

A Study on Knowledge Management Practices in Select Tyre Manufacturing Companies

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Abstract

Knowledge Management (KM) has emerged as a key element necessary for achieving organisational effectiveness in the contemporary manufacturing environment. To support operational efficiencies, employee productivity, innovations, and overall competitiveness, manufacturing firms are increasingly reliant upon implementing effective KM practices. The tyre manufacturing sector operates within a highly technology-driven and competitive environment where using organisational knowledge effectively is an essential factor that contributes to long-term sustainability.

The current research examines some KM practices in specific tyre manufacturing organisations. Each dimension of KM will be evaluated by considering key aspects of KM, including the acquisition, dissemination, retention, and application of knowledge in organisations. Data was collected using a structured questionnaire administered to employees, while secondary data was collected from journals, books, company reports, and websites. Quantitative data were analysed using percentage analysis, weighted average analysis, and chi-square analysis.

Results of the research indicate that implementing effective KM practices leads to increased employee efficiency, organisational learning, innovation, and overall organisational productivity. Based on the above findings and other analyses, it can be concluded that organisations adopting structured KM, will have superior organisational performance and a greater competitive advantage than firms not utilising structured KM.

Keywords: Knowledge Management, Tyre Manufacturing Companies, Organizational Learning, Knowledge Sharing, Employee Productivity.

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I. Introduction

Currently, in the worldwide business world, knowledge represents one of the primary types of organizational assets. Traditional businesses rely on a combination of financial and physical assets. Today, organizations are more focused on their intellectual capital and knowledge assets as a means for achieving sustainable organizational performance.

Knowledge Management (KM) can be defined as the methodical approach that organizations adopt to acquire, create, capture, store, share, and use knowledge for achieving their business objectives.

The primary way that manufacturing industries contribute to economic development is through creating jobs, growing industrial output, and developing new technologies. Tyre manufacturing is one of the most competitive and technology-driven sectors of manufacturing, requiring continual improvement of quality, ongoing innovation, and continual improvement of operations.

The tyre manufacturing industry faces significant challenges related to fast-paced technological advances, fast-growing customer demands and expectations, increased competitive pressures from around the world, and the continual development and management of a skilled workforce. KM practices enable organizations in the tyre manufacturing industry to improve their communication, coordination, and problem-solving capabilities by improving their decision-making processes.

Successful KM practices allow organizations to retain the intellectual capital of their employees, to eliminate duplication of work, to encourage and develop new products and services, and to improve the overall performance of the organization. The study of KM practices in tyre manufacturing will be beneficial in identifying ways organizations are leveraging their knowledge assets for achieving operational excellence and sustainable growth.

II. Statement of the Problem

Tyre production is continuously evolving and is highly competitive in today's marketplace. Continuous development and innovation are key to remaining successful in this increasingly competitive environment;

however, most of the world still doesn't effectively document or share valuable lessons learned in their organizations, instead allowing these lessons learned to remain locked up with the individual employee who learned them.

An organization that lacks effective knowledge management practices will suffer from communication breakdowns, inefficient operations, reduced levels of innovation and a loss of organizational memory. Although many tyre manufacturers heavily invest in new technological advances, new products and personnel training, no organization has developed and/or implemented a formalized knowledge management (KM) system within their organizations.

There is little research currently available that specifically examines knowledge management practices within tyre manufacturing businesses. Therefore, this study will analyze KM practices employed by selected tyre manufacturing organizations and their impact on the performance of the organization.

III. Objectives of the Study

The major objectives of the study are:

1. To study the knowledge management practices followed in select tyre manufacturing companies.
2. To examine the factors influencing knowledge sharing among employees.
3. To analyze the role of technology in knowledge management.
4. To evaluate the impact of knowledge management practices on organizational performance.

To provide suggestions for improving knowledge management practices in tyre manufacturing companies

IV. Scope of the Study

The research is centered on the use of different approaches to managing knowledge at selected tyre manufacturing organisations. The study assesses the views of the workers concerning the processes of obtaining, exchanging, recording, and applying knowledge.

By doing so, the findings of this study could help manufacturing companies/managers, researchers, and policymakers develop appropriate approaches to establishing successful KM systems and improving efficiency within organizations.

V. Review of Literature

Nonaka and Takeuchi (1995) explained that knowledge creation is one of the most important elements for organizational success. According to their study, organizations create knowledge through continuous interaction between tacit knowledge and explicit knowledge. Tacit knowledge refers to personal experiences and skills, while explicit knowledge refers to documented information and organizational procedures. The researchers emphasized that organizations should encourage communication, teamwork, and knowledge sharing among employees. Their study highlighted that knowledge creation improves innovation, organizational learning, and long-term competitiveness. In manufacturing industries, knowledge management systems help organizations preserve employee expertise and improve decision-making processes. The study also introduced the SECI model, which explains socialization, externalization, combination, and internalization processes of knowledge creation.

Davenport and Prusak (1998) defined knowledge management as a systematic process of collecting, organizing, sharing, and applying organizational knowledge. Their study highlighted that knowledge is a valuable organizational asset that contributes to business growth and innovation. They emphasized that organizations should establish proper systems for storing and transferring knowledge among employees. According to the researchers, organizations with effective knowledge management systems achieve better operational efficiency and employee productivity. The study also explained the role of organizational culture, leadership support, and technology in improving knowledge-sharing practices. Manufacturing industries benefit from knowledge management through improved communication, reduced operational errors, and enhanced organizational learning.

Peter Senge (1990) introduced the concept of the learning organization in his book "The Fifth Discipline." He explained that organizations should continuously encourage employee learning and skill development to improve organizational effectiveness. According to Senge, learning organizations promote teamwork, innovation, systems thinking, and knowledge sharing. His study emphasized that organizational learning improves employee adaptability and problem-solving capabilities. In industrial organizations, continuous learning helps employees respond effectively to technological changes and market competition. The study also highlighted that management support and employee participation are essential for creating a strong learning culture within organizations.

Argyris and Schon (1978) explained that organizational learning is a process through which organizations improve their knowledge, skills, and decision-making capabilities. Their study focused on single-loop and double-loop learning concepts. Single-loop learning involves correcting errors without changing organizational policies, while double-loop learning involves modifying organizational assumptions and strategies. The researchers emphasized that learning organizations encourage employees to share ideas, learn from mistakes, and improve work processes. Their study concluded that organizational learning enhances innovation, productivity, and

operational efficiency. Industrial organizations adopting learning-oriented cultures can better adapt to changing business environments and technological developments.

Peter Drucker (1999) highlighted that knowledge workers play a significant role in organizational growth and competitiveness. According to Drucker, organizations should focus on developing employee knowledge and intellectual capital to achieve sustainable success. His study emphasized that effective knowledge management improves decision-making, innovation, and productivity. Drucker explained that organizations must create environments that encourage employee learning, communication, and creativity. Industrial organizations adopting knowledge management practices can effectively utilize employee expertise and improve organizational performance. The study also stressed the importance of leadership and organizational culture in supporting knowledge-sharing activities.

Sharma and Sharma (2018) examined knowledge management practices in Indian manufacturing industries. Their study found that organizational culture and employee participation significantly influence knowledge-sharing behavior. The researchers observed that organizations with strong communication systems and supportive management achieve better knowledge management outcomes. The study also revealed that knowledge-sharing practices improve employee productivity, innovation, and operational efficiency. Manufacturing companies implementing structured knowledge management systems experience better coordination and teamwork. The researchers concluded that technology, leadership support, and employee training are essential factors influencing KM effectiveness.

Sujatha and Krishnaveni (2020) studied the relationship between knowledge management practices and employee performance. Their research revealed that effective knowledge-sharing systems improve employee efficiency, communication, and organizational learning. The researchers found that organizations providing regular training and development programs achieve higher employee satisfaction and productivity. The study emphasized that organizational learning positively influences innovation and problem-solving capabilities. According to the researchers, employee participation and supportive management practices are essential for successful knowledge management implementation.

Sanjit et al. (2021) analyzed knowledge management practices in manufacturing industries. Their study identified leadership support, employee involvement, and technological infrastructure as important determinants of KM success. The researchers found that organizations with advanced technological systems effectively manage organizational knowledge and improve operational efficiency. The study also revealed that knowledge management practices reduce communication barriers and encourage teamwork. Industrial organizations adopting effective KM systems achieve higher innovation and productivity levels.

Gupta, Jain, and Dangayach (2018) studied operational excellence in tyre manufacturing industries. Their research emphasized the importance of continuous improvement, employee learning, and process innovation in manufacturing organizations. The study found that organizations implementing quality management and knowledge-sharing practices achieve higher productivity and customer satisfaction. The researchers also highlighted that employee training programs and technological advancements contribute significantly to organizational performance.

Karl Wiig (1997) Karl explained that knowledge management helps organizations create value through the proper utilization of intellectual resources. According to his study, organizations should focus on knowledge creation, organization, distribution, and application. Wiig emphasized that employee knowledge and expertise are essential for organizational success. The study highlighted that organizations implementing effective KM practices improve innovation, productivity, and competitive advantage. Industrial organizations benefit from knowledge management through improved communication and operational efficiency.

Alavi and Leidner (2001) Alavi and Leidner explained that information technology plays a significant role in supporting knowledge management systems. Their study revealed that databases, intranet systems, ERP software, and communication technologies help organizations store and share knowledge effectively. The researchers emphasized that technology improves organizational learning and employee collaboration. Manufacturing organizations adopting technological KM systems experience better operational coordination and information accessibility.

Bhatt (2001) highlighted the importance of organizational culture in knowledge management implementation. According to the study, organizations should encourage teamwork, employee involvement, and communication for effective knowledge sharing. The researcher observed that organizations with supportive leadership and collaborative culture achieve successful KM outcomes. Industrial organizations implementing learning-oriented cultures experience improved productivity and innovation.

Garvin (1993) explained that learning organizations continuously acquire, create, and transfer knowledge to improve organizational performance. The study emphasized that employee learning and experimentation contribute significantly to innovation and adaptability. Garvin highlighted that organizations should encourage open communication and continuous improvement practices. Industrial organizations promoting organizational learning achieve better operational efficiency and competitiveness.

Zack (1999) emphasized that knowledge management is essential for maintaining organizational competitiveness in dynamic business environments. The study revealed that organizations should align knowledge management strategies with business objectives to achieve sustainable growth. Zack also explained that organizations that effectively utilizing employee knowledge improve innovation, customer satisfaction, and decision-making quality.

Earl (2001) studied different approaches to knowledge management in organizations. The researcher identified technological, behavioral, and organizational approaches for effective KM implementation. The study highlighted that successful knowledge management requires strong leadership support, employee involvement, and proper technological infrastructure. Industrial organizations adopting integrated KM systems achieve better communication, organizational learning, and productivity.

Kumar and Ramesh (2022) examined the impact of digital knowledge management systems in manufacturing industries. Their study revealed that organizations adopting digital platforms for knowledge sharing achieved higher employee productivity and operational efficiency. The researchers emphasized that cloud computing, ERP systems, and AI-based communication technologies significantly improve organizational learning. The study also highlighted that employee participation and management support are essential for successful KM implementation. Manufacturing organizations implementing digital KM systems demonstrated better innovation and decision-making capabilities.

Mehta and Singh (2023) analyzed organizational learning practices in industrial organizations. Their study found that continuous employee training and a collaborative work culture positively influence organizational innovation and productivity. The researchers emphasized that organizations encouraging employee participation in learning activities achieve better adaptability to technological changes. The study concluded that organizational learning practices improve employee morale, teamwork, and operational performance in manufacturing industries.

Priya and Karthik (2024) studied the relationship between knowledge sharing and organizational performance in Indian manufacturing companies. Their findings revealed that organizations with strong communication systems and a knowledge-sharing culture experience higher innovation and employee efficiency. The researchers also observed that technological infrastructure significantly supports knowledge management activities. The study concluded that employee involvement and leadership support are critical for successful KM practices.

Rao and Devi (2025) examined the role of artificial intelligence in knowledge management systems. Their study revealed that AI-based technologies improve organizational communication, data storage, and knowledge accessibility. The researchers found that industrial organizations using AI-supported KM systems achieve better decision-making and operational efficiency. The study also highlighted that advanced digital technologies support organizational learning and innovation.

Balaji and Kumar (2025) analyzed employee perceptions toward knowledge management practices in manufacturing industries. The study found that employees positively respond to organizations promoting collaborative learning and continuous improvement practices. The researchers emphasized that reward systems, training programs, and leadership support significantly influence employee participation in knowledge-sharing activities. The study concluded that effective knowledge management practices improve employee satisfaction, innovation, and organizational sustainability.

VI. Research Methodology

6.1 Research Design

The study adopts a descriptive research design to analyze knowledge management practices in select tyre manufacturing companies.

6.2 Sources of Data

The study is based on both primary and secondary data.

Primary Data

Primary data were collected through a structured questionnaire distributed among employees.

Secondary Data

Secondary data were collected from journals, books, magazines, research articles, company reports, and websites.

6.3 Sampling Technique

A convenience sampling technique was used for selecting respondents.

6.4 Sample Size

A sample of 150 employees from select tyre manufacturing companies was chosen for the study.

6.5 Tools Used for Analysis

The following statistical tools were used:

- Percentage Analysis
- Weighted Average Analysis
- Mean Score Analysis
- Chi-Square Test

VII. Statistical Tools Used in the Study

Statistical Tool	Purpose of the Tool	Application in the Present Study
Percentage Analysis	Percentage analysis is used to classify and present collected data in a simple and understandable form. It helps the researcher understand the proportion of respondents belonging to different categories.	In this study, percentage analysis was used to analyze demographic variables such as age, gender, educational qualification, work experience, and employee opinions regarding knowledge management practices.
Weighted Average Analysis	Weighted average analysis is used to identify the importance or ranking of factors based on respondent opinions. It gives weight to each response according to its significance.	The study used weighted average analysis to identify the most influential factors affecting knowledge sharing, organizational learning, and employee productivity in tyre manufacturing companies.
Mean Score Analysis	Mean score analysis helps measure the average opinion or satisfaction level of respondents regarding various factors.	In this study, mean score analysis was used to determine employee satisfaction with knowledge management systems, training programs, communication systems, and technological support.
Chi-Square Test	The chi-square test is a statistical technique used to assess the relationship between two variables. It helps determine whether there is a significant association between variables.	The present study used chi-square analysis to examine the relationship between demographic variables and employee perceptions regarding knowledge management practices.

7.1 Analysis and Interpretation

Table 1: Demographic Profile of Respondents

Particulars	Category	No. of Respondents	Percentage
Age	Below 25 Years	20	13.3
	25–35 Years	58	38.7
	36–45 Years	46	30.7
	Above 45 Years	26	17.3
Gender	Male	102	68.0
	Female	48	32.0
Educational Qualification	Diploma	34	22.7
	Undergraduate	61	40.7
	Postgraduate	42	28.0
	Others	13	8.6
Work Experience	Below 5 Years	36	24.0
	5–10 Years	59	39.3
	10–15 Years	38	25.3
	Above 15 Years	17	11.4

7.2 Table Interpretation

Interpretation for Table 1: Demographic Profile of Respondents

The table indicates that the majority of respondents (38.7%) belong to the age group of 25–35 years, followed by 30.7% in the age group of 36–45 years. This shows that most employees working in tyre manufacturing companies are middle-aged and actively involved in organizational activities. Regarding gender, 68% of respondents are male, and 32% are female, indicating that male employees dominate the manufacturing workforce.

In terms of educational qualification, 40.7% of respondents are undergraduates, while 28% are postgraduates. This indicates that most employees possess technical and professional educational backgrounds. The table also reveals that 39.3% of employees have 5–10 years of work experience, suggesting that experienced employees contribute significantly to organizational knowledge-sharing activities.

7.3 Table 2: Employee Opinion on Knowledge Sharing Practices

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Employees regularly share work-related knowledge	62	48	20	12	8
Training programs improve employee learning	74	49	15	8	4
Technology supports effective knowledge management	69	52	16	9	4
Management encourages teamwork and collaboration	58	55	18	11	8
Knowledge management improves organizational performance	81	44	13	7	5

7.4 Interpretation for Table 2: Employee Opinion on Knowledge Sharing Practices

The table reveals that the majority of respondents strongly agree and agree that employees regularly share work-related knowledge within the organization. Around 74 respondents strongly agree that training programs improve employee learning, indicating that training and development initiatives play a vital role in knowledge management.

Similarly, most employees believe that technology supports effective knowledge management practices through digital communication systems, ERP software, and internal databases. The table also indicates that management encourages teamwork and collaboration among employees. Furthermore, a majority of respondents strongly agree that knowledge management practices improve organizational performance, innovation, and productivity. Overall, the findings indicate a positive perception of knowledge management practices among employees.

7.5 Reliability Analysis – Cronbach’s Alpha

Reliability analysis is used to measure the consistency and dependability of the research instrument. Cronbach’s Alpha is one of the most widely used methods for testing the internal consistency of questionnaire items.

In the present study, Cronbach’s Alpha was applied to measure the reliability of variables related to knowledge management practices, such as:

- Knowledge Acquisition
- Knowledge Sharing
- Knowledge Storage
- Knowledge Application
- Organizational Learning
- Employee Performance

VIII. Table 3: Cronbach’s Alpha Reliability Statistics

Variable	Number of Items	Cronbach’s Alpha Value
Knowledge Acquisition	5	0.812
Knowledge Sharing	5	0.845
Knowledge Storage	4	0.793
Overall Reliability	28	0.842

8.1 Interpretation of Cronbach’s Alpha

The Cronbach’s Alpha values for all variables are above 0.70, indicating good internal consistency and reliability of the research instrument. The overall Cronbach’s Alpha value of 0.842 confirms that the questionnaire used in the study is highly reliable for measuring knowledge management practices and organizational learning.

Generally:

- Alpha value above 0.90 = Excellent Reliability
- Alpha value above 0.80 = Good Reliability
- Alpha value above 0.70 = Acceptable Reliability
- Alpha value below 0.60 = Poor Reliability

Therefore, the reliability analysis confirms that the collected data are dependable and suitable for further statistical analysis.

8.2 Findings of the Study

The major findings of the study are:

1. Most tyre manufacturing companies have adopted formal knowledge management practices.
2. Training and development programs improve knowledge-sharing behavior among employees.
3. Technology plays a major role in knowledge storage and dissemination.
4. Organizational culture positively influences KM effectiveness.
5. Leadership support encourages employee participation in KM activities.
6. Effective KM practices improve organizational productivity and innovation.

7. Employees believe that KM practices reduce operational errors and improve efficiency.

IX. Suggestions

Based on the findings, the following suggestions are offered:

1. Tyre manufacturing companies should strengthen digital knowledge repositories.
2. Organizations should encourage regular training and development programs.
3. Management should create a collaborative organizational culture.
4. Reward systems may be introduced for employees who actively share knowledge.
5. Advanced technologies such as Artificial Intelligence and data analytics should be integrated into KM systems.
6. Organizations should periodically evaluate the effectiveness of KM practices.

X. Conclusion

7. Knowledge management practices have become essential for organizational success in modern manufacturing industries. The present study concludes that tyre manufacturing companies recognize the importance of KM practices in improving organizational productivity, innovation, and competitiveness.
8. The study also highlights that organizational culture, leadership support, employee participation, and technological infrastructure significantly influence the success of knowledge management systems. Organizations effectively utilizing knowledge resources can achieve sustainable growth and long-term competitive advantage.
9. Therefore, tyre manufacturing companies should continue investing in employee development, technological infrastructure, and knowledge-sharing systems to improve organizational effectiveness and sustainability.

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