

Knowledge Economy: An Indian Perspective

Amit Kumar¹, Rabindranath Sarma^{2*}

¹Assistant Professor, Department of Contemporary and Tribal Customary Law, Central University of Jharkhand, Ranchi, PIN-835222, Jharkhand, India, E-mail: amitrnanjanfn09@outlook.com, contact no.:

²Associate Professor, Department of Tribal Studies, Central University of Jharkhand, Ranchi, PIN-835205, Jharkhand, India, E-mail: rabindranath.sarma@cuja.ac.in, contact no.:

*Corresponding Author: - Rabindranath Sarma

Abstract

Indian form of knowledge and wisdom touches physical, psychological and philosophical aspects of life. Knowledge is considered as light that shows the path of success and failure. It is something which illuminates and reveals about the world of none and forms the basis of living a morally and ethically good life. In previous some decades the concept of knowledge has been changed that talks about the materialistic aspects of Knowledge and at the same time, discussion about the 'Knowledge Economy' has been started to create values from it so that humans can get better standard of life along with qualitative and quantitative growth. Knowledge economy has created an environment of working together in groups for improving competencies at various institutions. One of the common and basic necessity of Knowledge economy is to have better and competent workforce in academic research and development which further results into creating a value for development of any individuals, groups, community, institutions, state and nation. The capacity to use information and communication technologies (ICT), solve issues, work in teams, supervise and lead, and engagement in continuous learning are just a few examples of the workplace abilities that a competent workforce must possess. This article will examine the value of interdisciplinary academic research and development from Indian perspective of knowledge economy. Additionally, it examines the degree to which new "workplace competencies" are becoming normative with the help of secondary data.

Keywords: Knowledge, Folk Knowledge, Knowledge Economy, Knowledge Worker.

Introduction

नृत्स्वयं योगसंनिधौ
(NaHi Gyaanen Sadrishm Pavitramih Vidyate
Tatswayam Yogsansidhah Kalenaatmani Vidanti)
-Srimad Bhagwat Geeta (4.38)

(There is nothing else in this world that purifies human like knowledge because the knowledge has immense effects on humans or on any living organisms. It has been purified for a very long period by Karma-yoga or Samadhi-yoga, meaning that the 'Mumuksh' who has acquired such a qualification discovers that knowledge in himself, that is, he accomplishes it directly) Indian Civilization is most ancient civilization of the world which is very much life centric and reflective in characteristics of Indian people. Indian culture has been recognized for its advanced knowledge systems and practices since the Vedic period. Indian civilization always transmits the learnings from one generation to another in the form of folk knowledge. Folk knowledge is considered as the synonymous term for the folk psychology, both terms are used in languages and literatures to describe the type of

knowledge gained at personal level and has been transmitted through times. Folk knowledge as a technical word has been sieged after the science came out in existence. It was believed that ways of knowing such knowledges would replace the knowing in reductively and abstract fully instead of supplementing. As science and technology will be developing themselves traditional set of knowledges and wisdom would go unimportant and helpless to the human life. The humans will be more likely to be dependent on folk knowledges and less likely to believe on their sight. It is easy to comprehend how this can damage practitioners' trust. Their education had taught them not to trust personal wisdom obtained through years of experience, but their intuition told them differently. They were cautioned that contemporary, trained physical educators do not always follow what seems right. People should instead suppress many of their impulses and adhere to what they know to be true scientifically instead (Kretchmar, 2008). The gentle behaviors of people in India is only because of their strong background hold of their Traditional Knowledge System. Indigenous Knowledge System or Traditional Knowledge System is significant in many ways as it restores self-confidence and promotes cross disciplinary

ideas. It is holistic in character and addresses all areas of life and tries to achieve the primary goals of life, such as achievement, fulfillment and happiness. The colonial stereotypes and approaches have made Indigenous Knowledge System as weak as possible. Students in Indian Society are not exposed to Indigenous Knowledge System of thought or its basic philosophy, aesthetics, or civilizational ethos during their schooling. There is need to update and carry forth the rich tradition of Indian knowledge systems and practices in the present setting for revival in contemporary society.

Knowledge is the catalyst or initiator for the evolution of fundamental framework of any society. Education, training, absorptive ability, previous knowledge, knowledge flow, technological knowledge transfer, research and development skills, dissemination, and innovation make up the Centre of focus in knowledge economy. A new form of society can only exist if these characteristics are present in large concentrations, which they are due to increased economic efficiency, innovation, and orientation that affect every aspect of society as well as improved knowledge use. Increased investment in information-intensive businesses and the declining cost of knowledge acquisition, codification, maintenance, and distribution are contributing to the acceleration of such changes to a knowledge society. Knowledge is described as "a fluid mixture of framed experiences, values, contextual information, and expert insight that establishes a framework for assessing and assimilating new experiences and information" in the context of organisations. It develops and is used in the minds of the knowledgeable. It frequently gets ingrained in organizational routines, procedures, practices, and conventions as well as in documents or archives. This definition presupposes that knowledge is a tool, a system, a mechanism, and a product that is utilized for seeing the world and engaging in practical activities, which is a striking contrast to the epistemological concept of "Justified True Belief." However, there are still areas of criticism with this ostensibly comprehensive and complex description (Kabir, 2019). A knowledge economy is one that is based primarily on the creation, sharing, and application of social and scientific information along with technology. Education and training, innovation systems, information infrastructure, financial incentives, and institutional frameworks are the four fundamental foundations of the knowledge economy. For the development and distribution of information, a workforce that is educated and well-trained is

highly required. A contemporary information infrastructure facilitates knowledge management, information conveyance, and communication. Systems for innovation assist in utilizing the pool of knowledge that has been globalized to increase competency. Globalization, increased complexity, and quick changes are hallmarks of this new economy, which places a strong emphasis on managing a company's intellectual property and other knowledge assets.

Objective:

The major objective behind writing this article is to explore and discuss the term Knowledge Economy in context of India. Therefore, this article will examine the value of interdisciplinary academic research and development from Indian perspective of knowledge economy. Additionally, it examines the degree to which new "workplace competencies" are becoming normative. The newer dimensions of folk knowledge used as the knowledge economy will also be covered in this study.

Research Methodology:

The research methodology is completely based on critical qualitative in-depth study of secondary information studied across the books, journals, newspapers, magazines etc. The research will be a conceptual work having exploratory and descriptive touch.

Knowledge Economy: Historical Background

The idea of the knowledge economy is directly related to how economic relationships have changed, how people's roles in the social and economic life have changed, how social and intellectual capital has affected society, how perception and thinking of humans have changed, and how new social groupings have emerged with time. These problems and the complexities they cause necessitate a review of the theories, details, and models of contemporary economic theories as well as the inclusion of ideas, concepts, and structural patterns that will influence the development of the new economy, social processes, and individual well-being in the future (Kabir, 2019). The shift to the knowledge economy is motivated by a rising understanding that a country's capacity to produce, appropriate, and use new information is increasingly necessary for long-term economic growth, employment, and social welfare (Dabić, 2015).

As far as the historical evolution of knowledge to be used as economical purposes are concerned, it may have started with the human civilization where there were not any science and technology developed for earning the profits. The basic needs of getting water, food and clothing can be considered as the requirement of knowledge to be used as self-help firstly, later on moving towards the economical purposes. Just like hunting would have moved the humans to be more creative in development of wisdom and knowledge related to hunting tools. In the same way storing water and food materials may have developed the use of pots later on moving for the development of pottery products. Pottery products later have made the concept of development of wheel and once the wheel was there, the very first form of industry was formed on this earth. Similar evidence has been found in the Early Harappan, Harappan, and Later Harappan periods, which can be traced with the help of motifs found on seals and pottery products in the Indian subcontinent. Pottery productions were considered to be an innovative idea of hunter-gatherers when they were discovered approximately around 18000 calibrated years before present (cal BP)(Sarma, PotteryPromotion Through Institutional Development for Sustainable Cause in India, 2021). The broadening use of such knowledge and innovation have passed through the generations which led to manufacture bangles with the help saggars and stone ware making them more precious items at the time of Mohenjo-Daro and Harappa. The concrete proof had been found in many burial tombs having earthen pots buried along with the buried bodies of elite groups (Sarma, The Pottery art as Sustainability and Luxury Products, 2022). So, these all knowledges and information have eventually led for today's scenario of knowledge economy.

In frame of contemporary world, the concept of knowledge economy has the root of origin in late 1950s when the second industrial revolution was boosting up in the market to earn the profits with the help of information. It was the growing phase of information technology and personal computers to create the space of work and businesses impacting the economy of the world. In the subject of economics, there has been much discussion over whether industries are particularly knowledge intensive. Analysis of how much each of these industries contributes to productivity development has taken a lot of time. The evolutionary theory of technological development established several best practices that decision-makers may apply to promote

innovation in response to the economic downturn at the end of the 1970s. They underline how important the microelectronic revolution, among other major technical advancements achieved at the time, was in resolving the economic crisis. Innovation was thought to depend heavily on the coevolution of technology, businesses, industry structures, and the supporting governing institutions. Evolutionary economists view innovation as an interactive process that paves the way for a non-linear interactive model of innovation, in contrast to neoclassical growth theories, which are based on a linear innovation process that starts with scientific research and ends with its successful commercialization. Kline and Rosenberg (1986) described this chain-linked model as having significant implications for the role of scientific research in the innovation process. The chain-linked model often starts with the discovery of an unmet market demand and entails intricate feedback loops between each step of innovation and the stakeholders who are responsible for it. Innovation is not always fueled by new information or scientific research. Instead, the incremental innovation created mostly by engineers (as opposed to scientists) is regarded as being equally crucial to, if not more so, than economic development research. The chain linked model represents a departure from the idea of science-based innovation in practice, despite the fact that innovation still significantly relies on technological expertise (Dabić, 2015). A significant amount of popular literature claimed that the knowledge economy operated fundamentally and differently from the past because the growth of knowledge-intensive industries and the accompanying increase in productivity took place in the context of unusual macroeconomic and financial-market developments in the 1990s. Many recent studies in sociology and labor economics have examined whether new job categories and innovative work structures have evolved in recent years, albeit few researchers today accept such assertions. There is substantial discussion about how different these work arrangements are from more traditional ones and how closely connected new types of labor are to the knowledge economy. The growth of professional communities made up of individuals, groups and communities who frequently work for various, occasionally competitor companies and are at the forefront of creating and disseminating fresh ideas is a crucial component of the rise of the knowledge-based workforce. The fact that so many traditional companies, like IBM, cherish their connections to these communities and have built multibillion-

dollar businesses on the Linux platform is one indication of the significance of these movements, such as the open software movement. The extent to which these user groups uphold crucial infrastructures, like Internet standards, may be more important. Similar to this, Research and Development partnerships between nominally rival businesses have become significantly more significant in disciplines like IT, nanotechnology, and biotechnology, where information is emerging quickly and the sources of knowledge are scattered broadly (Snellman, 2004). The cultural economy and creative economy have exploded, moving from representing a relatively insignificant portion of economic life to becoming major players in advanced economies since the 2000s, when culturalization of the economy became a key to success in crowded and competitive markets. In contrast to the weightless economy, whose influence on economic theory and practice has been limited (Dabić, 2015).

Knowledge Economy and Knowledge Workers

The cornerstone of the knowledge economy, which is in part fuelled by the opportunities made possible by technological innovation, is the creation and use of human mind full of information and wisdom. The term "knowledge worker" has been created to refer to those employees who are most productively contributing to the knowledge-based economy. It is not that much easy to conceptualise the term knowledge economy as well as knowledge worker. Individual, group and community who operate in knowledge-based industries or employees with specialised skills and abilities can be included in the list of knowledges workers. High levels of competences and abilities are required for knowledge workers, or those who do professions that include the creation and use of wisdom for capital generation in the economy. These are not just defined in terms of educational achievement; for example, nearly one in five knowledge workers has strong reading abilities but lack advanced formal degrees. A conclusion that appears to apply more to men than to women is that knowledge workers have gained and are using relevant, advanced levels of abilities that were not developed through formal schooling. Numerous new economic conceptualizations, such as the Internet, weightless, cultural, creative, or financialized economies, which are now frequently understood to be a component of the service economy, have contributed to a shift in how knowledge is understood from scientific

knowledge to services and creativity. Because the investment in intangibles like research and innovation is somewhat uncritically identified with the investment in services as just another form of intangibles driven by human intellectual/mind production as opposed to industrial production, the knowledge economy is implicitly equated with the service economy through this evolution. The definition of the "knowledge economy" that is most frequently used is that given by the OECD (1996), which broadly categorizes it as an industry or economy that depends on the production, exchange, and use of knowledge and information (Dabić, 2015). Information and Communication Technology (ICT), innovation, skilled labor, and informed individuals work together to produce the knowledge economy, which leads to economic growth. The value of knowledge in society must be understood by all stakeholders, including public and private institutions, government agencies, corporations, and entrepreneurs, in order for economies to make a seamless transition to this next growth stage. Knowledge is an unusual resource with broad economic implications because it possesses the singular property of nonrivalry, which implies that, unlike other means of production, it does not diminish from usage but rather rises in value and potential. The term "knowledge economy" has numerous definitions, but in this article, the authors have tried to describe it as an economy in which knowledge-related activities including production, invention, usage, and dissemination are the main drivers of economic growth (Kabir, 2019).

The knowledge economy transitions us from the rigid organisational structures and processes of the past to the knowledge-based practises and abilities that are the foundation for success in today's firms that compete and gives birth to expertise silos impeding the cross-functional collaboration required to tackle challenges of a global scope, just like management in earlier organisations had given rise to an execution-as-efficiency approach (Edmondson, 2012).

Some of the researches has tried to displays specific characteristics of Knowledge Economy that discern it from other forms of economies as follows (Kabir, 2019):

1. In the knowledge economy, the value of knowledge is substantial because it transforms itself into a fundamental good and a commodity in addition to being a key ingredient in production.
2. The most valuable element of innovation is knowledge, which only grows with time.

3. For businesses, industries, regions, and countries, innovation systems are crucial.
4. The need for society to acquire more knowledge
5. The astonishing rate at which information is codified and new knowledge is produced
6. The proportion of knowledge workers in the workforce increases significantly.
7. The majority of businesses place a high value on intangible assets.
8. ICT usage is growing practically rapidly.
9. The technology claims to have a deeper impact on a person's lifestyle, affecting every facet.
10. Demand for experts with in-depth knowledge of specialized fields is growing
11. Lifelong learning is essential for both individuals and businesses.
12. For employees, qualities and talents like creativity, idea creation, and proactive problem-solving are highly valued.
13. Knowledge-based entrepreneurs become a crucial source of innovation and the growth of the economy and society.
14. Knowledge becomes the primary catalyst in the transformation of the social, cultural, technical, and economic components of society.

As per the definitions of knowledge economies considered by World Bank depends upon the four pillars mentioned below:

1. Institutional frameworks that encourage innovation and the use of knowledge.
2. A strong educational system and the accessibility of trained workers.
3. Access to ICT (information and communication technologies) facilities.
4. A dynamic environment for innovation that integrates the public, corporate, and academic sectors.

As per the Global Knowledge Index (GKI), 2021, the overall ranking of India is 97 out of 154 participating countries with having score of value of 44.3 which is below the world average score of value 48.4. GKI, which provides a variety of trustworthy data based on seven criteria, is a significant addition to the world's knowledge base on progress. Pre-university education comes first, followed by Technical and Vocational Education and Training (TVET), Higher Education, Research, Development, and Innovation (RDI), Information and Communications Technology (ICT), the Economy, and the Environment (MBRF, 2021). Considering these 7 factors any nations can assist their individuals, group and community along with decision-makers for better understanding and addressing relevant

developments and difficulties that ultimately go from developing knowledge to knowledge economy.

The Process of Developing Knowledge into Knowledge Economy

It is the stage where knowledge and information are primarily employed to accomplish the developed goal with value creation. The most important aspect of obtaining the information is problem-solving to cure a broken process and continuous improvement of an otherwise well-developed process in any sector. Depending on where each division lies on the "Process Knowledge Spectrum" (Edmondson, 2012), it may differ between firms and within companies. The more information available on how to achieve desired results, regardless of whether those results are connected to specific types of actions, is what it implies. The maturity of our knowledge increases with the amount of information we have on how to get the desired goal. The maturity of our knowledge decreases with the amount of knowledge we have about how something is done. When process knowledge is mature or well-developed, uncertainty in any environment is minimal. Knowledge workers achieve a certain outcome when they adhere to a predetermined set of instructions. Innovation activities are at the other end of the spectrum, where most of the desired information has yet to be found. The maturity of cause-and-effect links that convert objectives into outcomes is what defines work according to the "Process Knowledge Spectrum", which is shown in Figure 1.



Figure 1: "The Process Knowledge Spectrum"
Courtesy: (Edmondson, 2012)

High-volume repetitive labour, such as that seen in fast-food establishments, call centres, or assembly facilities, is at one extreme of the

process knowledge spectrum. Pioneering research and discovery are at the other extreme of the spectrum, when little is understood about how to achieve a certain goal. This encompasses both large-scale objectives like developing the next generation of green cars or treating a rare type of cancer and smaller-scale ambitions like creating a new kitchen tool or putting in place a new IT system.

Making progress necessitates taking risks and experimenting because the target has minimal past experience. In the middle are complex operations, best exemplified by complex service organisations like tertiary care hospitals, where much knowledge, such as how to treat a rare disease or the variety of patients to expect on any given day, is unknowable or in flux but some knowledge, such as the procedure for drawing blood, is mature. Teamwork in these circumstances is not only difficult but also crucial. The majority of the workplaces that the authors have examined fit the description of complicated or innovative operations. On the Process Knowledge Spectrum, they are either in the center or leaning to the right. Additionally, it has been discovered in factories that create a variety of services, such as fast food, bill-paying services, and others, in addition to items like vehicles and computers. The divisions and classifications shown in Figure 1 were motivated by the disparities between these various environments.

Routine Operations

Every institution either its educational, businesses or social, all uses well-developed and carefully documented or non-documented process of knowledge transmission, whether they are making toasters, vehicles, laptops or socialized humans. There can be no space for doubt. Although learning is still vital, it is mostly concerned with improvement and finding ways to make the current process more precise, affordable, and time-consuming so that capital formation can take place with the help of all those institutions. Success, in essence, is increased effectiveness. However, even normal processes don't continue indefinitely. In order to create new procedures that will soon become established, new machinery and new items sometimes need interim problem-solving. New standards and scripts can be developed once the issues are resolved and the hitches and bumps are gone to maintain the continuity. Then, novel goods or services become commonplace with the help of routine practice of knowledge and information.

The phase of transition is brief. As a result, teaming and organizing to learn are essential components of planning to execute for the better economy.

Complex Operations

Complex operations are difficult because of varying arrival times, unique client demands, and unpredictable interactions. For certain instances, the knowledge on how to achieve the majority of the specific results is in a pretty mature level, but many can be challenging to forecast. Thus, the mix of tasks is ever-changing. Frequently, interactions between old and new duties lead to unusual, unexpected, or harmful outcomes. In this scenario, problem solving is the primary knowledge learning method. The majority of issues as per researchers and academicians, work process issues: interruptions that prevent tasks from being completed, frequently as a result of resource, talent, or time constraints or other forms of interference. However, complex organisations also deal with more significant issues and difficult obstacles, such as safely running a nuclear power plant or running a space exploration mission. In order to better understand consumer arrival and need patterns, increase predictability, and create less chaotic operations, learning such knowledges may entail data collection. However, it is hard to completely eliminate uncertainty from intricate activities. In these environments, problem solving is a way of life. The skills to develop innovative way to solve the problems convert it for knowledge economy.

Innovation Operations

The main goal of innovation operations is to explore and create new possibilities. Newness is the key to success. Collaboration across teams is becoming more and more important in the development of novel, ground-breaking goods, which comes with its own unique set of difficulties. Working without a plan is a requirement of new product development. The difficulty of creating a new product that is lucrative in progressively shorter time frames increases the inherent demand on teamwork. Innovation operations frequently have hazy, if lofty, goals that need for trial and error, experimentation, and group brainstorming. To assist their businesses, stay competitive, designers, engineers, marketers, and researchers actively and continuously learn in order to develop new goods and services. There may be gaps between team boundaries. At various stages

of the process, people may join and depart the project, and as the project moves forward, roles for certain team members may change. Numerous duties need to be planned, allocated, and made up as they go. Instead of developing in-depth knowledge in a certain field, this is studying to open up new possibilities. Failure is common and anticipated along the path. acceptable rates of failure for a research-based business.

The rise in the premium for education has frequently been attributed to skill-based technological progress. The need for people with education is growing as a result of the fact that many technological breakthroughs require individuals with complementary skills and understanding of that technology. At the same time, technology eliminates low-skilled jobs, reducing the demand for employees with less education. There seems to be a general consensus that the abilities necessary for modern employment have changed. Surprisingly little study has been done on the abilities required in the knowledge economy (Snellman, 2004). The knowledge related to any thing from the natural phenomenon to cultural practices can be converted and used for the purpose of generating economy. So, uniqueness of information about anything must be utilized in that way. The skills and knowledges associated with indigenous practices like traditional pottery practices, folk medicines, cultural practices and other natural phenomena can also have potential of fulfilling the basic principles of Knowledge economy.

Conclusion

The literature and research available on the knowledge economy pays less attention to information diffusion and effect and places a greater emphasis on knowledge generation for the purpose of capital formation. This omission is problematic since a fundamental finding of the productivity debate is that large productivity increases can only be made when new organizational practices are combined with complementing technological advancements. Information technology that enables the widespread dissemination of knowledge cannot be effectively connected to a hierarchical control structure. This may have caused contrasting explanations of the knowledge's role as the most significant economic resource in the knowledge economy. The role of knowledge workers plays an important role in development of economic operations in countries like India but the article then made the claim that scientists' social structures have not been able to identify what

divides the knowledge economy into two directions when dealing with theoretical and tacit knowledge as different and independent categories of knowledge in Indian context. Philosophically, they failed to explain how it would be conceivable to see these different categories of knowledge as interconnected. Sociologically, they were unable to comprehend the connection between knowledge and day to day cultural practices. This kind of study has at least two implications for educational and economic policy. The first is about how folk knowledge is organized in higher education and research, and the second is about how educators may help students develop the abilities they need to engage in knowledge cultures further creating values in economy. The presentation of credentials as a replacement measure for the knowledge necessary in this economy, however, raises significant challenges in light of the cultural foundation of the knowledge economy. In this respect, it is little difficult to measure knowledge and culture directly; therefore, other standards should be established. Instead, greater emphasis should be put on cultivating forms of knowability for a specific way of life where cooperation and communication are viewed as essential components of an education meant to prepare students for employment and living in a knowledge society/economy. Folk knowledge related to rituals, festivals, heritage culture etc can also be the better example for knowledge economy. Finally, it's important to stress that, despite the knowledge economy's unique characteristics, given the emphasis on markets and profits, it is doubtful that these traits represent a new kind of capitalism. Therefore, connecting the quantitative cum qualitative indicators with proper assessments along with significant changes in organizational practices and their results will be one of the major challenges for social science research that handles the term knowledge economy.

Works Cited

- [1]. Dabić, J. Š. (2015, June 23). Evolution of the Knowledge Economy: a Historical Perspective with an Application to the Case of Europe. *J Knowl Econ*, 01-18. doi:0.1007/s13132-015-0267-2
- [2]. Edmondson, A. C. (2012). *Teaming*. San Francisco: JosseyBass A Wiley Imprint.
- [3]. Kabir, M. N. (2019). *Knowledge-Based Social Entrepreneurship*. New York: Palgrave Macmillan.

doi:<https://doi.org/10.1057/978-1-137-34809-8>

- [4]. Kretchmar, D. L. (2008). Focus and Folk Knowledge. *Journal of Physical Education, Recreation & Dance*, 79(06), 51-56. doi:10.1080/07303084.2008.10598201
- [5]. MBRF, U. a. (2021). *Global Knowledge Index 2021*. New York: United Nations Development Programme and Mohammed Bin Rashid Al Maktoum.
- [6]. Sarma, A. K. (2021). Pottery Promotion Through Institutional Development for Sustainable Cause in India. (D. M. Batcha, Ed.) *Modern Thamizh Research*, 09(04), 634-639.
- [7]. Sarma, A. K. (2022). The Pottery art as Sustainability and Luxury Products. *Nagfani*, 12(41), 205-209.
- [8]. Snellman, W. W. (2004). The Knowledge Economy. *Annual Review of Sociology*, 30, 199-220. doi:10.1146/annurev.soc.29.010202.100037