes the initiative to conduct descriptive research to examine what the Knowledge Sharing Practice in Public Service College of Oromia (PSCO) looks like.

Generally, the total profile of workers in this college looks like the following:

No	Description	Academic Level						Sex			Percentage		
		Phd	Graduate	Under Graduate	Diploma/Level	Below 12 th And/Or 10 th Grade	Total	M	F	Total	M	F	T
	Instructors	-	8	27	-	-	35	33	2	35	94	6	100
	Trainers, Consultants And Researchers(T,R&C)	-	4	11	-	-	15	15	-	15	100	0	100
	Director	-	1	-	-	-	1	1	-	1	-	-	-
4.	Process Owners (At Vice-Director Level)	-	3	-	-	-	3	3	-	3	-	-	-
5.	Practitioners& Non-Practitioners	-	1	11	58	28	98	66	32	98	67	33	100
6.	Week End and Distance Program Coordinators	-	-	-	8	13	21	15	6	21	72	28	100
	Grand Total						173			173			100

Table 1

Source: Human resource administration supportive staff of the college

1.3. Statement of the Problem

Many knowledge management scholars advice that for effective knowledge sharing to exist, there should be active organizational routines, effective reward system, effective employee assignment policy, participatory leadership styles, latest information technology infrastructures, mechanisms of converting tacit knowledge in to explicit knowledge and/or explicit knowledge in to tacit knowledge, and less career Plateauing(Bergeron, B., 2003; Brown & Duguid, 1991; Morrison & Brantner, 1992, and Greer , R. C.2001)

In contrary to these advices, Public Service College of Oromia is not seen strategically working to minimize factors that decelerate its overall knowledge sharing trends. Although the college has produced a five-year strategic plan, Knowledge is not managed in a planned manner. This lack of plan leads the college to create and share knowledge randomly.

Not only lack of knowledge sharing plan, there is also employee misplacements in some teams. As I have practically observed when I worked there both as an instructor and a member of education delivery core process, I learned that employees come to some position/job and leave position/job most of the time randomly. Employees who have diploma in law, for example, are assigned as data encoders and store keeper in deferent departments/teams. Instructors who have masters' degree in rural development are still teaching in accounting and human resource department. Among seven library workers, no one have diploma or degree in library related areas. Although the head of the library have diploma in library science & first degree in law, all others are at diploma level in Human Resource Management, accounting and Agricultural Business Management (my observation and employee assignment document of the college).

I have had also a chance to hold discussion regarding the knowledge exchange trend of the college with different instructors, trainers, and practitioners for many times because of my work relationship with them. They are frequently heard complaining the information exchange mechanism of the college. From these different exposures, I again come to understand that workers are not in a position to get relevant information at the right time because of lack of active organizational routines, reward system, assignment policies, and adequate Information Technology infrastructures (Quarter/semiannual / annual reports and my personal observation).

Generally, I have a personal presumption that much knowledge in Public Service College of Oromia remains buried in the mind of the knowledge workers because of the above problems.

After understanding these all challenges that the college has faced and is facing in its knowledge sharing practice, I decided to investigate and then describe to what extent the college is effective in its knowledge sharing practice.

1.4. Theoretical Frame Work

Many scholars have said much on the very term knowledge. Most of them critically examine the term by dividing it in to two basic categories: tacit knowledge and explicit knowledge. While tacit knowledge is the knowledge hidden in the mind of the knowledge workers (accessible only to that man/woman), explicit knowledge is the knowledge that is coded and accessible to any man. To be benefited more from this different knowledge, organizations should have effective channel of knowledge circulation among different stakeholders. These knowledge sharing practice, in turn, depend up on many factors. For the purpose of this paper, the following dimensions are taken in to consideration.

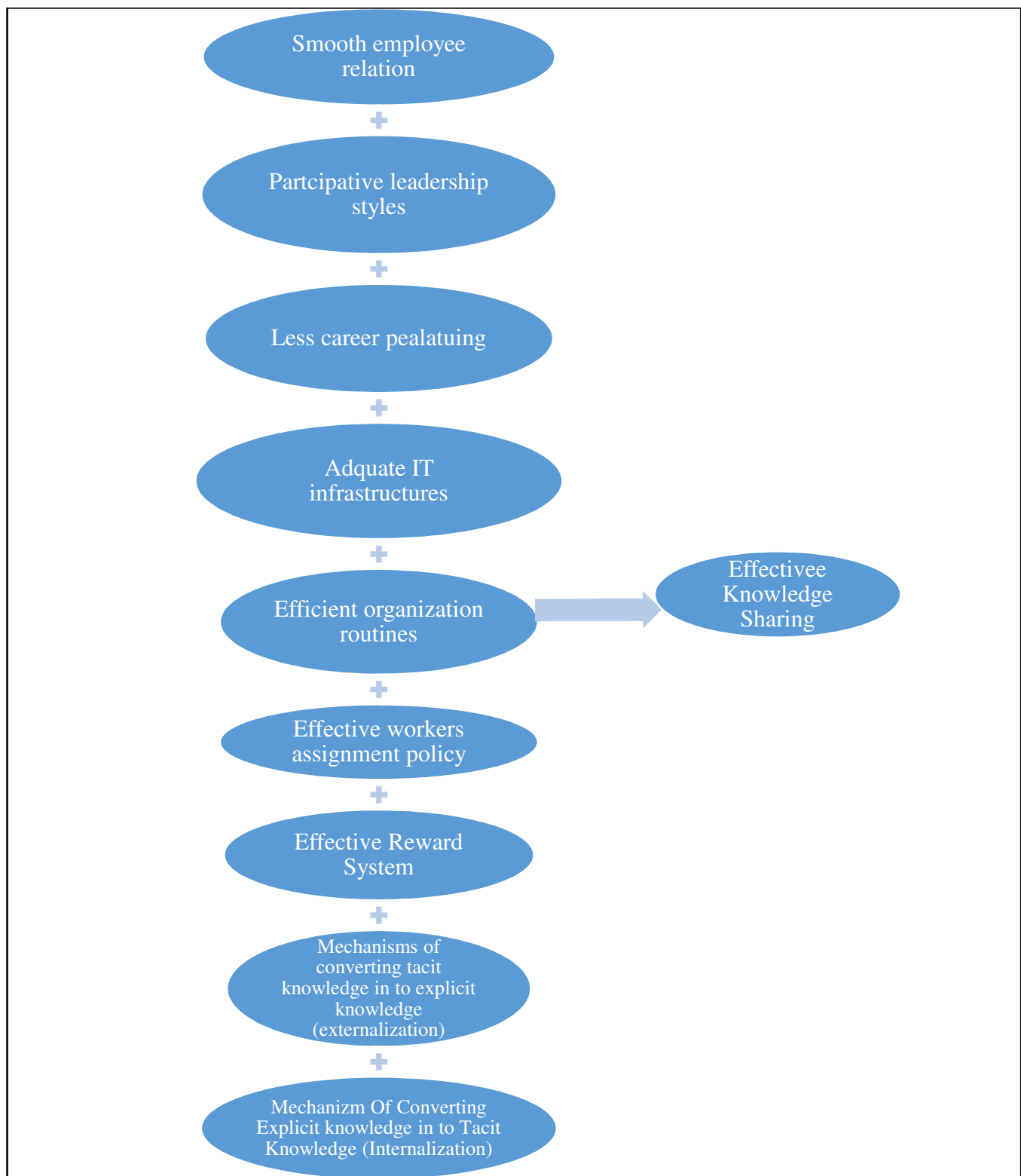


Figure 1: Dimensios of Knowledge Management

Source: My own construct based on the argument of authors such as:

Bergeron, B.(2003), Nonica and Bennet. (1998); Karl, M. (2004); Nonica and Takeuchi. (1995); Brown & Duguid, 1991; and Susan, et.al, (2003)

1.5. Research Questions

In this research, the paper has answered three basic research questions such as:

1. What does knowledge sharing practice in Public Service College of Oromia looks like?
2. What factors affect knowledge sharing practice?
3. What success and challenges the college faced and is facing in itsknowledge sharing practice?

1.6. Objectives

The general objective of the paper was to investigate and describe the knowledge sharing practice in Public Service College of Oromia (PSCO). More specifically, the paper focused on:

1. Describing the knowledge sharing practice in Public Service College of Oromia.
2. Investigating and describing factors that affect knowledge sharing practice in the college.
3. Investigating and describing the success & challenges the college faced and is facing during knowledge sharing.

1.7. Significance of the Research

The absence of adequate researches concerning knowledge sharing practice in Ethiopian universities/colleges in general and in Public Service College of Oromia in particular makes the contribution of this paper unique and worthwhile. This research, hopefully, will provide a valuable contribution such as:

- a) Opening a new way for anyone who is interested to conduct further research on knowledge sharing area
- b) Giving additional insight about the knowledge-sharing trend of the college for any interested readers
- c) Create understanding among different stakeholders of the college.
- d) Lastly, it can aid administrators of the college to take remedial actions based on the recommendations provided.

1.8. Scope of the Research

This research paper was conducted in Public Service College of Oromia (PSCO). During the investigation, the investigator put a due attention on key areas such as: what the knowledge sharing practice of the college looks like; factors that affect knowledge sharing practice, and success and challenge it faced while sharing knowledge. All knowledge workers in this very college were taken as a targeted population. For the sake of this paper, the definition given by Drucker, P. (1993) was used. According to this scholar, knowledge workers are workers who have gained some competence level from universities and colleges. Based on this, the targeted populations are all knowledge workers who are at least at diploma level.

1.9. Limitation

While undertaking the research, there was time pressure. The overall finding of this investigation is limited to the general knowledge flow (multidirectional) with in PSCO.

1.10. Paper Organization

Generally, the paper contains five different chapters. The first chapter deals with introduction. Literature review is handled under chapter two. Chapter three incorporates research design and methodologies. The fourth chapter includes data presentation, analysis, discussions and interpretations. The fifth chapter includes major findings, conclusions and recommendations. Both references and appendixes are treated under separate sections.

2. Literature Review

- Do not believe what you have heard.
- Do not believe in tradition because it is handed down many generations.
- Do not believe in anything that has been spoken of many times.
- Do not believe because the written statements come from some old sage.
- Do not believe in conjecture.
- Do not believe in authority, teachers, or elders.

However, after careful observation and analysis, when it agrees with reason and it will benefit one and all, then accept it and live by it.

Buddha (cited from Bergeron, B., 2003)

2.1. Overview of Knowledge and Knowledge Sharing

Although there are many definitions of knowledge, the one used in this research is that, Knowledge comprises all cognitive expectancies & observations that have been meaningfully organized, accumulated and embedded in a context through experience, communication, or inference that an individual or organizational actor uses to interpret situations and to generate activities, behaviour and solutions no matter whether these expectancies are rational or used intentionally (Maier, R., 2007).

According to Nonica, B. (1998), Knowledge is experiences and/or information that can be communicated or shared. Knowledge can also be thought of as the body of understandings, generalizations, and abstractions that we carry with us on a permanent or semi-permanent basis and apply to interpret and manage the world around.

➤ Here, knowledge is considered as the collection of mental units of all kinds that provides us with understanding and insights According to the argument of Bergeron, B. (2003), the history of knowledge creation and knowledge, sharing goes many years back to the civilization of Babylonians, Egyptians, and Romans.

In Mesopotamia, about 5,000 year ago, people began to lose track of the thousands of baked-clay tablets that are used to record legal contracts, tax assessment documents, sales documents, and legal records. The solution they forwarded was to start the first institution dedicated to storing and sharing these records, the library (Bergeron, B. 2003). Gradually, through the advent of different large and

small scale industries especially in 19th century, the concept of apprentice, apparent ship, training centres and universities comes to existence to make the concept of knowledge and knowledge sharing more formal (Bergeron, B. 2003).

2.2. Types of Knowledge

This section deals with different types of knowledge. Different knowledge theorists argue that different types of knowledge exists. These are tacit knowledge and explicit knowledge. Tacit knowledge represents internalized knowledge that an individual may not be consciously aware of. At the opposite, explicit knowledge represents knowledge that the individual holds consciously in mental focus, in a form that can easily be communicated to others (Karl, M. 2004).

Knowledge can also be divided into internal and external types. *Internal knowledge* may be defined as information that is relevant, actionable and at least partially based on experience (Bergeron, B. 2003). Knowledge can be external. External knowledge is acquired knowledge that does not have to be newly created, and is new only to the organization.

- The most direct and often most effective way to acquire knowledge is to buy it, that is, to buy an organization or hire individuals who have it (Karl M., 2007).

2.3. Knowledge Management Process

The concept of knowledge management is raised here because it has a strong impact on the practice of knowledge sharing. Many scholars argue that knowledge management involves many step-by-step activities. Among these, those proposed by Bergeron. (2003) is considered here.

According to him, the stages of knowledge management process involve:

- i. Knowledge creation or acquisition
- ii. Knowledge modification
- iii. Use
- iv. Archiving
- v. Transfer
- vi. Translation/Repurposing
- vii. User Access
- viii. Disposal

2.3.1. Creation and /or Acquisition

In the creation and /or acquisition phase of the Knowledge Management life cycle, information is authored internally by knowledge workers, acquired through outsourcing, or purchased from an outside source. This phase starts with a requirement specification that provides the author or acquiring agent with a description of the information needed (Bergeron, B. 2003)

2.3.2. Knowledge Modification

In the modification phase of Knowledge Management, information is modified to suit the immediate and likely future needs of knowledge workers and management. The primary issues related to the modification phase of the Knowledge Management life cycle include moral rights, the degree of author involvement, assigning responsibility for the sign-off process, making decisions as to the reversibility of modifications to information and verifying ownership of information (Bergeron, B. 2003).

2.3.3. Use

In this phase of Knowledge Management life cycle, information is employed for some useful purpose. The range of potential uses for information is virtually unlimited, and depends on the organization, the needs, and activities of knowledge workers within the organization (Bergeron, B. 2003).

2.3.4. Knowledge Archiving

Archiving information involves storing it in a form and format that will survive the elements and time and still be accessible and usable by knowledge workers in the organization.

Archiving can involve printing, making electronic copies in several formats on a variety of media, or even outsourcing to an off-site storage facility accessed over the Internet (Bergeron, B. 2003).

2.3.5. Knowledge Transfer

The transfer or communications of information from one person or place to another is a prerequisite for an efficient Knowledge Management system. The key issues in the transfer phase of the Knowledge Management life cycle include cost, security, and transfer time. All participants in the knowledge transfer process should take a due attention to the direct and indirect costs of transferring knowledge (Bergeron, B. 2003).

2.3.4. Translation/Repurposing

In the translation/repurposing phase of the Knowledge Management life cycle, information is translated from its original form into a form more suitable for a new purpose. For example, a table of numerical data may be transformed into three-dimensional graphs; a sound file might be translated into a graphic or sonogram; or the data in the table might be condensed into a concise statistical summary (Bergeron, B., 2003).

2.3.5. Knowledge Access

A characteristic of most Knowledge Management systems is information hiding, in a sense that not all information in the corporation is openly available to everyone. Typically, limited access to the information is provided to knowledge workers as a function of their position in the company and their need to know (Bergeron, B., 2003).

2.3.6. Knowledge Disposal

Although all information collected and generated in the course of conducting business may be valuable to someone at some point in the future, from a practical perspective, information with limited future value is discarded to save space and reduce overhead. The method of identifying what information to save and what to destroy should follow corporate policy as well as governmental rules. The primary issues surround the destruction of information in the disposal phase of the Knowledge Management life cycle are cost, the most appropriate level of security, assessing the value of information, and a variety of enabling technologies (Bergeron, B., 2003).

- To what extent the organization is effective in all the above listed activities has an impact on knowledge sharing practices of the concerned organization. This means, the more they are effective in these processes the more they are effective in knowledge sharing and vice-versa.

2.4. Knowledge Worker

A knowledge worker is someone who is employed because of his or her knowledge of a subject matter, rather than ability to perform manual labour. They are individuals who are valued for their ability to act and communicate with knowledge within a specific subject area (Bergeron, B., 2003).

They are expected to advance the overall understanding of that subject through focused analysis, design, and/or development of the concerned subject matter. They use research skills to define problems and to identify alternatives. Fuelled by their expertise and insight, they work to solve problems, in an effort to influence company decisions, priorities, and strategies (Bergeron, B., 2003).

Generally, knowledge workers are found across a variety of professionals like IT technologists, teachers, librarians, lawyers, architects, physicians, nurses, engineers, scientists and others (Bergeron, B., 2003). According to Drucker, P. (1993), knowledge workers are individuals who have high level of education and specialist skills combined with the ability to apply these skills to identify and solve problems.

2.5. Knowledge Sharing Modes

This part deals with converting tacit knowledge in to explicit knowledge and/or explicit knowledge in to tacit knowledge. Here, many scholars raised the question that "How different types of knowledge might be shared among different stakeholders." According to Nonaka and Takeuchi (1995), there are multiple modes of knowledge sharing, including:

- i. Socialization (sharing tacit knowledge by sharing experiences),
- ii. Externalization (translating tacit knowledge into explicit knowledge using metaphors, models, and rules),
- iii. Combination (systematizing explicit concepts into a knowledge system by analyzing, categorizing, and repurposing information), and
- iv. Internalization (converting explicit knowledge into tacit knowledge through simulations, action learning, and on-the- job experiences)

Additionally, many knowledge management literatures support the idea that most knowledge (both explicit and tacit) can be shared informally through job experiences, relationships with peers, relationships customers, relationships with managers and mentors (Brown & Duguid, 1991; Morrison & Brantner, 1992).

2.6. Forbidden and Non-Forbidden Knowledge

According to Johnson D.G (1999.), Schrage, B.et al.(2003.) and www.ejkm.com ISSN 1479-4411 87, (2008), Knowledge can sometimes be forbidden. Forbidden knowledge, different from secret knowledge, is used to describe forbidden books or other information to which access is restricted or deprecated for political or religious reasons. Forbidden knowledge is commonly not secret; rather, a society or various institutions will use for some hidden Agendas.

2.7. Externalization and Internalization

Polanyi A. (1966) further discussed both externalizations and internalizations. According to him, externalization makes knowledge accessible to users and internalization makes users to understand the concerned knowledge in detail. Externalization turns tacit knowledge into explicit knowledge.

The concept of externalization becomes more dominant in knowledge management discipline after the postulate of Polanyi, which says, "we know more than we can tell" (Polanyi, A., 1966).

2.8. Knowledge Deletion & Archiving

This concept is about disposing passive knowledge strategically by using different planned tactics. Although the trend of many organizations shows that they dispose the knowledge they think passive randomly, this is the dangerous way of disposing knowledge because it may unlawfully and/or unethically hurt the one who should not be hurt and again may unlawfully and/or unethically benefit the one who should not be benefited (Monika, 1991).

Generally, irrelevant or outdated knowledge has to be systematically removed from the organization's active knowledge base, such as outdated reports, dead links or obsolete themes and topics and other similar knowledge. According to the recommendation of *Bergeron, M (2007)*, the most expensive meekness of deposing knowledge is deleting and archiving.

The selection of the knowledge to be deleted or archived is an important task as otherwise the organizational knowledge base is cluttered with outdated or even wrong documents, links or structures making it less efficient for employees to retrieve the knowledge needed (*Bergeron, M., 2007*).

2.9. Factors that Affect Knowledge Sharing

2.9.1. Technology as Enablers of Knowledge Sharing

The technologies available to enable the Knowledge sharing practice extend from low-technological tools, such as pen and paper to high-technology expert systems and virtual reality displays (*Bergeron, B., 2003*). Details of the required technologies are given in the following table:

No	Description	Primary enabling technologies
1.	Knowledge modification	<ul style="list-style-type: none"> • authoring tools • decision support tools • infrastructure
2.	Knowledge use	<ul style="list-style-type: none"> • visualization tools • decision support tools • simulations • application-specific programs • database tools • pattern matching • infrastructure • web tools
3.	Knowledge transfer	<ul style="list-style-type: none"> • groupware • infrastructure
4.	Translation/Repurposing	<ul style="list-style-type: none"> • decision support tools • simulations • database tools • infrastructure
5.	Access	<ul style="list-style-type: none"> • Interface tools • database tools • pattern matching • groupware

Table 2

Table TE; Enablers of knowledge sharing (TE)

2.9.2. Knowledge Worker Recognition and Knowledge Sharing

Part of the work in developing a loyal and dedicated workforce is establishing recognition and reward systems to encouraging knowledge worker participation in Knowledge sharing initiatives. Workers are not motivated only by money.

Even, those primarily motivated by money usually can be encouraged to provide more value to the company by formally recognizing their contribution to the company's bottom line. Whenever they receive recognition, they argue that workers are strongly motivated to take and give knowledge in many directions (*Bergeron, B., 2003*)

2.9.3. Financial Rewards and Knowledge Sharing

According to the insight of *Frese et al. (1999)*, and *Tesluk et al (1997)*, financial reward encourages people to share the knowledge they possess in their mind. Their advice is that financial reward is a best instrument by which organizations can exploit the knowledge in the mind of the knowledge workers. Based on the argument of *Eisenberger &Selbst (1994)*, if individuals are to be encouraged to share novel and potentially useful ideas with the organization, rewards should be offered that convey the message that all ideas are valued and that the organization is not interested in evaluating or controlling creativity.

Furthermore, *John &Son (2003)* also added that offering nonfinancial rewards strongly facilitate idea sharing among stakeholders in the organization. In his study, *Tampoe (1993)* also identified four key motivators for knowledge workers. These are personal growth, occupational autonomy, task achievement quality and relevance to the organization, money rewards

2.9.4. Organizational Structure and Knowledge Sharing

Many scholars also argue that organization structure can accelerate and/or decelerate the degree of knowledge sharing practice in the given organization. The general principle is that the more the organization structure is web based and/or team based, the more the degree of knowledge sharing and vice versa (*Deogratias, H., 2010*).

According to the view of Meintick, B. (2006), companies must be able to make their structure flat so that workers can communicate freely to each other. This facilitated the knowledge sharing process of the organization (*Meintick, B. 2006*).

2.9.5. Employee Relation and Knowledge Sharing

According to Armstrong, M. (2010), the starting point of the employment relationship is an undertaking by an employee to provide skill and effort to the employer in return for which the employer provides the employee with a salary or a wage. Accordingly, employees are responsible to share the knowledge they possess for the overall effectiveness of the organization. For this to occur there should be smooth employment relationship among key stakeholders of the organization.

- Whenever the either side is not in a position to discharge its legal and/or implied responsibilities concerning employment relation, the constructive relationships among key stakeholders will be impeded.
- This in turn leads to the downturn of knowledge sharing practice that is a key factor in creating a learning organization; enmity spirit will develop in that organization and then no one is willing to give and/or take active knowledge from one another.
- This all also implies to what extent employment relation contributes to the successfulness of knowledge sharing practice in almost all organizations.

He also advised that particularly, HR specialists should contribute to the development of a positive and productive employment relationship by undertaking in advance effective recruitment interviews; conducting induction/orientation; encouraging the development of performance management; encouraging the use of personal development plan, learning and development programmes; training; adopting a general policy of transparency; effective grievance handling procedures; policy of equal opportunities; on time promotion; ensuring equity, fairness and consistency in rewarding knowledge workers (Armstrong, M., 2006,).

2.9.6. Employee Assignment and Knowledge Sharing

The way employees are assigned to some position/position has its own positive and/or negative impact on the effectiveness of knowledge sharing. According to scholars, workers should be placed according to their field of specialization. *Ulrich, D. (2009)*, for example, argued that employee assignment is very important as those of recruitment and selection.

He used employee assignment and employee placement interchangeably. For him, employee placement (employee assignment) is fitting a person to the right job. It is about placing individuals with the proper KSA on the proper position. The basic theme here is that placing proper workers on the proper position saves their knowledge from remaining buried in the mind of employees (*Ulrich, D., 2009*).

2.9.7. Leadership vs Knowledge Sharing

The commitment of leaders (at different levels) also plays a pervasive role in accelerating and/or decelerating knowledge sharing trends. The way they behave, the fairness they exercise while leading, the way they approach individuals and/or teams, and the general leadership styles they introduce have an impact on knowledge sharing practice.

According to the article produced by *Rao, M. (2005)*, top management must themselves embrace KS culture, practices, and tools. They must demonstrate that they have internalized the KS message. This must be communicated with external audiences as well.

2.9.8. Knowledge Management and Organizational Routines

Organizational routines are any formal and informal trends of organizations that accelerate and/or decelerate knowledge creation and sharing practices. They include procedures, rules, regulations, daily programs, and schedules that are vital to the day- to- day activities of the business. They can also be viewed as mechanisms for knowledge creation, utilization, and storage. Generally, in order for an organization to have the best chance for success at knowledge sharing, there should be active routines in the organizations (*Feldman and Pentlands, 2003*).

- These can operate at the individual level, among groups of individuals, across an entire organization, and inter-organizationally. The operation of these routines can result in the accomplishment of a significant portion of the organization's activities particularly by accelerating knowledge sharing.

2.10. General Barriers for Knowledge Sharing

Knowledge sharing is not free of barriers. According to the argument of *Bendt (2000)*, learning organizations can face tremendous obstacles during their knowledge sharing practice. Among them, the most expensive ones are: lacking willingness for sharing knowledge, lacking willingness for absorption, complicated employment relations, missing common language, misinterpreting or distortion of information or knowledge, anti-cultural philosophies, passive leaders, poor organizational routines, lack or work autonomy, and others (*Andreas, S. and Claudia, T. 2010*).

3. Research Design and Methodology

Generally, this section incorporates various mechanisms and techniques that helped the researcher address the predetermined research questions and objectives in a proper manner. Among them, the most important ones are design of the research, data gathering tools, data measurement, measuring reliability & and validity, sample design and sample analysis.

3.1. Design of the Research

This research is both qualitative) and quantitative in nature. Concurrent mixed approach technique was used to exhaust the overall investigation. It also has the nature of both case and surveys study and designed in a manner that helps to correlate different dependent and independent variables.

3.2. Data Gathering Tools

To exhaust the research, in-depth face-to-face interview, structured questionnaires, and structured observation were being adopted to gather primary data. To support this primary data, secondary data was also gathered from different books, brochures, and strategic plan of the college.

3.3. Data Measurements

Generally, both nominal scales and a five-point scale were being adopted to measure both qualitative and quantitative data respectively. Details of the measurement are given below.

No	Variables measured	Nature of data collected	Data gathering Instruments	The way data was measured
1.	Participatory leader Leadership styles Vs knowledge sharing	Qualitative and Quantitative	Semi-structured face-to-face interview and questionnaire	nominal and interval scales
2.	Reward package Vs knowledge sharing	Qualitative and Quantitative	Semi-structured face-to-face interview and questionnaire	nominal and interval scales
3.	Team based organization structure Vs knowledge sharing	Qualitative and Quantitative	Semi-structured face-to-face interview and questionnaire	nominal and interval scales
4.	Employee assignment policies Vs knowledge sharing	Qualitative and Quantitative	Semi-structured face-to-face interview and questionnaire	nominal and interval scales
5.	Organizational routines Vs knowledge sharing	Qualitative and Quantitative	Semi-structured face-to-face interview and questionnaire	nominal and interval scales
6.	Knowledge editing and disposing trends	Qualitative and Quantitative	Semi-structured face-to-face interview and questionnaire	nominal and interval scales
7.	Forbidden knowledge	Qualitative and quantitative	Semi-structured face-to-face interview and questioner	Nominal and interval scales
8.	Employee relationships Vs knowledge sharing	Qualitative and quantitative	Semi-structured face-to-face interview and questioner	Nominal and interval scales
9.	Technological infrastructure Vs knowledge sharing	Qualitative and quantitative	Semi-structured face-to-face interview and questioner	Nominal and interval scales
10.	Employee positioning Vs knowledge sharing	Qualitative and quantitative	Semi-structured face-to-face interview and questioner	Nominal and interval scales
11.	The overall success faced during knowledge sharing	Qualitative and quantitative	Semi-structured face-to-face interview and questioner	Nominal scales and interval scale
12.	The overall challenges faced during knowledge sharing	Qualitative and quantitative	Semi-structured face-to-face interview and questioner	Nominal scales and interval scale

Table 3

Table DM: Data measurements

Source: My own construct based on different research, statistics and knowledge management books, and articles.

3.4. Measurement of Reliability and Validity

Regarding reliability, errors was strategically reduced by making the measuring instrument more standardized. Data was also entered in to the database using the double entry system. According to David, R. Et al (1999), double entry system is one way of reducing statistical errors particularly at the data entry level and this in turn increase the reliability of the finding.

To check validity, content validity ratio, which is developed by developed by C. H. Lawshe (2003), was used. Accordingly, eight subject matter expert raters (SMEs) were being chosen to judge to what extent the question items are able to measure the target they have to measure. A three point Likert scale ('essential,' 'useful, but not essential,' or 'not necessary') was given to these SME.

Among them, five of them said essential; two of them said use full; and one said not essential.

$$\text{Content validity (CVR)} = \frac{(n_e - \frac{N}{2})}{(\frac{N}{2})}$$

Accordingly, the content validity ratio was computed as follows:

Where,

CVR = content validity ratio, n_e = number of Subject Matter Expert (SME) panellists indicating "essential," N = total number of SME panellists.

$$\text{CVR} = \frac{5 - \frac{8}{2}}{\frac{8}{2}} = \frac{1}{4} = 0.2$$

However, according to the scholar, this formula yields values, which range from +1 to -1; and positive values indicate that at least half the SMEs rated the item as essential.

Therefore, the designed questioners are valid to measure what it has to measure.

3.5. Sample Design

In this research, both probabilistic and non-probabilistic sampling techniques were adopted to collect quantitative and qualitative data respectively. Among probabilistic sampling technique, stratified method was adopted. The overall knowledge workers were divided in to three strata. These are practitioners, instructors, and TR&C.

Then, Samples were selected from reach and every stratum proportionally. In the first place, the total sample size was determined by the following formula:

$$N = \frac{(z_2)^2 pq}{E^2}$$

Where:

Z= is also called Z score and is a measure of the relative location of the item in a data set

z_2 = the critical value of z and are usually predetermined

E= tolerable error and is usually given

P= the value of population proportion (Gupta, 1989)

In this research case, the estimated maximum allowable error was 5%. By using the empirical rule developed by Anderson S. W. (1999.), the population proportion in PSCO was assumed to be 95%. Critical value of population proportion (z_2) for 5% tolerable error and 95% population proportion according to this rule is assumed to be 1.96. Then, the total sample size was determined accordingly.

$$N = \frac{(z_2)^2 pq}{E^2}$$

$$N = \frac{(1.96)^2 (0.95) (0.05)}{(0.05)^2}$$

$$N = \frac{0.182476}{0.0025} =$$

$$N = 72.9904$$

$$N = 73 \text{ individuals}$$

Therefore, the total sample size to be selected from the whole worker (124) was 73. This is about 58% of the whole knowledge workers in the college. The next step is to determine the sample size for each stratum. In this case, the ratio of each stratum to the whole population was determined first. Then, the ratio of each stratum will be multiplied by the total sample size. This can be computed as follows:

No	Descriptions	Total number of each strata	Ratio of each strata to total population	Each ratio multiplied by total sample size	Sample to be taken from each stratum.	Ratio of selected samples to each strata
1.	Instruction	35	35/124	0.28 x 73	20	57%
2.	Trainers, coaches and researchers	15	15/124	0.1 x 73	8	57%
3.	Practitioners	70	86/124	0.6 x 73	45	60%
Total		124	≈1		73	≈58% in average(grand percentage)

Table 4
Table SS: Samples selected from each strata

Finally, detail qualitative data was gathered by the investigator by in-depth face-to-face interview with the purposefully selected director, and vice director of the college.

3.6. Sample Analysis

For the purpose of this paper, seventy-three samples were taken in to consideration from the total population of 138 knowledge workers. Specifically, 20 of them are taken from instructors; 8 of them are taken from TR&C, and 45 of them are taken from practitioners. The response rate of instructors, TR&C AND Practitioners are 90%, 88%, and 98% respectively. This response rate is convincing and has no significance impact on the overall finding of the research. According Angel and Perry (1981), if the response rate of a given questioner is 60% and above, there is no significant effect on the overall finding of the research.

4. Data Presentation, Analysis, Discussion and Interpretation

4.1. Overview of the Chapter

This chapter is concerned with respondents' demographic profile, data presentation, data analyses, discussions, and data interpretations. As it was indicated in the proposal designed for this purpose, quantitative and qualitative data was collected from primary sources by using questioner and face-to-face interview as a technique respectively.

Accordingly, the investigator produced structured questioners based on the reviewed literatures. To make the information obtained from questioners more detail, semi structured interview questions were designed. The interview was being conducted with both the director& the vice director of the college.

They were separately interviewed with similar questions. To avoid information distortion tape recorder was being used to capture all data in addition to jotting down the when they respond. The interview was conducted in their office on the time they prefer. It took 2hrs and 1:30 hr to conduct the interview with the director and the vice director respectively.

- For the purpose of consistency and simplicity, both quantitative (data from interview) and qualitative data (data from questioner) are presented, analyzed, discussed, and interpreted simultaneously.

4.2. Respondents Demographic Profile

In this section, the demographic profiles of practitioners, instructors, and TR&C are examined in the form of table.

4.2.1. Demographic Profile of Practitioners

No	Variables	Descriptions	Frequencies	RF
1.	Sex	M	23	52
		F	21	48
		Total	44	100
2.	Age	18-25	7	16
		26-32	23	52
		33-40	11	25
		>40	3	7
		Total	44	100
3.	Service Year in the collage	<1	0	0
		1-3	6	14
		3-5	4	9
		>5	34	77
		Total	44	100
4.	EDBG	Management	10	22
		ABM	2	5
		Accounting	14	32
		Law	6	14
		IT	8	18
		Others	4	9
		Total	44	100
5.	EDL	PhD	0	0
		graduate	3	7
		Under graduate	11	25
		Diploma	30	68
		Total	44	100

Table 5

Table SPP: Summarized profiles of practitioners

When practitioners are examined sex wise, 52% of the male males and the remaining 48% are females. Age wise 16% of them are between the ages of 18-25; 52% of them are between the ages of 26-32. While 25 % of them are between the ages of 26-32, 7% of them are above 40 years.

Service year wise, none of them stays in the college for less than one year; 14% of workers stay in the college for 1-3 years; 9% of the workers have 3-5 years of service; and 77% of workers have worked in the college for more than five years.

From the view point of educational back ground, 22 % of practitioners have management background; 5% of the have ABM back ground; 32% of them are from accounting back ground; 14% of them are from law background; and 11% of them are from information technology, and 9% of them are from other educational background.

Educational level wise, none of them is at PhD levels; 7% are at graduate level; 25% are at undergraduate level, and the remaining 68% are either at diploma level or 10 +3 level or 10+4 level or other advanced certificates.

4.2.2. Demographic Profiles of Instructors

No	Variables	Descriptions	Frequencies	RF
1.	Sex	M	17	94
		F	1	6
		Total	18	100
2.	Age	18-25	3	17
		26-32	8	44
		33-40	5	28
		>40	2	11
		Total	18	100
3.	Service Year in the collage	<1	2	11
		1-3	5	28
		3-5	4	22
		>5	7	39
		Total	18	100
4.	EDBG	Management	4	22
		ABM	3	17
		Accounting	4	22
		Law	5	28
		IT	2	11
		Total	18	100
5.	EDL	PhD	0	0
		Graduate	7	39
		Under graduate	11	61
		Total	18	100
6.	Current department/team	HRM<	3	17
		PF&AT	5	27.5
		ABM	5	27.5
		Law	3	17
		IT	2	11
		Total	18	100

Table 6

Table SPI: Summarized profiles of Instructors

When instructors are examined sex wise, 94% of them are males and the remaining 6% are females. Age wise, 17% of them are between the ages of 18-25; 44% of them are between the ages of 26-32. While 28 % of them are between the ages of 26-32, 11% of them are above 40 years.

Service year wise, 11 % of workers stay in the college for less than one year; 28% of workers stay in the college for 1-3 years; 22% of the workers have 3-5 years of service; and 39% of workers have worked in the college for more than five years.

Concerning EDBG, 22 % of instructors have management background; 17% of the have ABM back ground; 22% of them are from accounting back ground; 28% of them are from law background; and 11% of them are from information technology.

Educational level wise, none is at PhD level; 39% are at graduate level; and the remaining 61% are at undergraduate level.

From the perspective of current departments/team, 17% of instructors are teaching in HTM&LST; 27.5% of instructors are teaching in PF&AT; 27.5% of instructors are teaching in ABMT; 17% of instructors are teaching LT; and finally, 11% of them are serving in IT team.

4.2.3. Demographic Profiles for TR&C

No	Variables	Descriptions	Frequencies	RF
1.	Sex	M	7	100
		F	0	0
		Total	7	100%
2.	Age	18-25	0	0
		26-32	3	43
		33-40	1	14
		>40	3	43
		Total	7	100%
3.	Service Year in the collage	<1	0	0
		1-3	1	14
		3-5	1	14
		>5	5	72
		Total	7	100%
4.	EDBG	Management	3	43
		ABM	0	0
		Accounting	2	29
		Law	1	14
		IT	1	14
		Others	0	0
		Total	7	100%
5.	EDL	PhD	0	0
		Graduate	4	58
		Under graduate	3	42
		Diploma	0	0
		Total	7	100%

Table 7

Table STR&CP: Summarized TR&C profiles

When TR&C are examined sex wise, 100% of them are males and none is female. Age wise, none of them is between the ages of 18-25; 43% of them are between the ages of 26-32. While 14% of them is between the ages of 26-32, 43% of them are above 40 years. Regarding service year in the college, none of workers stays in the college for less than one year; 14% of workers stay in the college for 1-3 years; 14% of the workers have 3-5 years of service; and 72% of workers have worked for more than five years. Concerning EDBG, 43% of instructors have management background; none of them have ABM background; 29% of them are from accounting background; 14% of them are from law background; and none of them are from information technology. Educational level wise, none is at PhD level; 58% are at graduate level; and the remaining 42% are at undergraduate level.

Generally, it can be understood from the summary of each respondent demographic profile:

- ❖ Majority of knowledge workers are males
- ❖ There is no male trainer, researcher and consultant
- ❖ Majority of workers are with the range of 26-32 years
- ❖ Majority of practitioners, instructors and TR&C have served in the college for > 5 years
- ❖ Educational level wise, majority of practitioners are at diploma level; majority of instructors are at undergraduate level, and majority of TR&C are at graduate level
- ❖ Specially, instructors wise the college is not this much on the safest position because the number of under graduates are by far greater than the number of graduates. This makes difficult to win different competitions by using knowledge as a reputation.

4.3. Data Editing, Coding and Data Entry

In this regard, data has been edited to check their completeness, legibility (understandable), clarity, and extent of errors in the following manager:

Respondents	Completeness (%)	Legibility (%)	Clarity/understandable (%)	Extent of errors (%)
Instructors	100	100	100%	100
Trainers, researchers and consultants	100	100	100	100
Practitioners	92	100	100	86

Table 8

Table CLU&R: Degree of data completeness, legibility, clarity, and extent of error

From the table, the percentage of completeness was calculated by first computing the percentage of incompleteness by dividing the unsuccessfully responded paper with that of the total concerned respondent. Then, the percentage of completeness was computed by deduction.

$$\text{Percentage of incompleteness} = \frac{\text{number questions incompletely answered}}{\text{number of distributed questioner}}$$

Instructors and TR&C answered the questioner wholly. In this case, completeness of response is 100%. However, among 44 practitioners, six respondents did not answer two questions in average. Percentage of completeness in this case is:

$$\text{Percentage of incompleteness} = \frac{\text{number questions incompletely answered}}{\text{number of distributed questioner}}$$

Accordingly,

$$\text{Percentage of incompleteness} = \frac{6 \times 2}{\text{total number of questions} \times \text{total number of respondents}}$$

$$\text{Percentage of incompleteness} = \frac{12}{34 \times 43} = \frac{12}{1,462} = 8\%$$

This show that the questioner is 92% completely answered.

Regarding clarity, the responses were both audible and understandable. Concerning errors, there is some gap with practitioners. While instructors and TR&C have answered all the questions without error, practitioners commit some mistake.

Concerning forbidden knowledge, for example, those who choose 'I don't know', still answered the next questions although those questions should be answered if and only if their answer for the previous one is 'yes'. There are such errors while they answered questions regarding forbidden knowledge, and employee positioning. Among 44 practitioners, 23 of them commit mistakes on forbidden knowledge, and 19 of them commit mistake on employee positioning issue. On averaged, $21(\frac{19+23}{2})$ of them commit mistakes concerning the two issue.

$$\text{Percentage of error} = \frac{\text{averagenumberofrespondentswhocommitmistakes}}{\text{totalnumberofquestions} \times \text{totalrespondents}}$$

$$= \frac{21}{1462} = 14\%$$

This shows that 86% of the questions were answered without error. This error has no significant impact on the reliability of the finding. According Angeland Perry (1981), if 60% of the questions are filled free of errors, there is no significant effect on the overall finding of the research.

- From the above computations, it can be said from the table that the collected data is complete, understandable, legible, and almost all free of error free.

After data was critically edited, entered data in to the data base using both manual and computerized systems. To make statistical errors insignificant, a double entry system was adopted to enter data in to the database. According to Bombast and Mud (1999), double entry system can minimize the error rate because there is a possibility of cross checking.

After this data entry system, data was arranged using both simple and cross tabulation. Accordingly, the tabular presentation of data is given in the subsequent sections.

4.4. Data Presentations, Analysis, Discussion and Interpretation

No	Data analysing instruments	Evaluators											
		Instructors				TR&C				Practitioners			
		Values/grades (1)	Number of ratters (2)	Total values (1x2)	RF($\frac{2}{n}$)	Values/grades (1)	Number of ratters (2)	Total values (1x2)	RF($\frac{2}{n}$)	Values/grades (1)	Number of ratters (2)	Total values (1x2)	RF($\frac{2}{n}$)
1.													
2.		1	2	2	11	1	0	0	0	1	4	4	9
		2	1	2	6	2	0	0	0	2	6	12	14
		3	4	12	22	3	1	3	14	3	8	18	18
		4	6	24	33	4	5	20	72	4	14	56	32
		5	5	25	28	5	1	5	14	5	12	60	27
3.	Total		18	65	100%		7	28	100%		44	150	100%
4.	Average value			3.6				4				3.4	

Table 9: Evaluation criteria 1: The College follows participatory leadership style.

As planned in the proposal, primary data was gathered by using questioners, face-to-face interview, and formal observations. While questioners were produced in the form of evaluation criteria statement, interview questions are designed in the form of interrogative statements. The rigorous presentations, analyses, discussions, and interpretations are given below.

4.4.1. Regarding Leadership Styles

i. Percentages and Mean Values

The concept of bimodal statistics proposed by Sigmund B. & Carr G. (2010) was used throughout this paper. In this case the sum total of Agree plus strongly agree will assumed to agree and the sum of disagree plus strongly disagree will be disagree.

Table 10: Frequency distribution table of leadership style of the college

NB:

- Relative frequencies are the percentage of individual respondent to total respondents.
- Average values are the product of each values and the total number of respondents.

a. Percentage Values

As far as instructors are concerned, 61% of them are at least agree that there is a participatory leadership style in the college; 17% of them disagree on the statement, and 22% of them are not in a position to give their idea concerning the current leader ship style of the college.

Regarding Trainers, Researchers & Consultants, 86 % of them agree that there is a participatory leadership style in the college; none of them disagree; and 14% of them are not in a position to give their idea concerning the current leader ship style of the college.

Practitioner wise, 61% of them are belief that there is participatory leader ship style in the college; 17% of them disagree on the statement; and 22% of them are not in a position to give their idea concerning the current leader ship style of the college.

b. Average Values

From the average values, all practitioners, instructors, and TR&C gave 3.4, 3.6,& 4 average values respectively. These three average values show almost all knowledge workers are at least neutral (at most agree& strongly agree) in the existence of participatory leadership style in the college. The grand mean $3.7 (\frac{3.4+3.6+4}{3})$ also shows that all knowledge workers gave the average value almost close to 4 which shows agreement.

ii. Variance and Standard Deviation

$$s^2 = \frac{\sum (x_i - \bar{x})^2}{n-1}$$

Where ,
 s^2 = sample variance
 x_i = the variable under study
 \bar{x} = average value
 N = total population
 \sum = summation
 $S = \sqrt{s^2}$

Where,
 S = sample standard deviation
 s^2 = sample variance

NB: This formula is used in the remaining section of the paper to compute variances and standard deviations.

As indicated in the proposal, both sample variances and standard deviations were calculated by using the formula developed by Geoffrey M, et al (2005).

Accordingly,

No	Evaluators	Statistical formulas			
1.	Practitioners	Evaluation score	Sample mean(\bar{x})	$(x_i - \bar{x})$	$(x_i - \bar{x})^2 n$
		1	3.4	-2.4	23.04
		2	3.4	-1.4	11.76
		3	3.4	-0.4	1.28
		4	3.4	0.6	5.40
		5	3.4	1.6	30.72
		$\sum (x_i - \bar{x})^2 = 72.20$ $s^2 = \frac{72.20}{44-1} = 1.679$ $S = \sqrt{1.679} = 1.297$			
2.	Instructors	Evaluation score	Sample mean(\bar{x})	$(x_i - \bar{x})$	$(x_i - \bar{x})^2 n$
		1	3.6	-2.6	13.520
		2	3.6	-1.6	2.56
		3	3.6	-0.6	1.44
		4	3.6	0.4	0.960
		1	3.6	1.4	9.80
		$\sum (x_i - \bar{x})^2 = 28.28$ $s^2 = \frac{28.28}{18-1} = 1.664$ $S = \sqrt{1.664} = 1.299$			
3.	TR&C	Evaluation score	Sample mean(\bar{x})	$(x_i - \bar{x})$	$(x_i - \bar{x})^2 n$
		1	4	-3	0
		2	4	-2	0
		3	4	-1	1
		4	4	0	0
		5	4	1	1
		$\sum (x_i - \bar{x})^2 = 2$ $s^2 = \frac{2.0}{7-1} = 0.333$ $S = \sqrt{0.333} = 0.57$			

Table 11: Variance and standard deviation for leadership styles

Description:

In the statistical formula $(x_i - \bar{x})^2 n$, 'n', is the total number of respondents to the questioner. I prefer to multiply it with $(x_i - \bar{x})^2$ rather than listing all respondents and the value they gave straight down ward. I checked many times that the result to be arrived at is one and the same (David, R. et al (1999)).

No	Data analysing instruments	Evaluators											
		Instructors				TR&C				Practitioners			
1.		Values/grades (1)	Number of ratters (2)	Total values (1x2)	RF($\frac{2}{n}$)	Values/grades (1)	Number of ratters (2)	Total values (1x2)	RF($\frac{2}{n}$)	Values/grades (1)	Number of ratters (2)	Total values (1x2)	RF($\frac{2}{n}$)
2.		1	2	2	11	1	0	0	0	1	5	5	12
		2	2	4	11	2	2	4	29	2	3	6	7
		3	5	15	28	3	1	3	14	3	10	30	23
		4	3	12	17	4	2	8	29	4	11	44	25
		5	6	30	33	5	2	10	28	5	15	75	33
3.	Total		18	63	100%		7	25	100%		44	160	100%
4.	Average values			3.5					3.57			3.6	

Table 12: Evaluation criteria 2: The current leadership style strongly facilitates knowledge sharing.

From table 11, the value given by each and every practitioner are on average 1.297 far away from their respective mean value (3.4); the responses of each and every instructor are 1.299 far away (on average) form their mean value (3.6); and finally, the response of each and every TR&C are 0.57 far away (on average) form their mean value (4).

- The responses of practitioners are more deviated from the concerned mean than those of instructors and TR&C relatively. On the other hand, the values given by the TR&Care more close to mean than others are. This in turn shows that TR&C have similar feeling about the reward package of the college that the other two strata.

i. Percentage and Average Values

Table A3: To what extent the current leadership style facilitate knowledge sharing

a. Percentage Values

As it can be understood from the table, majority of practitioners (58%) belief that the leadership style in the college facilitates knowledge sharing; 19% of them are disagree with the statement; & 23% of them are not in a position to give their idea on to what extent the current leader ship style accelerate KS.

From instructors’ point of view, majority of them (50%) agree that the existing leader ship style facilitate KS;22% of them disagree with the statement,&28% of them are not in a position to give their idea on the statement.

Regarding TR&C, 57% of them agree that the leadership style in the college facilitates knowledge sharing; 29% with the statement,& 14% of them are not in a position to give their idea about the statement.

b. Average Values

From the average values, practitioners, instructors, and TR&C gave the average values of 3.6, 3.5,&3.57 respectively.

- These three average values show that all knowledge workers agree the current leadership style of the college facilitate KS.

ii. Variances and Standard Deviations

No	Evaluators	Differnt statistical formulas			
1.	Professionals	Evaluation score	Sample mean(\bar{y})	$y_i - \bar{y}$	$(y_i - \bar{y})^2$ n
		1	3.6	-2.6	34.8
		2	3.6	-1.6	7.5
		3	3.6	-0.6	3.6
		4	3.6	0.4	1.54
		5	3.6	1.4	29.4
		$\sum (y_i - \bar{y})^2 = 76.84$ $s^2 = \frac{76.84}{44-1} = 1.787$ $S = \sqrt{1.787} = 1.34$			

2.	Instructors	Evaluation score	Sample mean(\bar{y})	$y_i - \bar{y}$	$(y_i - \bar{y})^2$ n
		1	3.5	-2.5	12.5
		2	3.5	-1.5	4.5
		3	3.5	-0.5	1.25
		4	3.5	0.5	0.75
		5	3.5	1.5	13.5
$\varepsilon(y_i - \bar{y})^2 = 32.5$ $s^2 = \frac{32.5}{18-1} = 1.912$ $S = \sqrt{1.912} = 1.382$					
3.	TR&C	Evaluation score	Sample mean(\bar{y})	$y_i - \bar{y}$	$(y_i - \bar{y})^2$ n
		1	2	-1	0
		2	2	0	0
		3	2	1	1
		4	2	2	8
		5	2	3	18
$\varepsilon(y - \bar{y})^2 = 27$ $s^2 = \frac{27}{7-1} = 4.5$ $S = \sqrt{4.5} = 2.12$					

Table 13: Variance and Standard deviation on to what extent the current leadership style facilitate knowledge sharing

From table 13, the responses of each practitioner is 1.34 far away from their mean value on average; the responses of every instructors are 1.382 far away from their mean value on average; and finally, the responses of each TR&C are 2.12 far away from their mean values on average.

- In comparison, the response of TR&C are similar to the mean value than those of the TR&C and instructors respectively; and the value instructors gave on to what extent the current leadership style facilitate the knowledge sharing practice is the most dispersed value from the average and then from one another.
- This shows that TR&C have very diversified feelings on to what degree the current leadership of the college is participatory or not.

iii. Associations Between The Leadership Style And The Knowledge Sharing Practice

In the case of this dimension, the independent variable(x-value) is the value given on to the existence of participatory leadership style and the dependent variable(y-value) is the knowledge sharing trends in the college. As already planned in the proposal, the Pearson correlation formula, which is formulated by Anderson, W. (2007), was adopted.

$$r_{xy} = \frac{S_{xy}}{S_x S_y}$$

r_{xy} = sample correlation
 S_{xy} = sample covariance
 S_x = sample standard deviation of x
 S_y = sample standard deviation of y

But,

$$S_{xy} = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{n-1}$$

Where,

x_i and y_i are the to values to be paired
 \bar{x} = mean of x_i
 \bar{y} = mean of y_i

Accordingly,

No	Evaluators	Necessary formulas to compute correlation values		
1.	Practitioners	$x_i - \bar{x}$	$y_i - \bar{y}$	$(x_i - \bar{x})(y_i - \bar{y})$
		-2.4	-2.6	6.24
		-1.4	-1.6	2.24
		-0.4	-0.6	0.24
		0.6	0.4	0.24
		1.6	1.4	2.24
		$\Sigma (x_i - \bar{x})(y_i - \bar{y}) = 11.20$ $S_{xy} = \frac{\Sigma (x_i - \bar{x})(y_i - \bar{y})}{n-1} = \frac{11.20}{44-1} = 0.26$ Accordingly, $r_{xy} = \frac{S_{xy}}{S_x S_y}$ $r_{xy} = \frac{0.26}{(1.297)(1.34)} = \frac{0.26}{1.738} = 0.15$		
2.	Instructors	$x_i - \bar{x}$	$y_i - \bar{y}$	$(x_i - \bar{x})(y_i - \bar{y})$
		-2.6	-2.5	6.500
		-1.6	-1.5	2.400
		-0.6	-0.5	0.300
		0.4	0.5	0.200
		1.4	1.5	2.100
		$\Sigma (x_i - \bar{x})(y_i - \bar{y}) = 15.5$ $S_{xy} = \frac{\Sigma (x_i - \bar{x})(y_i - \bar{y})}{n-1} = \frac{15.5}{18-1} = 0.92$ Accordingly, $r_{xy} = \frac{S_{xy}}{S_x S_y}$ $r_{xy} = \frac{0.92}{(1.299)(1.912)} = \frac{0.92}{2.484} = 0.370$		
3.	TR&C	$x_i - \bar{x}$	$y_i - \bar{y}$	$(x_i - \bar{x})(y_i - \bar{y})$
		-3	-1	3
		-2	0	0
		-1	1	-1
		0	2	0
		1	3	1
		$\Sigma (x_i - \bar{x})(y_i - \bar{y}) = 3$ $S_{xy} = \frac{\Sigma (x_i - \bar{x})(y_i - \bar{y})}{n-1} = \frac{3}{7-1} = 0.5$ Accordingly, $r_{xy} = \frac{S_{xy}}{S_x S_y}$ $r_{xy} = \frac{0.5}{(0.57)(2.12)} = \frac{0.5}{1.208} = 0.414$		

Table 14: Correlation between leadership styles and knowledge sharing practice

-1	-0.7	-0.3	0	+0.3	+0.7	+1
perfect negative	strong negative	weak negative	Perfect independence	weak positive	strong positive	perfect positive

Before judging to what extent the association between the dependent and independent variable is strong and/or weak, the correlation table developed by Mark, S., Philip, L., & Adrian T., (2007) was taken as a standard. The table is given below:

Supplementary table 1: Levels of correlation values

- From the response of practitioners, instructors, and TR&C, it is possible to say that there is a weak positive correlation (0.15, 0.370, & 0.414 respectively) between the current leadership style and the knowledge sharing practice of the college.

iv. Data from Interview and Observation

Both the director and the vice director of the college to elaborate the nature of the current leadership style they follow and to what extent this style/s facilitate knowledge sharing practice among key stake holders.

They said that they follow participatory leadership style. The top management, for example is composed from all core processes and supportive staffs. Student representative is given a right to participate on the meeting whenever necessary. Workers also participate in many different such as giving the idea they like on the long term, medium term and short term strategic plans of the college. They participate in such conditions in the following manner.

Firstly, the planning and controlling team of the college invite all concerned teams to produce the annual plan (financial and non-financial wise).

The team then, compiles the plan prepared by all teams together and present then to all workers at the beginning of the budgetary period. The discussion on this meeting can take from one up to three days.

Finally, the planning and controlling team will be ordered to edit the document according to the idea raised from the participants (the director and vice director of the college).

For the question they were asked on to what extent the current leadership style facilitate knowledge sharing, they replied that they think it facilitate knowledge sharing. They quoted the composition of the current top management team as an example. They argued that “The current top management team is the constituent of individuals from different department with different area of specialization, it is possible to obtain from them necessary information to make even creative decision making.”

From all the Percentage values, Mean Values, Correlation Values, and the Interview, it is Possible to Infer that:

- Based on criteria one, majority of practitioners, instructors and TR&C (59%, 61%, and 86% respectively)beliefs that participatory leadership is adopted in the college.
- Based on criteria two, majority of practitioners, instructors and TR&C (58%, 50%, and 57% respectively) beliefs that the current leadership style facilitates knowledge sharing.
- This, in turn, shows that majority knowledge workers belief in the existence of participatory leadership style in the organization.
- The average values given by each strata on both criteria one and criteria two are above 3and can reflect that the respondent at least agree (at most strongly agree) on the statement on the two evaluation criteria
- From the interview, the college follows bottom up strategy in designing strategic plan of the college which implies the participatory nature of leadership style
- The three correlation values show that the associations between the existing leadership style andthe knowledge sharing practice weak positive.

4.4.2. Regarding Employee Reward Packages

- Evaluation criteria 3:The College has motivating reward package (financial and non- financial)

i.Percentages And Average Values

No	Data analysing instruments	Evaluators											
		Instructors				TR&C				Practitioners			
		Values/grades (1)	Number of raters (2)	Total values (1x2)	$RF(\frac{2}{n})$	Values/grades (1)	Number of raters (2)	Total values (1x2)	$RF(\frac{2}{n})$	Values/grades (1)	Number of raters (2)	Total values (1x2)	$RF(\frac{2}{n})$
1.													
2.		1	4	4	22	1	3	3	43	1	14	14	32
		2	5	10	28	2	1	2	14	2	10	20	23
		3	5	15	28	3	2	6	29	3	7	21	16
		4	3	12	17	4	0	0	0	4	8	32	18
		5	1	5	5	5	1	5	14	5	5	25	11
3.	Total		18	46	100%		7	16	100%		44	112	1000
4.	Average values			2.556				2.286				2.5	

Table 15: Frequency Distribution of the Reward Package

a. Percentage Values

As it can be learned from the table, 55%, 50%, & 47% of practitioners, instructors, and TR&C respectively disagree that there is a motivating reward package in the college. Here, except practitioners, majority of instructors and TR&C belief that the current reward package of the college is not motivating.

While 29% of practitioners agreed on the issue, 22% of instructors agree on the motivating power of the current reward package. Only 14% of TR&C agrees that the college has motivating reward package. From neutrality point of view, 16%, 28%, & 29% of practitioners, instructors, and TR&C respectively are not willing to share their idea on the reward package of the college.

b. Average Values

The average response of practitioners, instructors, and TR&C are 2.2, 2.556, & 2.286 respectively. The average values are almost all very similar. They show that not all knowledge workers are satisfied with the reward package of the college.

ii. Variances and Standard Deviations

No.	Respondents	Different formulas			
		Evaluation score	Sample mean(\bar{x})	$(x_i - \bar{x})$	$(x_i - \bar{x})^2 n$
1.	Practitioners	1	2.5	-1.5	31.5
		2	2.5	-0.5	2.5
		3	2.5	0.5	1.75
		4	2.5	1.5	18
		5	2.5	2.5	31.25
		$\sum (x_i - \bar{x})^2 = 85$ $s^2 = \frac{85}{44-1} = 1.997$ $S = \sqrt{1.997} = 1.41$			
2.	Instructors	1	2.556	-1.556	9.685
		2	2.556	-0.556	1.546
		3	2.556	0.444	0.986
		4	2.556	1.444	6.238
		5	2.556	2.444	5.973
		$\sum (x_i - \bar{x})^2 = 24.428$ $s^2 = \frac{24.428}{18-1} = 1.437$ $S = \sqrt{1.437} = 1.198$			
3.	TR&C	1	2.286	-1.286	4.961
		2	2.286	-0.286	0.082
		3	2.286	0.714	1.020
		4	2.286	1.714	0
		5	2.286	2.714	7.366
		$\sum (x_i - \bar{x})^2 = 13.429$ $s^2 = \frac{13.429}{7-1} = 2.238$ $S = \sqrt{2.238} = 1.495$			

Table 16: Variances and standard deviations on reward package

By using the formula indicated in table one, these two statistical descriptions can be computed as follows:

From table B2, it is possible to learn that the responses of each instructor are on average less inclined from their mean value than both practitioners and TR&C. On the other hand, the responses of every TR&C are more deviated from the mean value than those of practitioners and instructors.

- This shows that instructors have similar perception about the reward package of the college than the other two strata. Their perception is that the reward package is not motivating.
- From the combination of both percentage and average values, the college has no adequate reward package that is powerful to motivate knowledge workers.
- Evaluation criteria 4: The existing reward packages facilitate knowledge sharing.

i. Computations of Percentage and Average Values

No	Statistical data analyzing instruments	Evaluators											
		Instructors				TR&C				Practitioners			
1.		Values/grades (1)	Number of raters (2)	Total values (1x2)	$RF(\frac{2}{n})$	Values/grades (1)	Number of raters (2)	Total values (1x2)	$RF(\frac{2}{n})$	Values/grades (1)	Number of raters (2)	Total values (1x2)	$RF(\frac{2}{n})$
2.		1	3	3	17	1	3	3	43	1	9	9	20
		2	6	12	33	2	2	4	29	2	15	30	34
		3	6	18	33	3	1	3	14	3	10	30	23
		4	2	8	11	4	0	0	0	4	8	32	18
		5	1	5	6	5	1	5	14	5	2	10	5
3.	Total		18	46	100%		7	15	100%		44	111	100%
4.	Average values			2.556				2.143				2.523	

Table 17: Frequency distribution on reward package Vs knowledge sharing

a. Percentage Values

From the relative frequencies of each stratum, majorities of practitioners, instructors and respondents(54%, 52% &72% respectively) belief that the current reward package of the college are not motivating to facilitate knowledge circulation among key stake knowledge workers. They disagree that the existing reward packages accelerate knowledge sharing.

b. Average Values

The average response of the three strata as indicated on table 17 are 2.53, 2.226,& 2.143 for practitioners, instructors, and TR&C respectively. The average value they gave here are almost all similar to those they gave on table 16 (where they evaluate to what extent the college has a motivating reward package).

- From both the percentage and the average values again, the current reward package does not accelerate the knowledge sharing practices from the source to the end users.

ii. Computation of Variances and Standard Deviations

Evaluators		Different statistical formulas			
1.	Practitioners	Evaluation score	Sample mean(\bar{y})	$(y-\bar{y})$	$((y_i-\bar{y})^2)n$
		1	2.523	-1.523	17.175
		2	2.523	-0.523	4.103
		3	2.523	0.477	2.275
		4	2.523	1.477	17.452
		5	2.523	2.477	12.271
		$\epsilon(y_i-\bar{y})^2 = 53.303$ $s^2 = \frac{53.303}{44-1} = 1.24$ $S = \sqrt{2.7} = 1.11$			
2.	Instructors	Evaluation score	Sample mean(\bar{y})	$(y-\bar{y})$	$((y_i-\bar{y})^2)n$
		1	2.556	-1.556	7.263
		2	2.556	-0.556	1.855
		3	2.556	0.556	1.885
		4	2.556	1.444	4.170
		5	2.556	2.444	5.973
		$\epsilon(y_i-\bar{y})^2 = 21.146$ $s^2 = \frac{21.146}{18-1} = 1.244$			

		S= $\sqrt{1.244}$ = 1.115			
3.	TR&C	Evaluation score	Sample mean(\bar{y})	($y-\bar{y}$)	$((y_i-\bar{y})^2)n$
		1	2.143	-1.143	3.919
		2	2.143	-0.143	0.041
		3	2.143	0.857	0.734
		4	2.143	1.857	0
		5	2.143	2.857	8.162
		$\epsilon(y_i-\bar{y})^2 = 12.856$ $s^2 = \frac{12.856}{7-1} = 2.143$ $S = \sqrt{2.143} = 1.463$			

Table 18: Variances and standard deviation table on reward package Vs knowledge sharing

From the above tabular presentation, the average responses of each TR&C are more deviated from the mean value than those of practitioners and instructors. On contrary, the responses given by each practitioner & instructors are almost identical.

- From this concept, both practitioners & instructors have similar perception on to what extent the current reward package facilitate knowledge sharing practices than those TR&C.

iii. Associations Between the Reward Package and the Knowledge Sharing Practice in the College

Concerning this dimension, the independent variable(x- value) is the value given on to what extent the current reward package is motivating, and the dependent variable(y-value) is the value given on to what degree this reward package facilitates knowledge sharing trends. The tabular presentation looks like the following:

No	Respondents	Statistical Calculations		
		$x_i-\bar{x}$	$y_i-\bar{y}$	$(x_i-\bar{x})(y_i-\bar{y})$
1.	Practitioners	-1.5	-1.523	2.285
		-0.5	-0.523	0.262
		0.5	0.477	0.239
		1.5	1.477	2.216
		2.5	2.477	6.193
		$\sum (x_i-\bar{x})(y_i-\bar{y})=11.195$ $S_{xy} = \frac{\sum (x_i-\bar{x})(y_i-\bar{y})}{n-1} = 0.26$ Accordingly, $r_{xy} = \frac{S_{xy}}{S_x S_y}$ $r_{xy} = \frac{0.26}{(1.41)(1.11)} = \frac{0.26}{1.565} = 0.166$		
2.	Instructors	$x_i-\bar{x}$	$y_i-\bar{y}$	$(x_i-\bar{x})(y_i-\bar{y})$
		-1.556	-1.556	2.421
		-0.556	-0.556	0.309
		0.444	0.556	0.1971
		1.444	1.444	2.085
		2.444	2.444	5.973
$\sum (x_i-\bar{x})(y_i-\bar{y}) = 10.9851$ $S_{xy} = \frac{\sum (x_i-\bar{x})(y_i-\bar{y})}{n-1} = 10.9851/17=0.646$ Accordingly, $r_{xy} = \frac{S_{xy}}{S_x S_y}$ $r_{xy} = \frac{0.646}{(1.198)(1.115)} = \frac{0.646}{1.336} = 0.484$				
3.	RT&C	$x_i-\bar{x}$	$y_i-\bar{y}$	$(x_i-\bar{x})(y_i-\bar{y})$
		-1.286	-1.143	1.469
		-0.286	-0.143	0.041
		0.714	0.857	0.612
		1.714	1.857	3.183
		2.714	2.857	7.754
$\sum (x_i-\bar{x})(y_i-\bar{y}) = 13.059$				

		$S_{xy} = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{n-1} = 13.059/6 = 2.1765$ <p>Accordingly,</p> $r_{xy} = \frac{S_{xy}}{S_x S_y}$ $r_{xy} = \frac{2.099}{(1.495)(1.463)} = \frac{2.099}{2.187} = 0.96$
--	--	---

Table 19: Association between reward package and knowledge sharing

Based on the correlation table developed by Mark S., Philip L. & Adrian T., (2007), the 'r' values computed from the response of both practitioners and instructors shows that there is a weak positive association between the current reward package and the knowledge sharing practice of the college. On the other hand, the 'r' value computed for TR&C reveals the existence of strong positive association between the reward package and the knowledge sharing practice in the college.

iv. Interview Data

Here, they were asked to describe whether the college has adequate reward package and to what extent the current reward package accelerate knowledge sharing practice. For both of them, the college has good reward package and reward system; and still important to make them better.

They indicated that they provide financial and non-financial reward for teams which have best practice to be scaled-up. They quoted rewards given to IT team members as an example. They also argue that the college is active in giving none-financial rewards particularly learning and growth opportunities.

Form both the interview and formal observation; instructors are obliged the study they masters degree in the program which they do not prefer. Around eight instructors, for example, were obliged to follow their master's degree in distance program. This is not what instructors need.

Accordingly, all instructors in all department are obliged to attend either distance or week end program (except law because there is no distance and summer program in law). Most instructors who attend/began to attend the education in distance program are not satisfied with it and started to learn additional degrees in weak end program with their own cost. According the information from the two directors again, knowledge workers, especially instructors are denied promotions & career developments. The reason the college put is that promotion is hold by government country wide.

In general:

- From the combination of both percentage and average values on criteria 3, the college has no adequate reward package that is powerful to motivate knowledge workers.
- From both the percentage and the average values on evaluation criteria 3, the current reward package does not accelerate the knowledge sharing practices from the source to the end users.
- According to the correlation value computed from practitioners and instructors, the association between existing reward packages and knowledge sharing practice is weak positive. The 'r' values of TR&C shows that there is a strong positive correlation between the reward packages its knowledge sharing trends from the source to the immediate end users.
- From all percentage values, average values and information obtained from interview, majorities of knowledge workers disagree that the current reward package facilitates knowledge sharing among key knowledge workers.
- The college is not willing to give the learning program instructors need. Instructors prefer to attend their education in regular program but all instructors are being obliged to attend either distance or summer program.
- Although scholars like Armstrong, M.(2007) recommend that reward packages must be revised by taking in to account different factors such as inflations, the management in PSCO is passive in revising its reward package by conducting internal and external relativities(from the interview).

4.4.3. Regarding Employment Relationship Policy

- Evaluation criteria 6: There is effective worker-worker and worker –manager relationship in the college.

i. Percentage and Mean Values

No	Data Analysing Instruments	Evaluators											
		Instructors				TR&C				Practitioners			
		Values/grades (1)	Number of raters (2)	Total values (1x2)	RF($\frac{2}{n}$)	Values/grades (1)	Number of raters (2)	Total values (1x2)	RF($\frac{2}{n}$)	Values/grades (1)	Number of raters (2)	Total values (1x2)	RF($\frac{2}{n}$)
		1	0	0	0	1	3	3	43	1	4	4	10
		2	2	4	11	2	1	2	14	2	5	10	11
		3	3	9	17	3	2	6	29	3	13	39	29
		4	7	28	39	4	0	0	0	4	12	48	27
		5	6	30	33	5	1	5	14	5	10	50	23
1.	Total		18	71	100%		7	16	100%		44	151	100%
2.	Average values			3.994				2.286				3.432	

Table 20: Frequency distribution table of employment relationship in the college relationship

a. Percentage Values

From the above frequency distribution table, it possible to derive important points such as, majority of practitioners and instructors(50% & 72% respectively) belief that there is a positive relationship in the college; but, majority of TR&C (57%) think that there is no smooth relationship in the college.

- Surprisingly, while 50% & 72% of instructors and practitioners agree that there is a smooth employment relationship in the college, only 14% of TR&C thinks that there is constructive worker-worker and worker-manager relationship.

b. Average Values

The average value given by both practitioners and instructors (3.432 & 3.994 respectively) are very similar. In this case, majority of practitioners and instructors agree that there is smooth employment relationship in the college. On the other hand, the average value given by the TR&C is 2.286. This indicates that majority of TR&C disagrees on the existence of sound employment relationship in the college.

- From the grand mean (3.237), majority of knowledge workers agree that there is effective employment relationship in the college.

ii. Variance and Standard Deviation

No	Evaluators	Statistical instruments			
1.	Practitioners	Evaluation score	Sample mean(\bar{x})	$(x-\bar{x})$	$(x_i-\bar{x})^2$ n
		1	3.432	-2.432	23.54
		2	3.432	-1.432	10.25
		3	3.432	-0.432	2.42
		4	3.432	0.568	3.87
		5	3.432	1.568	24.58
		$\sum(x_i-\bar{x})^2 = 64.794$ $s^2 = \frac{64.794}{44-1} = 1.507$ $S = \sqrt{1.507} = 1.227$			
2.	Instructors	Evaluation score	Sample mean(\bar{x})	$(x-\bar{x})$	$(x_i-\bar{x})^2$ n
		1	3.994	-2.994	0
		2	3.994	-1.994	7.95
		3	3.994	-0.994	2.96
		4	3.994	0.006	0.00025
		5	3.994	1.006	6.07
		$\sum(x_i-\bar{x})^2 = 16.98825$ $s^2 = \frac{16.98825}{18-1} = 0.999$ $S = \sqrt{0.999} = 0.9995$			

3.	TR&C	Evaluation score	Sample mean(\bar{x})	$(x-\bar{x})$	$(x_i-\bar{x})^2$ n
		1	2.286	-1.286	4.96
		2	2.286	-0.286	0.08
		3	2.286	0.714	1.019
		4	2.286	1.714	0
		5	2.286	2.714	7.36
$\sum (x_i - \bar{x})^2 = 13.4297$ $s^2 = \frac{13.4297}{7-1} = 2.236$ $S = \sqrt{2.236} = 1.495$					

Table 21: Table of variance and standard deviation of employment relationship in the college

From the variance and standard deviation table, the responses of each practitioner are more scattered from the standard values. The deviation of both instructors and TR&C (0.9995 & 0.88) are almost all similar and are on the similar distance from the mean value.

- This shows that both Instructors & TR&C have similar feeling on to what extent there is smooth employment relationship in the college.
- Evaluation criteria 8: The current employee relationships facilitate knowledge sharing.

i. Percentages and Average Values

No	Statistical Instruments	Evaluators											
		Instructors				TR&C				Practitioners			
		Values/grades (1)	Number of raters (2)	Total values (1x2)	RF($\frac{2}{n}$)	Values/grades (1)	Number of raters (2)	Total values (1x2)	RF($\frac{2}{n}$)	Values/grades (1)	Number of raters (2)	Total values (1x2)	RF($\frac{2}{n}$)
		1	1	1	6	1	0	0	0	1	8	8	18
		2	1	2	6	2	2	4	29	2	7	9	16
		3	7	21	38.5	3	2	5	29	3	10	30	23
		4	7	28	38.5	4	1	4	14	4	12	48	27
		5	2	10	11	5	2	10	28	5	7	35	16
1.	Total		18	62	100%		7	23	100%		44	130	100%
2.	Average values			3.4				3.286				2.955	

Table 22: Employee relationship Vs knowledge sharing

a. Percentages

From the frequency distribution table, it possible to learn that majority of instructors belief that current employment relationship facilitates knowledge sharing; only 43% and 42% of practitioners and TR&C respectively think that the current employment relationship accelerate knowledge sharing.

Majority of instructors agree that there is positive relationship among workers and managers in the college and this relationship can facilitate knowledge sharing. Although majority of practitioners agree that there is positive employment relationship in the college, only 43% of them believe that the existing employment relationship accelerate knowledge sharing.

b. Average

From the average values given in the above frequency distribution table:

- Although each and every practitioner gave the average value of 3.432 on the existence of smooth employment relationship, they evaluate to what extent this relationship support the knowledge sharing practice by giving the average value 2.955 which are far from each other by the average value of 0.577 (3.432-2.955).
- Although each and every TR&C reflect their disagreement by giving the average value of 2.286 concerning the existence of positive employment relationship, they express the feeling of their agreement on to what extent the current employment relationship supports knowledge sharing by giving the average value of 3.826 which is far away from each other by 1.540(3.826-2.286).

- The average value given by instructors concerning the existence of sound employment relationship and to what degree this relationship facilitates knowledge sharing are to some extent similar (average value of 3.994 and 3.4 respectively).

Generally, from the grand mean of criteria one (3.237) and criteria two (3.22), all knowledge workers agree that there is a smooth employment relationship and this relationship facilitate knowledge sharing.

ii. Variances and Standard Deviations

No	Evaluators	Statistical Instruments			
1.	Practitioners	Evaluation score	Sample mean(\bar{y})	$(y-\bar{y})$	$((y_i-\bar{y})^2)n$
		1	2.955	-1.955	30.576
		2	2.955	-0.955	6.384
		3	2.955	0.045	0.120
		4	2.955	1.045	13.104
		5	2.955	2.045	29.274
		$\sum (y_i - \bar{y})^2 = 79.458$ $s^2 = \frac{79.458}{44-1} = 1.848$ $S = \sqrt{1.848} = 1.359$			
2.	Instructors	Evaluation score	Sample mean(\bar{y})	$(y-\bar{y})$	$((y_i-\bar{y})^2)n$
		1	3.4	-2.4	5.760
		2	3.4	-1.4	1.96
		3	3.4	-0.4	1.12
		4	3.4	0.6	2.520
		5	3.4	1.6	5.12
		$\sum (y_i - \bar{y})^2 = 16.48$ $s^2 = \frac{16.48}{18-1} = 0.969$ $S = \sqrt{0.969} = 0.984$			
3.	TR&C	Evaluation score	Sample mean(\bar{y})	$(y-\bar{y})$	$((y_i-\bar{y})^2)n$
		1	3.286	-2.286	0
		2	3.286	-1.286	3.308
		3	3.286	-0.286	0.164
		4	3.286	0.714	0.51
		5	3.286	1.714	5.876
		$\sum (y_i - \bar{y})^2 = 9.858$ $s^2 = \frac{9.858}{7-1} = 1.643$ $S = \sqrt{1.643} = 1.281$			

Table 23: Standard deviation table on to what extent the current employment relationship facilitate knowledge sharing

As it can be seen from the table 23, the evaluation points given by instructors are the most dispersed value from the concerned standard (3.4). On the contrary, the responses given by TR&C are less dispersed ones from the average value (3.286).

From this, majority of instructors gave much diversified values on to what extent the existing knowledge sharing practice facilitate knowledge sharing. On the other hand, TR&C gave the less diversified values on the same statement.

- This still implies that while instructors have very different view regarding the relationship between employment relation the knowledge sharing practice of the college, TR&C have similar view on to what degree the employment relation supports knowledge sharing when compared with instructors.

iii. Associations between the Reward Package and the Knowledge Sharing Practice in the College

In this dimension, the independent variable(x- value) is the value given on to what extent there is positive employment relation in the college and the dependent variable(y-value) is the value given on whether this employment relation facilitates the knowledge sharing trends of the college. Details of this correlation are indicated on table 24 as follows:

No	Respondents	Different statistical formulas		
1.	Practitioners	$x_i - \bar{x}$	$y_i - \bar{y}$	$(x_i - \bar{x})(y_i - \bar{y})$
		-2.432	-1.955	4.755
		-1.432	-0.955	1.368
		-0.432	0.045	-0.019
		0.568	1.045	0.598
		$\sum (x_i - \bar{x})(y_i - \bar{y}) = 9.909$ $S_{xy} = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{n-1} = \frac{9.909}{43} = 0.230$ <p>Accordingly,</p> $r_{xy} = \frac{S_{xy}}{S_x S_y}$ $r_{xy} = \frac{0.230}{1.227 \times 1.359} = \frac{0.230}{1.667} = 0.138$		
2.	Instructor	$x_i - \bar{x}$	$y_i - \bar{y}$	$(x_i - \bar{x})(y_i - \bar{y})$
		-2.994	-2.4	7.186
		-1.994	-1.4	2.792
		-0.994	-0.4	0.3976
		0.006	0.6	0.000036
		1.006	1.6	1.610
		$\sum (x_i - \bar{x})(y_i - \bar{y}) = 11.98564$ $S_{xy} = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{n-1} = \frac{11.98564}{17} = 0.705$ <p>Accordingly,</p> $r_{xy} = \frac{S_{xy}}{S_x S_y} = \frac{0.705}{(0.99995)(0.984)} = 0.716$		
3.	TR&C	$x_i - \bar{x}$	$y_i - \bar{y}$	$(x_i - \bar{x})(y_i - \bar{y})$
		-1.286	-2.286	2.939
		-0.286	-1.286	0.368
		0.714	-0.286	-0.204
		1.714	0.714	1.224
		2.714	1.714	4.652
		$\sum (x_i - \bar{x})(y_i - \bar{y}) = 8.815$ $S_{xy} = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{n-1} = \frac{8.815}{6} = 1.469$ <p>Accordingly,</p> $r_{xy} = \frac{S_{xy}}{S_x S_y}$ $r_{xy} = \frac{1.497}{(1.495)(1.281)} = \frac{1.497}{1.915} = 0.78$		

Table 24: Correlation between employment relation and knowledge sharing practices

By taking in to account the correlation table developed by Mark S., Philip L.,& Adrian T., (2007), the ‘r’ values computed from the response of practitioners indicates there is a weak positive correlation between the current employment relation and the knowledge sharing trends in the college.

On the other hand, from the correlation value obtained from the response of instructors& TR&C, there is a strong positive correlation between the existing employment relation of the college and its knowledge sharing practice.

iv. Interview Data

Under this dimension, the interviewees were asked to describe to what extent the current employee relation facilitate knowledge sharing among key stakeholders. They respond that Their College is on good status concerning employee relationship both externally and internally.

There is strong relationship among stakeholders internally and externally. Externally for example, the college has many sister universities and institutions such as Jimma university, Ethiopia Management institute, Ambo university, and Horomaya university. Internally, there is a formal social committee with five members and their own constitution. They argue that these all shows the strong employment relationship in the college.

- Generally, from the percentage and mean values of evaluation criteria 7 & 8, and interview data, there is good employment relationship in the college and this employment relationship facilitates knowledge sharing.

4.4.4. Regarding Employee Assignment

➤ Evaluation criteria 9: The current assignment committees are free, neutral and well educated & experienced

i. Percentage and average values

No	Data Analysing Tools	Evaluators											
		Instructors				TR&C				Practitioners			
		Values/grades (I)	Number of raters (2)	Total values (1x2)	$RF(\frac{2}{n})$	Values/grades (I)	Number of raters (2)	Total values (1x2)	$RF(\frac{2}{n})$	Values/grades (I)	Number of raters (2)	Total values (1x2)	$RF(\frac{2}{n})$
1.													
2.		1	2	2	11	1	0	0	0	1	11	11	25
		2	3	6	17	2	1	2	14	2	8	16	18
		3	5	15	28	3	3	6	43	3	9	27	21
		4	6	24	33	4	0	0	0	4	10	40	22
		5	2	10	11	5	3	15	43	5	6	30	14
3.	Total		18	57	100%		7	23	100%		44	124	100%
4.	Average values			3.167				3.28				2.8	

Table 25: Assessing to what extent employee assignment committees are free, neutral, and well experienced

a. Percentage Values

From the table, majority of practitioners think that the assignment committees are not free, neutral and well educated & experienced; concerning TR&C, majority of them are not willing to give their idea on to what extent the assignment committees are free, neutral and well experienced; at the end majority of instructors agree that the current assignment committees are free, neutral and well experienced.

b. Average Values

From the frequency distribution table again, the lowest average value is the value given by practitioners and the highest average value is what given by TR&C. The average value given by instructors is more than that of practitioners and less than the average value given by TR&C. The grand mean (3.08) shows that all knowledge workers gave the average value of 3.08, which shows their silence concerning the statement.

- Generally, majority of instructors agreed on the proposed statement; majority of TR&C prefers to keep quite; and finally majority of practitioners disagrees on the statement.
- This implies that workers indifferent teams perceive the current assignment committees in different ways.
- From the current condition of the college, the assignment committees are responsible to assign only practitioners.
- Both instructors and TR&C are formally hired from external labour market through intensive recruitment and selection. They have little relationship with the assignment committees concerning placement.
- When we see the value each stratum gave from this frequency distribution table, those who gave less value are practitioners who have the direct relationship with the committees.
- From this very fact, it is possible to take the perception that the existing assignment committees have some problem. They may not be free, neutral and/or well experienced or educated.

ii. Variances and standard deviations

No	evaluators	Formulas to calculate both variances and standard deviations			
1.	Practitioners	Evaluation score	Sample mean(\bar{x})	$(x-\bar{x})$	$((x-\bar{x})^2)n$
		1	2.8	-1.8	35.64
		2	2.8	-0.8	5.12
		3	2.8	0.2	0.36
		4	2.8	1.2	14.4
		5	2.8	2.2	29.040

		$\varepsilon(x_i - \bar{x})^2 = 84.56$ $s^2 = \frac{84.56}{44-1} = 1.922$ $S = \sqrt{1.922} = 1.386$			
2.	Instructors	Evaluation score	Sample mean(\bar{x})	($x - \bar{x}$)	($x - \bar{x}$) ² n
		1	3.167	-2.167	5.058
		2	3.167	-1.167	4.086
		3	3.167	-0.167	0.835
		4	3.167	0.833	4.163
		5	3.167	1.833	6.720
		$\varepsilon(x_i - \bar{x})^2 = 20.862$ $s^2 = \frac{20.862}{18-1} = 1.227$ $S = \sqrt{1.227} = 1.1077$			
3.	TR&C	Evaluation score	Sample mean(\bar{x})	($x - \bar{x}$)	(($x - \bar{x}$) ²)n
		1	3.286	-2.286	0
		2	3.286	-1.286	1.6537
		3	3.286	-0.286	0.245
		4	3.286	0.714	0
		5	3.286	1.714	8.813
		$\varepsilon(x_i - \bar{x})^2 = 10.7117$ $s^2 = \frac{10.7117}{7-1} = 1.785$ $S = \sqrt{1.785} = 1.336$			

Table 26: Standard deviations computed on to what extent employee assignment committees are free, neutral, and well experienced

From this standard deviation table, the values given by each TR&C are more deviate from the standard than the value given by each instructors and practitioners.

This shows that TR&C have very diversified view about to what extent the current assignment committee is free, neutral well educated and experienced.

- Evaluation criteria 11: Workers are assigned according to their profession/field of specialization.

iii. Percentage and mean values

No	Data analysing instruments	Evaluators											
		Instructors				TR&C				Practitioners /professionals			
		Values/grades (1)	Number of raters (2)	Total values (1x2)	RF($\frac{2}{n}$)	Values/grades (1)	Number of raters (2)	Total values (1x2)	RF($\frac{2}{n}$)	Values/grades (1)	Number of raters (2)	Total values (1x2)	RF($\frac{2}{n}$)
2.		1	3	3	17	1	0	0	0	1	11	11	25
		2	4	8	22	2	2	4	29	2	15	30	34
		3	4	12	22	3	2	6	29	3	7	21	16
		4	4	16	22	4	2	8	28	4	5	20	11
		5	3	15	17	5	1	5	14	5	6	30	14
3.	Total		18	54		7	23	100%		44	112	100%	
4.	Average values			3			3.286					2.545	

Table 27: Frequency distribution table regarding to what extent workers are assigned according to their profession

a. Percentage Values

From this frequency distribution table, majority of practitioners deny that workers are assigned according to their profession/field of specialization as that of in table 25. On the other hand, majority of TR&C (42%) believe that workers are assigned according to their profession. At the end, 29% instructors deny the existence of professional based employee assignment and 29% of instructors support the existence the statement that workers are assignment according to their field of study.

b. Average Values

From the average values, practitioners disagree on the statement; instructors prefer to be silence; and TR&C agreed that workers are assigned according to their field of study.

- From this, majority of practitioners (all are directly assigned by the current assignment committee) deny that there is professional based employee assignment in the college. This idea support what was indicated on tableD1 above& this shows that the existence of misplacement.

iv. Variances and standard deviations

No	Evaluators	Different statistical formulas			
1.	Practitioners	Evaluation score	Sample mean(\bar{y})	($y - \bar{y}$)	$((x - \bar{x})^2)n$
		1	2.5	-1.5	24.750
		2	2.5	-0.50	3.750
		3	2.5	0.5	1.750
		4	2.5	1.5	11.25
		5	2.5	2.5	37.5
		$\sum (y_i - \bar{y})^2 = 79$ $s^2 = \frac{79}{44-1} = 1.837$ $S = \sqrt{1.837} = 1.355$			
2.	Instructors	Evaluation score	Sample mean(\bar{y})	($y - \bar{y}$)	$((y - \bar{y})^2)n$
		1	3	-2	12
		2	3	-1	4
		3	3	0	0
		4	3	1	4
		5	3	2	12
		$\sum (y_i - \bar{y})^2 = 32$ $s^2 = \frac{32}{18-1} = 1.882$ $S = \sqrt{1.882} = 1.371$			
3.	TR&C	Evaluation score	Sample mean(\bar{y})	($y - \bar{y}$)	$((y - \bar{y})^2)n$
		1	3.286	-2.286	0
		2	3.286	-1.286	3.308
		3	3.286	-0.286	0.164
		4	3.286	0.714	1.028
		5	3.286	1.714	2.838
		$\sum (y_i - \bar{y})^2 = 7.338$ $s^2 = \frac{7.338}{7-1} = 1.223$ $S = \sqrt{1.223} = 1.105$			

Table 28: Standard deviation on to what extent Workers are assigned according to their profession

From this standard deviation table, the value given by each and every TR&C on to what extent knowledge workers are assigned according to their certified knowledge are more deviated from the standard than the value given by practitioners and instructors. The next and third diversified values from mean respectively are the values given by practitioners and instructors.

- The values given by TR&C are more similar and very close to the average value than the values given on the statement by practitioners and instructors.
- This shows that knowledge workers in Training, Research, and Consultancy Core Process have similar feeling on the statement than the other two strata.

v. Association between to what degree assignment committees are free, neutral/well educated and experienced and employees current task/work/or position

No	Respondents	Different statistical formulas		
1.	Practitioners	$x_i - \bar{x}$	$y_i - \bar{y}$	$(x_i - \bar{x})(y_i - \bar{y})$
		-2.432	-1.5	3.648
		-1.432	-0.50	0.716
		-0.432	0.5	-0.216
		0.568	1.5	0.852
		1.568	2.5	3.92
		$\sum (x_i - \bar{x})(y_i - \bar{y}) = 8.92$ $S_{xy} = \frac{S_{xy} = \sum (x_i - \bar{x})(y_i - \bar{y})}{n-1} = 8.92/43 = 0.2074$ Accordingly, $r_{xy} = \frac{S_{xy}}{S_x S_y}$ $r_{xy} = \frac{0.230}{1.386 \times 1.355} = \frac{0.230}{1.850} = 0.112$		
2.	Instructor	$x_i - \bar{x}$	$y_i - \bar{y}$	$(x_i - \bar{x})(y_i - \bar{y})$
		-2.167	-2	4.334
		-1.167	-1	1.167
		-0.167	0	0
		0.833	1	0.833
		1.833	2	3.666
		$\sum (x_i - \bar{x})(y_i - \bar{y}) = 10$ $S_{xy} = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{n-1} = 10/17 = 0.58823$ Accordingly, $r_{xy} = \frac{S_{xy}}{S_x S_y} = \frac{0.58823}{(1.1077)(1.371)} = 1.51865$		
3.	TR&C	$x_i - \bar{x}$	$y_i - \bar{y}$	$(x_i - \bar{x})(y_i - \bar{y})$
		-2.286	-2.286	5.2257
		-1.286	-1.286	1.6537
		-0.286	-0.286	0.0817
		0.714	0.714	0.5097
		1.714	1.714	2.9377
		$\sum (x_i - \bar{x})(y_i - \bar{y}) = 10.4085$ $S_{xy} = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{n-1} = 10.4085/6 = 1.734$ Accordingly, $r_{xy} = \frac{S_{xy}}{S_x S_y}$ $r_{xy} = \frac{1.734}{(1.336)(1.105)} = \frac{1.734}{1.47628} = 1.00$		

Table 29: Employee Assignment Vs knowledge sharing

As it can be seen from the above correlation table, the correlation value obtained from the response of practitioners shows that there is a weak relationship between the current employee assignment trends and the flow of knowledge from the source to the immediate users. According to the 'r' value computed from the response of instructors, there is still a weak positive correlation between the employee assignment practice and knowledge sharing trends; but the value is by far greater than that of practitioners. At the end, the correlation value obtained from the TR&C indicates that there is a perfect positive correlation between the current employee assignment and the knowledge sharing practices.

vi. Interview data

Under this dimension, the interviewees were asked to reflect their idea on whether employees assigned properly and to what extent this assignment facilitates knowledge sharing. The director and vice director said that the assignment committees are free, neutral and well experienced. They are elected temporarily whenever the need arises. The committees are five in number. While three of them are nominated by the top management of the college, two of them are selected by the coming together of workers.

Regarding employment policy, they replied that the college has no guideline that leads the workers' assignment. They use both labour law and Civil servant proclamation and annuals of Oromia Regional State Civil Service Bureau.

According to the director of the college, there is also employee misplacement in the college. He said that those who are law and accounting in profession are assigned as documentation facilitators in different teams. In this case they work simply by observing what others do and the knowledge they gain from formal learning is remain buried in their mind. The reason they put is that they have no place to use the knowledge in the colleges. The college prefers to make them work by the knowledge the gain from informal learning rather than downsizing them.

Generally,

- Majority of practitioners (they are the one with direct contact with the assignment committees) belief that the current employer assignment committees are not free, neutral, well educated and experienced. The way they assign workers endanger knowledge flow. Knowledge workers are assigned without their field of specialization.
- The college is not in a position to produce its own internal policy (based on the regional and/or federal labor and civil servant proclamation).
- From the percentage values, mean values, and interview data, there is a poor employee assignment practice in the college. The association between the current employee assignment practice of the college and its knowledge sharing practice is also a weak positive.
- From the interview also, there is misplacement in the college. Regarding misplacement, the college prefers assigning workers on the work where they can perform better by the knowledge they gain from informal learning rather than downsizing them.

4.4.5. Regarding Putting Employees on Position

- Evaluation criteria 12: Which mechanism the college follows to bring knowledge workers to position?

No	Respondents	Evaluation criteria	Number of respondents	RF
1	Instructors	Nomination	12	67
		Election	0	0
		Any Other Option	4	22
		DR	2	11
		Total	18	100%
2	TR&C	Nomination	4	67
		Election	0	0
		Any Other Option	2	29
		DR	1	14
		Total	7	100%
3	Practitioners	Nomination	17	39
		Election	10	23
		Any Other Option	12	27
		DR	5	11
		Total	44	100%

Table 30: Frequency distribution table regarding mechanisms used by the college to bring workers to position

From this frequency table, majority of practitioners, instructors & TR&C (67%, 39%, &67% respectively) belief that the college use nomination to bring workers to some sort of positions. No single instructor said that election is used as a mechanism of positioning knowledge workers.

Although 17% practitioners said that team members have an opportunity to elect their team leaders, I learned from the interview I conducted, from my practical observation and from their BPR document that all teams in PSCO has no opportunity left for them in the history the college(BPR document, 2003).

- Evaluation criteria 14: Which mechanism contributes more to knowledge sharing?

i. Relative Frequencies

No	Respondents	Evaluation criteria	Number of respondents	RF
1.	Instructors	Nomination	0	0
		Election	15	83
		Any Other Option	1	6
		DR	2	11
		Total	18	100%
2.	TR&C	Nomination	0	0
		Election	4	57
		Any Other Option	1	14
		DR	2	29
		Total	7	100%
3.	Practitioners	Nomination	8	18
		Election	17	39
		Any Other Option	11	25
		DR	8	18
		Total	44	100%

Table 31: Frequency distribution table regarding the best appreciated mechanism of positioning knowledge workers

From table 31, majority of practitioners, instructors & TR&C (83%, 39%, & 57% respectively) belief that election is the best mechanism of bringing knowledge workers to team leaders and any other positions in the organization to make knowledge diffusion better.

ii. Interview Data

For the questions raised concerning what mechanisms they use to bring employees to position at to what extent this mechanism facilitate knowledge sharing, they answered that although what they belief in is election, what is practically implemented is nomination because the BPR manual of the college says team coordinators should be nominated by the top management (PBR document, 2003).

- Generally, the college use nomination as a mechanism of bringing workers to team leaders. But, almost all knowledge workers agree that the college should use election as a mechanism of employee positioning.

4.4.6. Regarding Organizational Routines (Policies, Procedures, Programs, Rules, and Regulations)

- Evaluation criteria 15: The College has sound systems, policies, procedures, and programs to make knowledge flow effective and efficient.

i. Percentage Values and Average Values

No	Data Analysing tools	Evaluators											
		Instructors				TR&C				Practitioners			
		Values/grades (1)	Number of raters (2)	Total values (1x2)	$RF(\frac{2}{n})$	Values/grades (1)	Number of raters (2)	Total values (1x2)	$RF(\frac{2}{n})$	Values/grades (1)	Number of raters (2)	Total values (1x2)	$RF(\frac{2}{n})$
1.													
2.		1	1	1	5	1	1	1	14	1	3	3	7
		2	5	10	28	2	2	4	29	2	7	14	16
		3	4	12	23	3	2	6	29	3	13	39	30
		4	7	28	39	4	0	0	0	4	11	44	25
		5	1	5	5	5	2	10	28	5	8	40	18
3.		DR	0	-	100%	DR	0	-	100%	DR	2	-	4
4.	Total		18	56				21			44 42*	140	100%
5.	Average values			3				3				140/42*(3.3)	

Table 32: Examining to what degree organizational routines facilitate knowledge sharing
 NB:42*were used to compute the average value.

a. Percentage Values

According to table 31, the value given by practitioners & instructors are similar. This means majority of practitioners and instructors (43% and 43% respectively) belief that the college has effective organizational routines. However, majority of TR&C (43%) disagree that the college has effective organizational routines.

b. Average Values

From the average value, both instructors and TR&C gave a similar average value (3) which implies that on average each instructors and TR&C was not willing to give their idea. The average value those practitioners gave regarding to what extent the college has sound systems, policies, procedures, and programs is 3.3.

Both percentage and average values shows that, more than others, practitioners agree that the current organizational routines are sound enough to undertake the day-to-day activities of the college. On the other hand, TR&C do not think that there are effective organizational routines.

ii. Variances and Standard Deviations

No	Evaluators	Formulas to compute variances and standards deviations			
		Evaluation score	Sample mean(\bar{x})	$(x-\bar{x})$	$((x-\bar{x})^2)n$
	Practitioners	1	3.3	-2.3	15.870
		2	3.3	-1.3	11.830
		3	3.3	-0.3	11.70
		4	3.3	0.7	5.390
		5	3.3	1.7	23.120
		$\varepsilon(x_i - \bar{x})^2 = 67.91$ $s^2 = \frac{67.91}{42-1} = 1.656$ $S = \sqrt{1.656} = 1.286$			
	Instructors	1	3	-2	4
		2	3	-1	5
		3	3	0	0
		4	3	1	7
		5	3	2	4
		$\varepsilon(x_i - \bar{x})^2 = 20$ $s^2 = \frac{20}{18-1} = 1.176$ $S = \sqrt{1.176} = 1.084$			
	TR&C	1	3	-2	4
		2	3	-1	2
		3	3	0	0
		4	3	1	0
		5	3	2	8
		$\varepsilon(x_i - \bar{x})^2 = 14$ $s^2 = \frac{14}{7-1} = 2.333$ $S = \sqrt{2.333} = 1.527$			

Table 33: Variances and standards deviations computed on organizational routines

From both variance and standard deviation table, it is possible to learn that the values given by each TR&C are highly dispersed from the standard when related with the value given by instructors and practitioners. On the contrary, the value given by each instructor is more near to the average value.

- While instructors have to some extent related idea concerning to what extent the college has effective routines, TR&C has very diversified idea in relation to the other two strata.
- Evaluation criteria 16: The current organizational routines facilitate knowledge flow from the source to the end the users.

i. Relative Frequencies and Average Values

No	Data Analysing tools	Evaluators											
		Instructors				TR&C				Practitioners /professionals			
		Values/grades (1)	Number of raters (2)	Total values (1x2)	RF($\frac{2}{n}$)	Values/grades (1)	Number of raters (2)	Total values (1x2)	RF($\frac{2}{n}$)	Values/grades (1)	Number of raters (2)	Total values (1x2)	RF($\frac{2}{n}$)
1.													
2.		1	2	2	11	1	1	1	14	1	7	7	16
		2	4	8	22	2	2	4	29	2	5	10	11
		3	4	12	22	3	2	6	29	3	10	30	23
		4	7	28	39	4	0	0	0	4	14	56	32
		5	1	5	6	6	5	2	10	28	5	7	35
3.		DR	0	-	100%	DR	0	-	100%	DR	1	-	2
4.	Total		18	55	100%		7	21	100%		44	138	100%
5.	Average values			3			3					138/43* (3.2)	

Table 34: Frequency distribution table regarding organizational routines
 NB: 43* was used to calculate the average value of professionals.

a. Percentage Values

As it can be understood from the table, majority of practitioners & instructors gave very similar percentage values regarding to what extent the current organizational routines are effective and at the same time facilitate knowledge sharing among different stakeholders. While majority of practitioners and instructors (in both criteria 15 and 16) agrees that the current the current organizational routines facilitate knowledge flow from the source to the end the users, majority of TR&C reflect their disagreement on both criteria.

b. Average Values

The average values each stratum gave on both evaluation criteria 15&16 are very similar which are [(3.3&3.2), 3 &3 for practitioners, instructors and TR&C respectively]. This shows that they evaluate the statement under consideration in a similar fashion on average. According to the average values, they almost all prefer at least to be silent and at most disagree.

ii. Variances and Standard Deviations

No	Evaluators	Formulas for computing variances and standard deviations			
	practitioners	Evaluation score	Sample mean(\bar{y})	$(y-\bar{y})$	$((y-\bar{y})^2)n$
		1	3.2	-2.2	33.880
		2	3.2	-1.2	7.2
		3	3.2	-0.2	0.4
		4	3.2	0.8	8.96
		5	3.2	1.8	3.8
		$\varepsilon(y_i-\bar{y})^2 = 54.24$ $s^2 = \frac{54.24}{43-1} = 1.291$ $S = \sqrt{1.291} = 1.136$			
	Instructors	Evaluation score	Sample mean(\bar{y})	$(y-\bar{y})$	$((y-\bar{y})^2)n$
		1	3	-2	8
		2	3	-1	4
		3	3	0	0
		4	3	1	7
		5	3	2	4
		$\varepsilon(y-\bar{y})^2 = 23$ $s^2 = \frac{23}{18-1} = 1.353$ $S = \sqrt{1.353} = 1.1631$			
	TR&C	Evaluation score	Sample mean(\bar{y})	$(y-\bar{y})$	$((y-\bar{y})^2)n$
		1	3	-2	4
		2	3	-1	2
		3	3	0	0
		4	3	1	0
		5	3	2	8
		$\varepsilon(y_i-\bar{y})^2 = 14$ $s^2 = \frac{14}{7-1} = 2.333$ $S = \sqrt{2.333} = 1.5274$			

Table 35: Variance and standard deviations

As that of criteria 15, the values given by each TR&C are highly dispersed from the standard value when compared with those practitioners and instructors. On the other hand, the values given by practitioners are the less scattered values when related to the other two strata.

While TR&C have diversified ideas on the effectiveness of organizational routines and its power to facilitate knowledge sharing, instructors have related idea on the issue raised on evaluation criteria 16.

iii. Associations between the reward package and the knowledge sharing practice in the college

In the case organizational routines, the independent variable(x- value) is the value given onto what extent the college has sound Policies, Procedures, Programs, Rules, and Regulations and the dependent variable(y-value) is the value given on what extent this organizational routines facilitate knowledge sharing.

No	Evaluators	Different statistical formulas		
	Practitioners	$x_i - \bar{x}$	$y_i - \bar{y}$	$(x_i - \bar{x})(y_i - \bar{y})$
		-2.3	-2.2	5.06
		-1.3	-1.2	1.56
		-0.3	-0.2	0.06
		0.7	0.8	0.56
		1.7	1.8	3.06
		$\frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{n-1} = \frac{10.3}{43} = 0.245$ Accordingly, $r_{xy} = \frac{s_{xy}}{s_x s_y} = \frac{0.245}{(1.286)(1.136)} = \frac{0.245}{1.461} = 0.168$		
	Instructor	$x_i - \bar{x}$	$y_i - \bar{y}$	$(x_i - \bar{x})(y_i - \bar{y})$
		-2	-2	4
		-1	-1	1
		0	0	0
		1	1	1
		2	2	4
		$\frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{n-1} = \frac{10}{17} = 0.588$ $r_{xy} = \frac{s_{xy}}{s_x s_y} = \frac{0.588}{(1.084)(1.1631)} = \frac{0.588}{1.261} = 0.466$		
	TR&C	$x_i - \bar{x}$	$y_i - \bar{y}$	$(x_i - \bar{x})(y_i - \bar{y})$
		-2	-2	4
		-1	-1	1
		0	0	0
		1	1	1
		2	2	4
		$\frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{n-1} = \frac{10}{6} = 1.667$ Accordingly, $r_{xy} = \frac{s_{xy}}{s_x s_y} = \frac{1.667}{(1.527)(1.5274)} = \frac{1.667}{2.332} = 0.715$		

Table 36: Association between organizational routines and knowledge sharing trends

Based on the correlation table developed by Mark S., Philip L. & Adrian T., (2007), the ‘r’ values computed from the response of practitioners indicate that there is a very weak correlation between the current organizational routines and knowledge sharing practice. According to the correlation value obtained from the response of instructors, the existing organizational routines still has a weak positive association with knowledge sharing; but better than those of practitioners. At the end, the correlation value obtained from the response of TR&C indicates that the current organizational routines have a strong positive relationship with the knowledge sharing trends among different knowledge workers.

iv. Interview data

Here, the interviewees were asked to what extent the organizational routines are effective in facilitating knowledge creation and then knowledge sharing. According to the interviewees’ idea, there are no intentionally designed organizational routines for the very purpose of knowledge creation and knowledge sharing. They added, “Although the existing organizational routines are prepared for another purpose, they are not this much obstacle for the flow of knowledge and/or information from one team/individual to the other team/ individual.”

- Generally, from both the percentage and mean values of criteria 15 & criteria 16, and the data obtained from interview, the college has no intentionally designed organizational routines for the sake of knowledge sharing. The current organizational routines are hardly support the flow of knowledge from the source to end users. The college is also not aware of the role of organizational routines in facilitating knowledge sharing practices.

4.4.7. Regarding Information Technologies

➤ Evaluation criteria 18: The College has adequate IT infrastructures, well educated, and experienced IT technologist.

i. Percentage and average values

No	Evaluators	Evaluators											
		Instructors				TR&C				Practitioners			
		Values/grades (1)	Number of raters (2)	Total values (1x2)	$RF(\frac{2}{n})$	Values/grades (1)	Number of raters (2)	Total values (1x2)	$RF(\frac{2}{n})$	Values/grades (1)	Number of raters (2)	Total values (1x2)	$RF(\frac{2}{n})$
1.													
2.		1	1	1	6	1	0	0	0	1	2	2	5
		2	4	8	22	2	1	2	14	2	3	6	7
		3	5	15	28	3	2	6	29	3	4	12	9
		4	6	24	33	4	2	8	29	4	12	48	27
		5	2	10	11	5	2	10	28	5	22	110	50
		DR	0	-	-	DR	0	-	-	DR	1	178	2
3.	Total		18	58	100%		7	26	100%		44 43*	178	100%
4.	Average values			3.2				3.7				43* (4.12)	

Table 37: Examining the education and experience level of IT technologist

a. Percentage Values

As it can be understood from table 37, majority of practitioners, instructors & TR&C (77%, 44% and 57% respectively) agrees that the college has adequate IT infrastructures and well educated and experienced IT technologists

b. Average Values

From the percentage values, majority of knowledge workers agree that the College has adequate IT infrastructures, well educated, and experienced IT technologist.

➤ From the both percentage & mean values, it is possible to say that majority of knowledge workers agree that the college has adequate IT infrastructures and IT technologies.

ii. Variances and Standard Deviations

No	Evaluators	Different statistical formulas			
1.	Practitioners	Evaluation score	Sample mean(\bar{x})	$(x-\bar{x})$	$((x-\bar{x})^2)n$
		1	4.12	-3.12	19.469
		2	4.12	-2.12	13.483
		3	4.12	-1.12	5.018
		4	4.12	-0.12	1.44
		5	4.12	0.8	15.400
		$\sum(x_i-\bar{x})^2 = 54.81$ $s^2 = \frac{54.81}{43-1} = 1.305$ $S = \sqrt{1.305} = 1.14$			
2.	Instructors	Evaluation score	Sample mean(\bar{x})	$(x-\bar{x})$	$((x-\bar{x})^2)n$
		1	3.2	-2.2	4.84
		2	3.2	-1.2	5.760
		3	3.2	-0.2	-0.2
		4	3.2	0.8	3.84
		5	3.2	1.8	6.48

		$\epsilon(x_i - \bar{x})^2 = 20.72$ $s^2 = \frac{20.72}{18-1} = 1.219$ $S = \sqrt{1.219} = 1.104$			
3.	TR&C	Evaluation score	Sample mean (\bar{x})	$(x - \bar{x})$	$((x - \bar{x})^2)n$
		1	3.7	-2.7	0
		2	3.7	-1.7	2.89
		3	3.7	-0.7	0.98
		4	3.7	0.3	0.18
		5	3.7	1.3	3.38
		$\epsilon(x_i - \bar{x})^2 = 7.43$ $s^2 = \frac{7.43}{7-1} = 1.238$ $S = \sqrt{1.238} = 1.1126$			

Table 38: Computing variances and standard deviations

From this standard deviation values, the values given by each practitioners are highly scattered from the mean value than those of instructors and TR&C. On the contrary, the values given by TR&C are the less dispersed values in relation to the other two strata.

- This shows that knowledge workers in training, research, and consultancy core process have a relatively similar feeling about the statement than practitioners and instructors.
- Evaluation criteria 19: The current IT technology of the college facilitates knowledge sharing

i. Averages and Relative Frequencies

No	Evaluators	Evaluators											
		Instructors				TR&C				Practitioners /professionals			
		Values/grades (1)	Number of raters (2)	Total values (1x2)	RF($\frac{2}{n}$)	Values/grades (1)	Number of raters (2)	Total values (1x2)	RF($\frac{2}{n}$)	Values/grades (1)	Number of raters (2)	Total values (1x2)	RF($\frac{2}{n}$)
2.		1	1	1	5.5	1	0	1	0	1	3	3	1
		2	1	2	5.5	2	1	2	14.5	2	4	8	9
		3	2	6	11	3	2	6	28.5	3	6	18	14
		4	12	48	67	4	2	8	28.5	4	14	56	32
		5	2	10	11	5	2	10	28.5	5	16	80	36
		DR	0	-	-	DR	0	-	-	DR	1	-	2
3.	Total		18	67	100%		7	27	100%		44	165	100%
4.	Average values			3.7				3.857				165/43*	(3.8)

Table 39: Frequency distribution table of the Current IT technology and knowledge sharing

a. Percentage Values

Based on the percentage values, majority of knowledge workers (68% practitioners, 78% instructors and 57% TR&C) agree that the existing IT infrastructure facilitate knowledge sharing.

Regarding disagreement only 15%, 10% and 14.5% practitioners, instructors and TR&C respectively disagree that the current IT infrastructure do not facilitate knowledge sharing. The remaining ones are not in a position to give their idea on the statement.

b. Mean Values

According to the average values, the three strata gave very similar average value. All practitioners, instructors and IT&C reflect their agreement on the statement by giving average values (3.8, 3.7 and 3.857) respectively.

- Both percentage and average values indicate that the current IT infrastructure accelerate knowledge sharing among key stakeholders.

iii. Variances and Standard Deviations

No	Evaluators	Formulas to compute variances and then standard deviations			
	practitioners	Evaluation score	Sample mean(\bar{y})	$(y-\bar{y})$	$((y-\bar{y})^2)_n$
		1	3.8	-2.8	23.52
		2	3.8	-1.8	12.96
		3	3.8	-0.8	3.84
		4	3.8	0.2	0.56
		5	3.8	1.2	23.04
		$\epsilon(y_i-\bar{y})^2 = 63.92$ $s^2 = \frac{54.263.924}{43-1} = 1.522$ $S = \sqrt{1.522} = 1.233$			
	Instructors	Evaluation score	Sample mean(\bar{y})	$(y-\bar{y})$	$((y-\bar{y})^2)_n$
		1	3.7	-2.7	7.29
		2	3.7	-1.7	2.89
		3	3.7	-0.7	0.98
		4	3.7	0.3	1.080
		5	3.7	1.3	3.380
		$\epsilon(y-\bar{y})^2 = 15.62$ $s^2 = \frac{15.62}{18-1} = 0.919$ $S = \sqrt{0.919} = 0.958$			
	TR&C	Evaluation score	Sample mean(\bar{y})	$(y-\bar{y})$	$((y-\bar{y})^2)_n$
		1	3.8	-2.8	0
		2	3.8	-1.8	3.24
		3	3.8	-0.8	1.28
		4	3.8	0.2	0.08
		5	3.8	1.2	2.88
		$\epsilon(y_i-\bar{y})^2 = 7.48$ $s^2 = \frac{7.48}{7-1} = 1.247$ $S = \sqrt{1.247} = 1.116$			

Table 40: variances and standard deviations

From this variance standard deviation table, practitioners gave a much-diversified value when related with both instructors and TR&C. In contrary, instructors gave very similar values (very close to the average value) in relation to the other two strata.

- This shows that instructors have similar feeling on to what extent the current IT infrastructure facilitate knowledge sharing.

iv. Regarding The Correlation Between The Current IT Infrastructures And To What Extent This IT Infrastructure Facilitate Knowledge Sharing

Under this dimension of knowledge sharing, the independent variable is the value given for the current IT infrastructure and dependent variable is the values given on to what extent this IT infrastructure facilitate knowledge sharing. Accordingly, the computation looks like the following:

No	Evaluators	Different Correlation Formulas		
1.	Practitioners	$x_i - \bar{x}$	$y_i - \bar{y}$	$(x_i - \bar{x})(y_i - \bar{y})$
		-3.12	-2.8	8.736
		-2.12	-1.8	3.816
		-1.12	-0.8	0.896
		-0.12	0.2	-0.024
		0.8	1.2	0.960

		$\sum (x_i - \bar{x})(y_i - \bar{y}) = 14.384$ $\frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{n-1} = 0.342$ $n=43 \text{ here; then } n-1=42$ <p>Accordingly,</p> $r_{xy} = \frac{S_{xy}}{S_x S_y}$ $r_{xy} = \frac{0.342}{(1.14)(1.233)} = \frac{0.342}{1.406} = 0.243$		
2.	Instructors	$x_i - \bar{x}$	$y_i - \bar{y}$	$(x_i - \bar{x})(y_i - \bar{y})$
		-2.2	-2.7	5.94
		-1.2	-1.7	2.040
		-0.2	-0.7	0.14
		0.8	0.3	0.24
		1.8	1.3	2.340
		$\sum (x_i - \bar{x})(y_i - \bar{y}) = 10.7$ $\frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{n-1} = 10.7/17 = 0.629$ <p>Accordingly,</p> $r_{xy} = \frac{S_{xy}}{S_x S_y}$ $r_{xy} = \frac{0.629}{(1.104)(1.0958)} = \frac{0.629}{1.058} = 0.595$		
3.	TR&C	$x_i - \bar{x}$	$y_i - \bar{y}$	$(x_i - \bar{x})(y_i - \bar{y})$
		-2.7	-2.8	0
		-1.7	-1.8	3.060
		-0.7	-0.8	0.560
		0.3	0.2	0.06
		1.3	1.2	1.560
		$\sum (x_i - \bar{x})(y_i - \bar{y}) = 5.24$ $\frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{n-1} = 5.24/6 = 0.873$ <p>Accordingly, $r_{xy} = \frac{S_{xy}}{S_x S_y}$</p> $r_{xy} = \frac{0.873}{(1.1126)(1.116)} = \frac{0.873}{1.242} = 0.703$		

Table 41: The current IT infrastructure Vs knowledge sharing

From the 'r' value obtained from the response of practitioners, there is a weak positive correlation between the current IT infrastructure and knowledge sharing practice; according to the 'r' value obtained from the response of instructors, there a strong positive relationship between the existing IT infrastructure and the knowledge sharing trends; finally, the 'r' value obtained from the response of TR&C indicates that there is a very strong association between the IT infrastructures and the knowledge sharing trends.

- On average, the 'r' value computed from practitioners, instructors and TR&C response indicate that there is strong positive relationship between IT infrastructures and the knowledge sharing practice.

v. Interview Data

Here, the respondents were being asked to answer on whether the current IT infrastructures facilitate knowledge sharing practice. From the interview, the college has invested a huge amount of capital on expanding different IT infrastructures. The two directors added that “They able to save much knowledge by working in collaboration with more experienced institutions such as Jima University and Oromia ICT agency.”

- Generally, from the percentage & mean values of criteria 18 and criteria 19, correlation values and interview data, it is possible to summarize that the current technological infrastructure facilitate knowledge sharing practices.

4.4.8. Regarding Organization Structure

- Evaluation criteria 20: The current organization structure of the College facilitates knowledge sharing

i. Percentages and Average Values

No	Data analysing instruments	Evaluators											
		Instructors				TR&C				Practitioners /professionals			
1.		Values/grades (1)	Number of raters (2)	Total values (1x2)	RF($\frac{2}{n}$)	Values/grades (1)	Number of raters (2)	Total values (1x2)	RF($\frac{2}{n}$)	Values/grades (1)	Number of raters (2)	Total values (1x2)	Relative frequency($\frac{2}{n}$)
2.		1	0	0	0	1	0	0	0	1	4	4	9
		2	3	6	17	2	2	4	29	2	4	8	9
		3	6	18	33	3	1	3	14	3	13	39	30
		4	5	20	28	4	2	8	29	4	14	56	32
		5	4	20	22	5	2	10	28	5	8	40	18
	DR	0	-	-	DR	0	-	-	DR	1	-	2	
3.	Total		18	64	100%		7	25	100%		44 43*	147	100 %
4.	Average Values			3.556				3.57				147/43* (3.4)	

Table 42: Frequency distributions of the current organization structure & knowledge sharing

Based on the percentage values, majority of practitioners, instructors and TR&C (50%, 57%, and 50 % respectively) agree that the current organization structure facilitate knowledge sharing. According to the average values, all practitioners, instructors, and TR&C express their agreement by giving the average values of 3.4, 3.556, and 3.57 respectively.

ii. Variances and Standard Deviations

No	Evaluators	Different statistical formulas			
1.	Practitioners	Evaluation score	Sample mean(\bar{x})	$(x_i - \bar{x})$	$(x_i - \bar{x})^2 n$
		1	3.4	-2.4	23.04
		2	3.4	-1.4	11.76
		3	3.4	-0.4	1.28
		4	3.4	0.6	5.40
		5	3.4	1.6	30.72
$\epsilon(x_i - \bar{x})^2 = 72.20$ $s^2 = \frac{72.20}{43-1} = 1.719$ $S = \sqrt{1.719} = 1.311$					
2.	Instructors	Evaluation score	Sample mean(\bar{x})	$(x_i - \bar{x})$	$(x_i - \bar{x})^2 n$
		1	3.556	-2.556	0
		2	3.556	-1.556	7.263
		3	3.556	-0.556	1.855
		4	3.556	0.444	0.986
		5	3.556	1.444	8.341
$\epsilon(x_i - \bar{x})^2 = 18.445$ $s^2 = \frac{18.445}{18-1} = 1.085$ $S = \sqrt{1.085} = 1.0416$					
3.	TR&C	Evaluation score	Sample mean(\bar{x})	$(x_i - \bar{x})$	$(x_i - \bar{x})^2 n$
		1	3.57	-2.570	0
		2	3.57	-1.57	4.730
		3	3.57	-0.57	0.325
		4	3.57	0.430	0.370
		5	3.57	1.430	4.090
$\epsilon(x_i - \bar{x})^2 = 9.515$ $s^2 = \frac{9.515}{43-1} = 1.586$ $S = \sqrt{1.586} = 1.2593$					

Table 43: Standard Deviation

The standard deviation table shows that the value being given by practitioners do instructors and TR&C. give the most scattered values in relation to those. On the other hand, the values given by instructors are the less dispersed value when related with the value given by practitioners hand TR&C.

- This shows that instructors have similar ideas on the statement than both practitioners and TR&C.

iii. Data from Interview& Observation

I have had the opportunity to work with the current organization structure of the college for around five years. I am also there at this very moment. From this practical observation and the interview I conducted with the selected directors; I learned that the college adopted team based organizational structure. They argued that this structure employee empowerment and this empowerment in turn facilitate knowledge exchange among team members. They also use the concept of proximity in their office lay out. All team members are in one room as much as possible. If they cannot be in one room because of their number, they must be in the very close room according to their office lay out principle.

- Generally, from the mean values, percentage values and interview data, the current organization structure facilitates knowledge sharing.

4.4.9. Regarding Knowledge Edition and Disposition

- Evaluation criteria 21: The College has the trend of editing knowledge before they are shared.

i. Percentages and Mean Values

No	Statistical instruments	Evaluators											
		Instructors				TR&C				Practitioners			
		Values/grades (1)	Number of raters (2)	Total values (1x2)	$RF(\frac{2}{n})$	Values/grades (1)	Number of raters (2)	Total values (1x2)	$RF(\frac{2}{n})$	Values/grades (1)	Number of raters (2)	Total values (1x2)	$RF(\frac{2}{n})$
1.													
2.		1	3	3	17	1	1	1	14	1	4	4	9
		2	2	4	11	2	2	4	29	2	4	8	9
		3	7	21	39	3	3	9	43	3	13	39	30
		4	6	24	33	4	0	0	0	4	15	60	34
		5	0	0	0	5	1	5	14	5	8	40	18
		DR	0	-		DR	0	-		DR	0	-	-
3.	Total		18	52	100%		7	19	100%		44	151	100%
4.	Average values			2.8				2.7				3.432	

Table 44: Frequency Distribution of Knowledge Editing Trend

a. Percentage Values

Concerning practitioners, majority of them (52%) that the college has introduced effective knowledge edition tactics before it will be going to be shared; medium number of them (30%) are not willing to give their idea on the statement; at the end, a small amount of them (18%) at least disagree that the college has no trend of editing knowledge before they are shared.

When seen from the instructors perspectives, majority of them (39%) are not willing to give their idea on the statement; medium number of them(33%) agrees on the issue; at the end, a small amount of them(28%) at least disagree that the college has no trend of editing knowledge before they are shared.

For TR&C, 43% of them are not willing to give their idea on the statement; 43% disagrees on the issue; at the end, a small amount of them(14%) at least agree that the college has a trend of editing knowledge before they are shared.

b. Average Values

From the average majority of knowledge workers deny that the college has effective knowledge disposition mechanism.

In general, from the percentage values and average values, there is no knowledge editing trends in the college.

ii. Variance and Standard Deviation

Practitioners	Evaluation score	Sample mean(\bar{x})	$(x_i - \bar{x})$	$(x_i - \bar{x})^2 n$
	1	3.432	-2.432	23.658
	2	3.432	-1.343	7.215
	3	3.432	-0.432	2.426
	4	3.432	0.568	4.839
	5	3.432	1.568	19.669
	$\sum (x_i - \bar{x})^2 = 57.807$ $s^2 = \frac{57.807}{44-1} = 1.344$ $S = \sqrt{1.344} = 1.159$			
Instructors	Evaluation score	Sample mean(\bar{x})	$(x_i - \bar{x})$	$(x_i - \bar{x})^2 n$
	1	2.8	-1.880	10.603
	2	2.8	-0.880	1.549
	3	2.8	0.120	1.000
	4	2.8	1.120	7.526
	5	2.8	2.120	0
	$\sum (x_i - \bar{x})^2 = 20.678$ $s^2 = \frac{20.678}{18-1} = 1.216$ $S = \sqrt{1.216} = 1.1027$			
TR&C	Evaluation score	Sample mean(\bar{x})	$(x_i - \bar{x})$	$(x_i - \bar{x})^2 n$
	1	2.7	-1.7	2.89
	2	2.7	-0.7	0.98
	3	2.7	0.3	0.27
	4	2.7	1.300	0
	5	2.7	2.300	5.29
	$\sum (x_i - \bar{x})^2 = 9.43$ $s^2 = \frac{9.43}{7-1} = 1.572$ $S = \sqrt{1.572} = 1.2537$			

Table 45: Variance and standard deviation

From the table the value given by practitioners on the statement is highly scattered from the mean value and the value given by TR&C is the less dispersed value from the standard.

- This shows that TR&C of the college has more similar perception about the knowledge edition trend of the college than practitioners and instructors.

iii. Data From Interview

Concerning this issue, the interviewees answered, “The professionals in both education delivery core process and TR&C have a trend of updating different modules and training materials regularly.” They also said that the college has tried its best to expand the knowledge of knowledge workers (particularly those who work on IT & Accounting areas) by making them participate on different training programs. This helps knowledge workers to expand & edit their previous knowledge.

- Generally, from the mean values, percentage values and interview data, the college is very poor in its knowledge edition strategy.
- Evaluation criteria 22: The College has effective mechanism to dispose passive knowledge

i. Percentages and Average Values

No	Data analysing instruments	Evaluators											
		Instructors				TR&C				Practitioners /professionals			
		Values/grades (1)	Number of raters (2)	Total values (1x2)	$RF(\frac{2}{n})$	Values/grades (1)	Number of raters (2)	Total values (1x2)	$RF(\frac{2}{n})$	Values/grades (1)	Number of raters (2)	Total values (1x2)	$RF(\frac{2}{n})$
1.													
2.		1	3	3	16	1	0	0	0	1	6	6	14
		2	1	2	11	2	3	6	43	2	8	16	18
		3	5	15	26	3	3	9	43	3	16	48	36
		4	7	28	37	4	1	4	14	4	7	28	16
		5	2	10	10	5	0	0	0	5	6	30	14
		DR	0	-	-	-	DR	0	-	-	DR	1	-
3.	Total		18	58	100%		7	19	100%		44	128	100%
											43*		
4.	Average values			3.2				2.7				128/43* 3	

Table 46: Frequency distribution of knowledge disposition

Concerning practitioners, majority of them (36%) are not willing to give their idea on the statement under consideration; medium number of them (32%) disagrees that the college has knowledge disposition mechanism; at the end, a small amount of them (30%) agree that the college has a trend of disposing passive knowledge on time.

When seen from the instructors perspectives, majority of them (47%) agree that the college this mechanisms to dispose passive knowledge on time; medium number of them (26%) not willing to give their idea on the issue; at the end, a small amount of them (27%) disagree that the college has a trend of disposing passive knowledge before they are shared.

For TR&C, 43% of them are not willing to give their idea on the statement; 43% disagrees on the issue raised; at the end, a small amount of them(14%) agree that the college has a trend of disposing knowledge before they are shared.

No	Evaluators	Different statistical formulas			
		Evaluation score	Sample mean(\bar{x})	$(x_i - \bar{x})$	$(x_i - \bar{x})^2 n$
	Practitioners	1	3	-2	24
		2	3	-1	8
		3	3	0	0
		4	3	1	7
		5	3	2	24
		$\sum (x_i - \bar{x})^2 = 63$ $s^2 = \frac{63}{43-1} = 1.50$ $S = \sqrt{1.50} = 1.224$			
	Instructors	1	3.2	-2.2	14.52
		2	3.2	-1.2	1.440
		3	3.2	-0.2	0.200
		4	3.2	0.8	4.480
		5	3.2	1.8	6.480
		$\sum (x_i - \bar{x})^2 = 27.12$ $s^2 = \frac{27.12}{18-1} = 1.595$ $S = \sqrt{1.595} = 1.2629$			
	TR&C	1	2.7	-1.7	0
		2	2.7	-0.7	1.470
		3	2.7	0.3	0.270
		4	2.7	1.300	1.69
		5	2.7	2.300	0
		$\sum (x_i - \bar{x})^2 = 3.43$ $s^2 = \frac{3.43}{7-1} = 0.572$ $S = \sqrt{0.572} = 0.7563$			

Table 47: Frequency Distribution of Knowledge Disposition

ii. Variance and Standard Deviation

From the table, the value given by instructors on the statement is highly scattered from the mean value and the value given by TR&C is the less dispersed value from the standard.

- This shows that TR&C of the college has more similar perception about the knowledge edition trend of the college than practitioners and instructors.

iii. Interview Data

Regarding knowledge disposition, the director and the vice-director have told me that there is no knowledge disposition mechanism as a strategy. When mister of education and TEVT agencies of Oromia Regional State, either include or exclude some course/s and/or title/s, the college repeat the same thing to adjust itself with the program.

- This actually is one way of disposing passive knowledge. But, there is no means of identifying active knowledge from that of the passive ones.

According to my practical observations and the complain I heard from different instructors and trainers for a long period of time, almost all newly produced modules and training materials are the copy of the old ones. The writers simply copy from the old module using a copy command and, then pest it on the new one using the pest command.

To summarize, they follows the principle of adding the new wine in the old bottle Mark (1998). Rather than disposing the old knowledge/information, they directly bring it to the new one with a title change.

Generally,

From the percentage & mean values, majority of instructors and TR&C who are very close to both knowledge creation and knowledge disposition are either not willing to give their idea or disagrees that the college has knowledge disposition mechanism. Even majority of practitioners who are not this much near to knowledge creation (as those instructors and TR&C) are either not willing to give their view point or disagree on the statement.

The information obtained from the interview also confirms the same thing. According to the director and the vice director, the college is not awake to plan so that passive knowledge can be intentionally disposed without harming the college and other 3rd parties.

In general, the college is very weak in disposing passive knowledge. It has no strategy to identify passive knowledge from the active ones. This means, both passive and active knowledge are shared together.

4.4.10. Regarding Forbidden Knowledge

- Evaluation criteria²³: Do you think that the college has forbidden knowledge that is not allowed to be shared?

i. Percentage Values

No	Respondents	Evaluation criteria	Number of respondents	RF
1..	Instructors	Yes	2	11
		No	2	11
		IDK	14	78
		Total	18	100%
2.	TR&C	Yes	0	0
		No	2	28
		IDK	5	72
		Total	7	100%
3.	Practitioners	Yes	3	7
		No	16	36
		IDK	25	57
		Total	44	100%

Table 48: Percentages on forbidden knowledge

As it can be seen from the table, majority of instructors, TR&C, and practitioners (78%, 72% and 57% respectively) said that they don't know whether there is forbidden knowledge or not. 11%, 0% and 7% of instructors, TR&C, and practitioners respectively said that there is forbidden knowledge in the college. At the end, 11% of instructors, 28% of TR&C and 36% of practitioners said that there is no forbidden knowledge in the college.

ii. Interview Data

For the question raised regarding forbidden knowledge, the director of the college said that there is no forbidden knowledge in the college for any purpose. But, according to the vice director, there is some knowledge which are not accessible to any team and/or individual for the benefit of the college. For example, ICT information is accessible to only data manager of the concerned team.

- Majority of knowledge workers do not know whether there exists forbidden knowledge or not. On the other hand, the data from interview is more convincing that there is to some extent such knowledge in PSCO.

4.4.11. Regarding Changing Tacit Knowledge in to Explicit Knowledge and/or Explicit Knowledge in to Tacit Knowledge

- Evaluation criteria 25: The College uses different metaphors, models, and rules to make explicit knowledge more internalized (Internalization)

i. Percentage and Standard Values

N0	Evaluators	Evaluators											
		Instructors				TR&C				Practitioners /professionals			
		Values/grades (1)	Number of raters (2)	Total values (1x2)	$RF(\frac{2}{n})$	Values/grades (1)	Number of raters (2)	Total values (1x2)	$RF(\frac{2}{n})$	Values/grades (1)	Number of raters (2)	Total values (1x2)	Relative frequency($\frac{2}{n}$)
1.													
2.		1	1	1	6	1	1	1	14	1	5	5	10
		2	3	6	16	2	1	2	14	2	9	18	21
		3	10	30	55	3	3	9	43	3	9	27	21
		4	3	12	17	4	2	8	29	4	11	44	25
		5	1	5	6	5	0	0	0	5	9	45	21
		DR	0	-	-	DR	0	-	-	DR	1	-	2
3.	Total		18	54	100%		7	20	100%		44	139	100%
											43*		
4.	Average value			3				2.857				3.233	

Table 49: Mechanisms of converting tacit knowledge in to explicit (externalization)

a. Percentage Values

Concerning practitioners, majority of them (47%) agree that the college uses *metaphors*, models, and rules to make explicit knowledge more internalized; medium number of them (31%) disagrees that the college uses different mechanisms to internalize explicit knowledge; a small amount of them (21%) are not willing to give their idea on the statement; at the end, 2% didn't respond to the question.

When seen from the instructor's perspectives, majority of them (55%) are not willing to give their idea on the statement; medium number of them (23%) agrees that the college uses different techniques to internalize explicit knowledge, at the end, a small amount of them (22%) disagree that the college the college uses different metaphors, models and rules to make explicit knowledge more internalized.

For TR&C, majority of them (43%) are not willing to give their idea on the statement; 29% disagrees that the college uses *metaphors*, *models*, and *rules to make explicit knowledge more internalized*; at the end, a small amount of them(28%) at least disagree on the statement.

b. Average Values

- Average wise, practitioners, and instructors gave the average value of 3. The average value given by TR&C is 2.71.
- From the three average values, all knowledge workers are at least not willing to give their idea (at most disagree) that the College uses different metaphors, models, and rules to make explicit knowledge more internalized(Internalization)

ii. Variance and Standard Deviation

No	Evaluators	Different statistical formulas			
		Evaluation score	Sample mean(\bar{x})	$(x_i - \bar{x})$	$(x_i - \bar{x})^2 n$
1	practitioner	1	3.233	-2.233	24.931
		2	3.233	-1.233	13.683
		3	3.233	-0.233	0.489
		4	3.233	0.767	6.471
		5	3.233	1.767	28.101
		$\varepsilon(x_i - \bar{x})^2 = 73.675$ $s^2 = \frac{73.675}{43-1} = 1.754$ $S = \sqrt{1.754} = 1.324$			
		2	Instructor	1	3
2	3			-1	3
3	3			0	0
4	3			1	3
5	3			2	4
$\varepsilon(x_i - \bar{x})^2 = 14$ $s^2 = \frac{14}{18-1} = 0.824$ $S = \sqrt{0.824} = 0.907$					
	TR&C			1	2.857
		2	2.857	-0.857	0.7344
		3	2.857	0.143	0.061
		4	2.857	1.143	2.613
		5	2.857	2.143	0
		$\varepsilon(x_i - \bar{x})^2 = 6.8564$ $s^2 = \frac{6.8564}{7-1} = 1.143$ $S = \sqrt{1.143} = 1.069$			

Table 50: Variance and standard deviation

From the table the response given by practitioners are more scattered from the average value that the value given by both instructors and TR&C and the value given by TR&C are less dispersed from the average value in relation to the other two.

- This shows that Knowledge workers in Training, Research and consultancy Core process has similar feeling about to what extent the college uses different metaphors, models, and rules to make explicit knowledge more internalized.
- On the other hand, practitioners have very different feeling on to what extent different metaphors, models, and rules are being used to make explicit knowledge more internalized when related with the feeling of the other strata.
- Generally, the college is very weak in its knowledge internalization mechanism. Since the mechanism is null and/or poor, much knowledge remains buried in the mind of the knowledge owner.
- Evaluation criteria 26: The College is able to use simulations, action learning, and on-the-job experiences to change tacit knowledge in to explicit knowledge (externalization)

i. Percentage and Average Value

No	Data analysing instruments	Evaluators											
		Instructors				TR&C				Practitioners			
		Values/grades (1)	Number of raters (2)	Total values (1x2)	$RF(\frac{2}{n})$	Values/grades (1)	Number of raters (2)	Total values (1x2)	$RF(\frac{2}{n})$	Values/grades (1)	Number of raters (2)	Total values (1x2)	$RF(\frac{2}{n})$
2		1	1	1	5.5	1	0	0	0	1	8	8	18
		2	4	8	22	2	3	6	43	2	8	16	18
		3	5	15	28	3	3	9	43	3	9	27	21
		4	5	20	28	4	1	4	14	4	9	36	21
		5	2	10	11	5	0	0	0	5	9	45	20
		DR	1	-	5.5	DR	0	-	0	DR	1	-	2
3	Total		18	54	100%		7	19	100%		44	132	100%
4	Average values			3				2.71				132	
												43 *	
												3.07	

Table 51: Converting explicit knowledge in to tacit knowledge (Internalization)

Concerning practitioner’s majority of them (41%) agree that the college uses use simulations, action learning, and on-the-job experiences to change tacit knowledge in to explicit knowledge; medium number of them (36%) disagrees that the college uses different mechanisms to internalize explicit knowledge; a small amount of them (21%) are not willing to give their idea on the statement; at the end, 2% didn’t respond to the question.

When seen from the instructors perspectives, majority of them (39%) agree that the college uses use simulations, action learning, and on-the-job experiences to change tacit knowledge in to explicit knowledge; medium number of them (28%) are not willing to give their idea on the statement; a small amount of them (27..5%) disagree that the college the college uses use simulations, action learning, and on-the-job experiences to change tacit knowledge in to explicit knowledge; and finally, 5.5% of them are not responded to the issue raised.

For TR&C, majority of them (43%) are not willing to give their idea on the statement; again, 43% disagrees that the college uses use simulations, action learning, and on-the-job experiences to change tacit knowledge in to explicit knowledge; at the end, a small amount of them (14%) disagree on the statement.

Average wise, both practitioners and instructors gave the average value of 3. The average value given by TR&C is 2.71.

- From the three average values, all knowledge workers not willing to give their idea (at most disagree) that the college uses simulations, action learning, and on-the-job experiences to change tacit knowledge in to explicit knowledge. This confirms what is indicated in percentage values.

ii. Variances and Standard Deviation

No	Evaluators	Variance and deviation formulas			
		Evaluation score	Sample mean (\bar{x})	$(x_i - \bar{x})$	$(x_i - \bar{x})^2 n$
	Practitioners	1	3.07	-2.07	34.279
		2	3.07	-1.07	9.159
		3	3.07	-0.07	0.044
		4	3.07	0.930	7.784
		5	3.07	1.93	33.525
		$\varepsilon(x_i - \bar{x})^2 = 84.791$ $s^2 = \frac{84.791}{43-1} = 2.019$ $S = \sqrt{2.019} = 1.421$			
	Instructors	1	3	-2	4
		2	3	-1	4
		3	3	0	0
		4	3	1	5

		5	3	2	8
		$\varepsilon(x_i - \bar{x})^2 = 21$ $s^2 = \frac{21}{18-1} = 1.235$ $S = \sqrt{1.235} = 1.1113$			
	TR&C	Evaluation score	Sample mean(\bar{x})	$(x_i - \bar{x})$	$(x_i - \bar{x})^2 n$
		1	2.714	-1.714	0
		2	2.714	-0.714	1.529
		3	2.714	0.286	0.245
		4	2.714	1.286	1.654
		5	2.714	2.286	0
		$\varepsilon(x_i - \bar{x})^2 = 3.428$ $s^2 = \frac{3.428}{7-1} = 0.571$ $S = \sqrt{0.571} = 0.7556$			

Table 52: variances and standard deviations

From the table, the values given by practitioners to the statement under consideration are highly dispersed from the average values (3.07) and the values given by TR&C are the less scattered from their respective standards.

- This shows that practitioners have diversified perception on to what extent the college uses simulations, action learning, and on-the-job experiences to change tacit knowledge in to explicit knowledge. On the other hand, TR&C have similar feeling on the statement.

iii. Interview Data

Concerning tactics to be used to convert tacit knowledge in to explicit knowledge and/or explicit knowledge in to tacit knowledge, the two directors said that there is no strategy, which is deliberately designed for such purpose. But, although unintentionally, they discover themselves doing the work of converting tacit knowledge in to explicit knowledge and explicit knowledge in to tacit knowledge.

Generally,

From the percentage value, mean values, and the interview data, the college has no strategy to externalize tacit knowledge and/or internalize explicit knowledge. Even they are not totally aware of knowledge internalization and externalization. The college is so passive in using different models, metaphors rules and any other relevant mechanisms to exploit the tacit knowledge hidden in the mind of knowledge workers. Moreover, simulations, action learning, and on-the-job experience sharing are not accustomed in the college.

- Evaluation criteria 27: Generally, do you think that the college is successful in knowledge sharing?

No	Respondents	Evaluation criteria	Number of respondents	Percentage of each respondents
1	Instructors	Yes	4	17
		No	13	72
		DR	2	11
		Total	18	100%
2	TR&C	Yes	1	14
		No	4	58
		DR	2	28
		Total	7	100%
3	Practitioners	Yes	18	41
		No	21	48
		DR	5	11
		Total	44	100%

Table 53: To what extent the college is successful in knowledge sharing

From the table, majority of practitioners (48%), **majority of instructors (72%)**, &majority of TR&C (58%) do not believe that the college is not effective in sharing knowledge among stake holders. This indicates that the college is not successful in its knowledge sharing practice.

- Evaluation criteria 28: What challenges your department faces during knowledge sharing?

i. Percentage Values

No	Respondents	Evaluation criteria	Number of respondents	Percentage of each respondents
1	Instructors	a	0	0
		b	3	16
		c	6	34
		d	3	16
		e	3	16
		f	1	6
		B&C	1	6
		E&D	1	6
		total	17	100%
2	TR&C	a	0	0
		b	0	0
		c	2	28
		d	0	0
		e	4	58
		f	0	0
		DR	1	14
		total	7	100%
3	Practitioners	a	9	21
		b	14	32
		c	9	21
		d	5	11
		e	3	6
		f	0	0
		DR	4	9
		total	44	100%

Table 54: challenges the college faced during knowledge sharing

From this table, different knowledge workers feel different reasons that hinder the organization from being effective in knowledge sharing.

To see them separately, 34%, 28%, & 21% instructors, TR&C and practitioners respectively believe that there is less/no reward for knowledge sharers; 16%, 0%, & 11% instructors, TR&C and practitioners respectively believe that there is weak organizational routines; 16%, 0%, & 32% instructors, TR&C and practitioners respectively believe that there is wrong placement; 0%, 0%, & 21% instructors, TR&C and practitioners respectively believe that there is Career Plateauing; 16%, 58%, & 6% instructors, TR&C and practitioners respectively believe that there is lack of awareness for knowledge sharing; 6%, 14%, & 9% instructors, TR&C and practitioners respectively didn't respond to the question; and finally no one proposed another reason other than those listed in the questioner.

ii. Interview Data

At the end the two directors were being asked to describe to what extent the college is successful in its knowledge sharing practice. Both the director and the vice director answered that although now hundred percent, they are on good status regarding knowledge their sharing practices. They also believe that there are limitations and more has to be done on this area.

For the question raised regarding what challenges they faced in their knowledge sharing practice, particularly, the director of the college put as a reason that there are lack of awareness about knowledge sharing, lack of commitment from management side, employees are not committed to share knowledge, and Knowledge sharer are denied adequate reward.

- From the percentage values and interview data of both criteria 28 and criteria 29, the college is not successful in its knowledge sharing practice. Even, they can't know whether it is successful or not because there is no awareness on this area. Knowledge is shared randomly and very occasionally. From the interview data, they are not in a position to at least think whether knowledge obstacles exist or not so that they can design tactics to make them at least minimum.

5. Major Findings, Conclusions and Recommendations

5.1. Major Findings

5.1.1. Regarding Leadership vs Knowledge Sharing

From all the percentage values, mean values, correlation values and the interview, the followings are the major findings investigated:

- Based on criteria one, majority of practitioners, instructors and TR&C (59%, 61%, and 86% respectively) beliefs that participatory leadership is adopted in the college.
- Based on criteria two, majority of practitioners, instructors and TR&C (58%, 50%, and 57% respectively) beliefs that *the current leadership style facilitates knowledge sharing*.
- The average values given by each strata on both criteria one and criteria two are above 3 and reflect that the respondent at least agree (at most strongly agree) that there is a participatory leadership style and this leadership style facilitate knowledge sharing.
- The data from the interview also confirms the same thing.
- Although weak, there is positive associations between the existing leadership style the knowledge sharing practice weak positive.

5.1.2. Regarding Reward Packages

The major findings under this variable include:

- From both the percentages, the average and information obtained from interview, majorities of knowledge workers disagree that the current reward package facilitates knowledge sharing among key knowledge workers.
- The college is not willing to give none financial rewards such as learning opportunities according to knowledge workers, particularly instructors' need.
- According to the correlation value computed from practitioners and instructors, the association between existing reward packages of the college knowledge sharing is weak positive.
- The 'r' values of TR&C shows that there is a strong positive correlation between the reward packages of the college its knowledge sharing trends.
- Although scholars like Armstrong, M.(2007) recommend that reward packages must be revised by taking in to account different factors such as inflations, the management in PSCO is passive in revising its reward package by conducting internal and external relativities.

5.1.3. Regarding Employment Relations

Generally, from the percentage and mean values of evaluation criteria 7 & 8, and interview data, there is good employment relationship in the college and this employment relationship facilitates knowledge sharing.

5.1.4. Regarding Employee Assignment and Positioning

The major findings under this variable include:

- ❖ From the percentage values, mean values, and interview data, there is a poor employee assignment practice in the college.
- ❖ The association between the current employee assignment practice of the college and its knowledge sharing practice is weak positive.
- ❖ The college is not in a position to produce its own internal policy
- ❖ From the interview, there is misplacement in the college.
- ❖ Regarding misplacement, the college prefers assigning workers on the work where they can perform better by the knowledge they gain from informal learning rather than downsizing them.
- ❖ The college use nomination as a mechanism of bringing workers to team leaders. But, almost all knowledge workers agree that the college should use election as a mechanism of employee positioning.

5.1.5. Regarding Organizational Routines (Policies, Procedures, Programs, Rules, and Regulations)

Generally, from the percentage values and mean values of criteria 15 & criteria 16, and the data obtained from interview, the college has no intentionally designed organizational routines for the sake of knowledge sharing. The current organizational routines are hardly support the flow of knowledge from the source to end users. The college is also not aware of the role of organizational routines in facilitating knowledge sharing practices.

5.1.6. Regarding Information Technology Infrastructures

Generally, from the percentage & mean values of criteria 18 and criteria 19, correlation values and interview data, it is possible to summarize that there is adequate IT infrastructure in the college add this infrastructure facilitate knowledge sharing practices.

5.1.7. Regarding Organization Structure

Generally, from the mean values, percentage values and interview data, the current organization structure facilitates knowledge sharing.

5.1.8. Regarding Knowledge Edition and Knowledge Disposition

From the percentage & mean values, majority of instructors and TR&C who are very close to both knowledge creation and knowledge disposition are at least wants to keep quit(at most disagrees & strongly disagree)that the college has knowledge disposition mechanism. Even majority of practitioners who are not this much near to knowledge creation (as those instructors and TR&C) are either not willing to give their view point or disagree on the statement.

The information obtained from the interview also confirms the same thing. According to the director and the vice director, the college is not awake to plan so that passive knowledge can be intentionally disposed without harming the college and other 3rd parties.

- In general, the college is very weak in disposing passive knowledge. It has no strategy to identify passive knowledge from the active ones. This means, both passive and active knowledge are shared together.
- The very concept of knowledge edition and disposition is new for them. No one is aware of whether individuals are benefited and/or endangered from the negligently and unintentionally disposed knowledge.

5.1.9. Regarding Forbidden Knowledge

Majority of knowledge workers do not know whether there exists forbidden knowledge or not.

- On the other hand, the data from interview is more convincing that there is to some extent such knowledge in PSCO.

5.1.10. Regarding Changing Tacit Knowledge in to Explicit Knowledge and/or Explicit Knowledge in to Tacit Knowledge

Generally, the college is very weak in its knowledge internalization mechanism. Since the mechanism is null and/or poor, much knowledge remains buried in the mind of the knowledge owner.

From the percentage value, mean values, and the interview data, the college has no strategy to externalize tacit knowledge and/or internalize explicit knowledge. Even they are not totally aware of knowledge internalization and externalization. The college is so passive in using different models, metaphors rules and any other relevant mechanisms to exploit the tacit knowledge hidden in the mind of knowledge workers. Moreover, simulations, action learning, and on-the-job experience sharing are not accustomed in the college.

5.1.11. Concerning Success and Challenge They Face During Knowledge Sharing

From the percentage values and interview data of both criteria 28 and criteria 29, the college is not successful in its knowledge sharing practice.

From the interview data, they are not in a position to at least think whether knowledge obstacles exist or not so that they can design tactics to make them at least minimum. It generally faced and is facing the challenges of designing and then aligning leadership styles, reward packages, employee relations, employee assignments and employee positioning strategies with its knowledge sharing practices. There is also a little awareness about the knowledge sharing practice on the overall success of the organization.

5.2. Conclusions

Based on the above indicated findings, it is possible to come up with the following conclusions.

5.2.1. Regarding the Leadership Styles

From all the percentage values, mean values, correlation values and the interview, majority of knowledge workers believe that there is a participatory leadership style and this leadership style facilitates knowledge sharing.

Although weak, there is a positive association between the existing leadership style and the knowledge sharing practice of the college. Still from the interview data, this participatory leadership style is designed for the purpose of customer satisfaction, not for knowledge sharing purpose.

- From all these facts, it is possible to conclude that there is a participatory leadership style in the college and this leadership style facilitate knowledge sharing practices.
- However, the college is not this much aware of in designing its participatory leadership style in accordance with its knowledge sharing practices.

5.2.2. Concerning Employee Reward

As it can be understood from the percentage and mean values, the college has poor reward package. The correlation between the current reward package and the knowledge sharing practice is very weak. From the interview, on-financial benefits such as learning opportunities are not given in line with the workers particularly, instructors' need. There is no career development for knowledge workers. The college is also very passive in conducting internal and external relationships concerning reward package. This leads to the very fact that some obtain what they not deserve and others loss what they deserve.

- From all this, it is possible to conclude that the poor reward package spontaneously kills the knowledge sharing practice in the college.

5.2.3. Regarding Employee Relation

Generally, from the percentage and mean values of evaluation criteria 7 & 8, and interview data, there is good employment relationship in the college and this employment relationship facilitates knowledge sharing.

5.2.4. Regarding Employee Assignment and Employee Positioning

The finding from the data shows that the college has the problem in assigning knowledge workers. According to the respondent, the current employee assigning committees are not free, neutral and fair. They are also less educated and not well experienced especially

on the area on human capital management. There is also a weak positive correlation between the current employee placement and knowledge sharing practice.

From the interview data, there is some misplacement which is intentionally occurred rather than downsizing workers.

Employee positioning wise, the college uses nomination to bring knowledge workers to position. On contrary, what knowledge workers prefer is election. Not only knowledge workers, the director of the college also has a firm belief in election, especially, the team coordinators.

- Based on all these facts, there is employee positioning problem in the college. What they believe in (election) and what they actually do is antagonistic.

5.2.5. Regarding Organizational Routines

Almost all employees evaluate the soundness of the current organizational routines vary poorly. The grand mean they gave is less than 3 showing that they prefer silence on the issue. From the interview, the college even do not know to what extent organizational routines affects the knowledge sharing practice of organizations. In general, although the college has tremendous routines (from top to lower management level and even to individual level), they are not designed in a manner they said the knowledge sharing practice.

- From this, it is possible to conclude that they are not in a position to take knowledge sharing as one basic issue while producing and/or borrowing different routines. Different routines in the college randomly benefit and/or cost the college society.

5.2.6. Regarding Technological Infrastructure

From the percentage values, mean values, and the interview, the current IT infrastructure of the college facilitate knowledge sharing practices. There is a strong correlation between the current IT infrastructure and the knowledge sharing practices.

- Accordingly, the college is on a better position concerning this IT infrastructure.

5.2.7. Regarding Organizational Structure

From the percentage values, more percent of knowledge workers believe that the current team based organization structure facilitate knowledge sharing. They express their agreement by giving the average values of 3.4, 3.556, and 3.57 respectively on to what extent the current organization structure enhance the knowledge sharing practice of the college.

From the grand mean of the above three mean values (3.51), majority of knowledge workers are at least agree (at most strongly agree) that the existing organizational structure aids knowledge flow from one extreme to the other with zero/very insignificant obstacles.

From the information obtained from interviews, the college follows team based organizational structure. *However, there is a gap between its team based organization structure and the way team leaders are assigned. What team management books recommend is election of team members; what PSCO is doing is nomination.*

- Generally, although the college is able to implement a team based organization structure, which is recommended by many scholars as something good to facilitate knowledge sharing, the way they assign can hinder the this team based organization structure from facilitating knowledge sharing.

5.2.8. Knowledge Edition and Disposition

From the percentage & average values and the interview data, there is no intentionally designed knowledge edition and knowledge disposition program. Actually, the college edit and disposes knowledge; but the edition and disposition is done randomly.

Moreover, the college is not in a position to doubt that knowledge workers may know what they know in a wrong way. In the same manner, they are not in a position to prepare training, workshops, forums, brainstorming, reverse brainstorming, and other knowledge stimulating techniques. This is the great gap of the college because knowledge workers are not lucky to know their true position in the knowledge world.

There is also some fake during knowledge edition. To put some example, they directly copy the old modules and/or training materials in to the newly produced one.

Generally, the college follows the principle of putting new wines in the old bottle (Mark, 1954). The college is also not in a position to know whether someone else is benefitted and/or damaged from the negligently disposed knowledge.

5.2.9. Regarding Forbidden Knowledge

Although majority of workers do not know the existence of, there is some information only accessible to the concerned team, especially information regarding ICT.

5.2.10. Regarding Changing Explicit Knowledge into Implicit Knowledge and/or Implicit Knowledge in to Explicit Knowledge

From the percentage value and mean values, the college has no strategy to externalize tacit knowledge and/or internalize explicit knowledge. Even they are not very aware of knowledge internalization and externalization. Still the college is passive in using different models, metaphors rules and any other relevant mechanisms to exploit the tacit knowledge hidden in the mind of knowledge workers. Moreover, simulations, action learning, and on-the-job experience sharing are not accustomed in the college.

- This all shows that there is a strategy problem in exhaustively using knowledge in the knowledge workers mind; this in turn leads to the conclusion that much amount of knowledge may remain buried in the mind of the owner, without benefiting the organization and the owner him/her self.

5.2.11. Challenges and Success in Knowledge Sharing

At the last respondents was asked to judge the overall success of the college in sharing knowledge. From the general response, I came to learn that, the college is not success full in its knowledge sharing practice.

The college also faced many challenges in its knowledge sharing practice. Some of the major challenges from the findings are: lack of awareness about knowledge sharing, lack of commitment from management side, employees are not committed to share knowledge, weak organizational routines, and Knowledge sharer are denied adequate reward.

5.3. Recommendation

5.3.1. Leadership Wise

From the overall findings, there is a participatory leadership style in the college and this leadership style facilitates knowledge sharing practices. However, as said by the director, the awareness of the college in aligning the leadership styles with knowledge sharing practices is very low.

- As a recommendation, the college should be committed to create awareness in aligning its leadership style with its knowledge sharing practices.
- According to the article produced by **Rao, M. (2005)**, the commitment of leaders (at different levels) plays a pervasive role in accelerating or decelerating knowledge sharing trends. The way they behave, the fairness they exercise while leading, the way they approach individuals and/or teams, and the general leadership styles they introduce all have an impact on knowledge sharing practice.

5.3.2. Reward Wise

- a) The college should able to give adequate financial and non-financial benefits that are in line with the knowledge workers need; not the college needs. According to Armstrong, M. and Helen M. (2004), all benefits which are not given in accordance with employees need are not rewards; but rather they are cost.
- b) The college also should able to conduct both internal and external relativities regarding this reward package. Then, based on the information obtained from this comparison, and other relevant conditions, the current reward package should be improved (Armstrong, M. (2007).

5.3.3. Regarding Employee Assignment & Employee Positioning

The great problem of the college is lack of employee assignment policy. Its current such as a BPR manual also becomes an obstacle in bringing workers to position particularly the team leaders.

To make such problem absent:

- a) The college should able to have effective assignment policies.
- b) The current BPR document (positioning part) should be revised so that different teams can get a room to elect their team leader.

5.3.4. Organizational Routines

From the overall finding, the current organizational routines are passive to facilitate knowledge-sharing practices. There is also less awareness on to what extent active organizational routines accelerate the practice of knowledge sharing among stakeholders. To make these problems absent:

- a) The college should work on awareness creation concerning the impact on organizational routines on knowledge sharing.
 - According to Feldman and Pentlands (2003), organizations should know about the impact of effective trends (routines) knowledge sharing practices.
- b) Ones it understood to what degree active organizational routines are important to share knowledge effectively; it should come to audit the existing routines to identify active routines from the passive ones.
- c) Then, the old organizational routines should be either reengineered or improved based on the situations on the college.

5.3.5. Organization Structure

The college should reconcile its team based organizational structure with its employee positioning strategy.

According to different literatures on team management, members must be given an opportunity to elect their team leader in team based organization structure. In contrary to this, what is in PSCO is that the top managers nominate team leaders although the college adopted a team based organization structure.

5.3.7. Regarding Knowledge Edition & Knowledge Disposition

From the general findings, the college is very poor in its knowledge edition and knowledge disposition mechanism. The best panacea for such a problem is:

- a) Awareness creation on the importance of knowledge edition and disposition,
- b) Developing knowledge edition and disposition strategies accordingly

- c) Knowledge workers should have an opportunity to expose themselves to different discussions, forums, and workshops and even further learning so that they examine the knowledge in their mind.

5.3.7. From Explicit to Implicit and from Implicit to Explicit

- a) The college should have a plan to help knowledge workers externalize their tacit knowledge and understand the knowledge they acquire from external.
- b) It should use knowledge internalization and/or externalization mechanisms such as: metaphors, models, rules, simulations, action learning, and on-the- job experiences (Nonaka and Takeuchi (1995)).

5.3.8. Regarding Challenges Faced by the College

In general, the college faced the challenge of strategically thinking leadership styles, reward packages, organizational routines, employee assignments and positioning mechanisms from the view point of knowledge sharing. There is also no awareness concerning to what extent knowledge sharing is important for the overall success of the organization. As a solution:

- There should be awareness creation about the concept of knowledge sharing practices
- Knowledge sharing mechanisms should be included in the overall strategy of the college
- There should be an alignment between the above factors and the knowledge sharing trends of the college (John, W. S., 2009).

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Appendix**Acronyms and their descriptions**

No	Acronyms	Descriptions
1.	SA	Strongly Agree
2.	A	Agree
3.	NAND	Neither Agree nor Disagree
4.	DA	Disagree
5.	SDA	Strongly Disagree
6.	M	Male
7.	F	Female
8.	T	Total
9.	HRM	Human Resource Management
10.	PSCO	Public Service College of Roomier
11.	ABMT	Agricultural Business Management Team
12.	St dev	Standard Deviation
13.	TR &C	Trainers, Researchers and Consultants
14.	EDBG	Educational Back Ground
15.	EDL	Educational Level
16.	P&FSS	Purchasing & Finance Supportive Staff
17.	HRM<	Human Resource Management & Leadership Team
18.	PF&AT	Public Finance & Accounting Team
19.	ITT	Information Technology Team
20.	Sc &OM	Secretarial Science & Office Management
21.	DR	Didn't Respond
22.	IDK	I don't know
23.	KSA	Knowledge, skill &ability
24.	KM	Knowledge Management
25.	KS	Knowledge Sharing
26.	BPR	Business Process Reengineering
27.	BSC	Balanced Score Card
28.	RF	Relative Frequencies
29.	ICT	Information and Communication Technology
30.	LT	Law Team
31.	TVET	Technical, Vocational and Educational Training
32.	TE	Technological Enablers of knowledge sharing
33.	SPP	Summarized Profiles of practitioners
34.	SPI	Summarized Profiles of Instructors
35.	STR&CP	Summarized TR&C Profiles
36.	CLU&R	Degree of data completeness, legibility, simplicity and reliability
37.	SME	Subject Matter Expert