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SHORT ARTICLE

ON THE REFORMATION OF KNOWLEDGE IN ECONOMICS  
AND  
CAPITAL RESOURCE INEQUALITY (CRI)

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*November 14, 2020*

# CAPITAL RESOURCE INEQUALITY

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## Abstract

The goal of this paper is to discuss the basis of knowledge inequality in affecting positive growth and development of a country. Optimal and rational allocation of resources is a requisite for efficient distribution of any resources—whether natural or synthetic resources (knowledge), within a society. Knowledge now being considered a primary form of capital resource, it forms the backbone of a national economy driven by the knowledge of high-technology manufacturing and production. It is also a form of *intellectual capital* which requires human endeavor for its creation and acquisition. Since knowledge is imparted by education and learning, the role of education in delivering knowledge is one of the most important factors of national development and social progress. Inefficient, irrational allocation of this capital resource results in widespread social and economic inequality which could be reduced only *if* there exists fairness in its allocation processes. This paper attempts to highlight these issues and introduces a new form of inequality—*Capital Resource Inequality* (CRI) which addresses the problem of knowledge allocation across societies.

Keywords: *Capital Resource Inequality (CRI), Intellectual Capital, Knowledge, benefits of knowledge, reformation, education, access to knowledge, use of knowledge, inequality*

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## 1. INTRODUCTION

The immediate occasion for this research is, certainly, a scholarly debate and deliberation which reflects on the benefit and use of knowledge in contemporary society. Our world today is in a digital revolution that is driven by the power of information and communication technology (ICT). But beyond that, we live in a schooled society wherein education is responsible for the continuous transformation of global society and culture (Baker 2014). This transformation is brought about by knowledge which is a power derived from education and learning (Bacon 1900). In fact, *knowledge* has always been at the forefront of human development and social progress ever since the antiquity. The role played by knowledge in changing and transforming our society is nonpareil. It is not only true, but factual beyond doubt or skepticism that knowledge has the power and the capacity to transform and reform humanity and its constituents—human beings. Much of that transformation is due to reformation of the people and their knowledge and the societies

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\*. This paper is based on the original idea of *Capital Resource Inequality* (CRI) conceptualized herein. It is intended to arouse curiosity and stimulate discussion among scholars and researchers working in the fields of social economics and educational sociology.

that they have created within which they dwell. Modern Civilizations have seen such unprecedented developments because of the contributions of great reformers including renaissance scholars, philosophers, modern and post-modern social thinkers, and men and women of ideas and letters. The period of renaissance marked the rebirth of intellectualism characterized by a new form of capital resource—*intellectual capital*. (Brooking 1998; Petty & Guthrie 2000). Reignited, therefore, was the “candle of enlightenment” that not only helped remove the veils of darkness by illuminating humanity, but brought us back from the dungeons of the Dark Ages pitted with ignorance and mysticism. The intellectual pursuits of the renaissance scholars, natural philosophers, and the literary figures of the times profoundly improved the *quality* of knowledge being made available to the common people. It triggered an era of *intellectualism* and rationalism that gradually helped to spread education among the general masses and that which led humanity to think and contemplate on the extant nature of socio-economic realities. The period of great restoration have had its greatest impact on humanity—for it transformed people into *thinking* beings—and then, into *learning* mortals. The period heralded the age of scholasticism and learning, for sure. The means and modes of transmission of knowledge improved too with the time and people became more aware of the necessity of “knowledge” as being one of the most important drivers of socio-economic progress. For, it is customary to recognize further on that “knowledge” is *powerful* enough to be the driving force of modern societies, and that which too—is fueling the engines of current global growth and development (Brinkley 2006). Today, the application, utility and usefulness of knowledge is well obvious in the society (Hayek 1945). What is less obvious—and, is still being overlooked—is the pertinaciously lingering problem of rational socio-economic order. Actually, one may drop a question: What is the major economic problem that our society faces today? There are many, but the major ones—the problem of allocation and of growing inequality, demand a closer attention to details. Therefore, the answer most likely could be—the problem of rational allocation of resources (Arrow 1972) followed by the widespread prevalence of social and economic inequalities (Dasgupta and Ray 1986). If the former (*problem of allocation*) is the cause of concern, then the latter (*inequality*) becomes its effect to worry about. The order is in the air—but disorder is on the ground. This disorder concerns the problem of rational allocation of capital resources which in this case is, knowledge.

However, these are not at all the issues that I would like to confront upon in this paper, for I have a different design of defense and a plan of attack of my own. The real problem lies somewhere else. It is true indeed that the unrestricted flow of information characterized by pervasive dissemination and spread of knowledge has benefited humanity by empowering people and improving practices around the world. Today, information is more easily and much widely accessible to us by means of internet and mobile communication technologies. But to acquire knowledge—there is a *cost* attached to it. And, getting educated by better means and best methods has become expensive too—nowadays. Indeed, education has become costly—as it is being commoditized (Gibbs 2010; Tilak 1991)—although it was once *in wanting* a couple of centuries ago! Education imparts knowledge which becomes an asset to the owner of this “knowledge” and becomes a principal resource that has some value attached to it to be employable for profit. Knowledge has thus become a *power* as Francis Bacon<sup>1</sup> once defined it—and a powerful *asset* too—a *source* of resource and income—rather, a capital input to output as well as a *commodity*—by being one of the most important factors of production and service. However, this isn’t everything that meets the eye—for there’s more which escapes our attention. But a closer look and an

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1. Bacon, F. (1900). *Advancement of learning and Novum Organum* (No. 18). Willey Book.

unfathomable attention to the prevailing socio-economic problems bothering us would mean something different than what is being presented on paper.

## 2. THE PROBLEM OF RATIONAL ALLOCATION

During the period preceding the industrial age, the term *allocation* did not have much meaning. The control of regional and national resources was mostly commanded by feudalism, imperial powers and monarchical orders. The problem of the bygone era was naturally, of *availability* rather than of *utility*. A rational socio-economic order was lacking. With the growth of knowledge and rebirth of knowledge societies during the renaissance, some degree of rationality was being embedded into the social order, but it was compounded with a higher degree of economic exploitation of the weaker nations by the colonialists. This has been the characteristics of the *age of renaissance* which was marked by cultural development and widespread social and intellectual changes transforming the society at large (Thompson 1996; Levi 2004). This period of social transformation and progress saw the revival of learning and education, art and architecture, literature and philosophy, and finally, witnessed unprecedented scientific advancements accompanying rapid evolution of various intellectual domains. It shall be born in mind that any progress *demand*s new knowledge and resources. Industrial progress demanded more resources for human consumption and human needs and necessities increased as well demanding new knowledge of best uses of the available scarce resources. This knowledge of “best use” refers to methods, techniques or process—*technology*. This created two economic strata or social class: the producer producing goods and services, and the consumer. There has been another social category—the “working class” that served (or whose services were considered) as inputs (means) to production. The owners of capital and production have had the control over scarce resources which were inputs to production—both human resource and capital. The great divide soon ensued with rising inequality in wealth and capital—between the owners of the capital and the working class. With increasing demand for more industrial goods and services that meant utility, the economy began to face a problem of new economic order: “rational allocation”.

The problem of economic allocation of resources thus have attracted economists, great thinkers and sociologists alike but none have so far been quite able to formulate any standard or permanent solution to solve this issue. Likewise, there have been attempts thereof to devise optimal conditions for determining the *best use* of available resources for the best use of available means of production of goods and services utilizing such scarce resources. Questions therefore arose regarding the best and ‘optimal’ use of available resources rather than solving the problem of allocation: i.e., how *efficiently* the available resources are being utilized for production of goods and services? F.A. Hayek (1945) attempted to address this issue by presenting the conditions for solving the ‘optimal problem’ of determining the *best use* of available resources rather than approaching the problem of allocating resources. The problem about the rational socioeconomic allocation of resources, therefore, is an old problem still seeking new answers. The command and control over resources, and *allocation* of resources still haunts the scholars and economists of the day as it did before. No rational economic order has been in place so far that could solve the problem logically unless invoking the powers of *welfare* and *equity*. But in order to examine this problem, we must first be able to characterize the problem beyond the rational economic order. That is to say, to facilitate understanding of *how* to secure the

best use of available resources. For best means of using it, one must be able to know *what* best resources are available to us, and how much of it is available for allocation. Also an important determinant of efficient production is to understand by *what means* we could achieve the best means of using available resources.

### 2.1 Knowledge as Capital Resource

Is knowledge a capital resource? What is the role played by knowledge resources in social and economic developments? And, what is the role played by knowledge in transforming our society? Indeed, knowledge plays the most prominent role in helping us to build up our capabilities. Today, economic growth is intimately associated with human capital (Andersen 2018). Knowledge as human capital has the capacity to transform and reform societies. Given the growing necessity and importance of knowledge in society, various means, methods and mechanisms are being discovered and invented by which knowledge is more quickly and more efficiently shared among the users. The most basic forms of knowledge transfer, allocation and its dissemination are by education through schools and colleges and universities which is among the oldest traditional methods of imparting instruction. Teaching and education, nevertheless, have greatly evolved over the last few centuries which saw rapid progress and advancement in learning and teaching. Ever since the dawn of the Industrial Age, knowledge came to be recognized as an important determinant of production. And then, with the birth of the digital era, it became an indispensable human capital resource (Ployhart & Moliterno 2011; Andrews & Criscuolo 2013). Hence, its rational allocation would seem to be an appropriate approach toward reducing global inequality. But again—several questions levitate in our minds;

- (i) How economic resources are *rationally* allocated?
- (ii) Is *knowledge* an economic resource?
- (iii) How can knowledge help us to *allocate* resources more efficiently?

Allocation strategies can be designed based on expert knowledge of economics of efficient distribution (Arrow 1972). The knowledge of allocation mechanism can be helpful in this regard (Chatterjee 2013). Using such prudential knowledge, it might be possible to allocate scarce resources more expeditiously among the needy families living under abject poverty. Allocation of knowledge using the *knowledge* of efficient allocation is the key toward reducing the knowledge gap inequality in rural areas. It is for the reason that the cost of inadequate education for the younger generation of a nation (Belfield & Levin 2007) could be devastating in future. So, knowledge is a “necessity”.

Undeniably, knowledge is one of the most important drivers of global economy (Brinkley 2006). Knowledge is the product of our learning, creativity, thinking and ideation. The present economic growth and development is led by human resources (Behrman 1990). It is what the structures of digital economies are built upon. It is indeed a capital resource—the best one perhaps—which has definite utilities and benefits. Regarding its rational allocation, it depends on “how” it is allocated in the society. It is this problem of “how” which always seems to be besetting the “optimal allocation” process. Nevertheless, knowledge is an essential input to production which also have an exchange value when traded as a good—a finished product or a service (e.g., software, teaching, etc.). The availability of some kinds of knowledge is ubiquitous; whereas other types of knowledge like for example, knowledge of art and architecture, knowledge of technology and science are the products of human creativity and endeavor. By all means, knowledge is an “economic resource”; and, we can aptly say that knowledge is a form of merit goods and merit capital (Arcelus

& Levine 1986) as well.

### 3. THEORY OF CAPITAL RESOURCE INEQUALITY (CRI)

In a tenor alike Hayek (1945), let me ask once again: What is the major economic problem *today* that our society faces? This is most presumably related to the problem of rational allocation of scarce resources (Koopmans 1951)—given that there is growing *inequality* of wealth and *disparity* in wellbeing (Dasgupta & Ray 1986): I introduce this entity a new form of social capital inequality something similar to Lin’s concept of social inequality (Lin 2000)—and I call this “*Capital Resource Inequality (CRI)*”. This is for the reason that knowledge now being considered a human capital resource, its deficiency or inefficient distribution may lead to suboptimal allocation that may result in social inequality. A simplistic mathematical equation describing this inequality incorporates three major variables; e.g., expenditure on education as % of GDP, expenditure on research and development as a % of GDP and total output (nominal GDP). The equation can be presented as a ratio of  $\sigma: \beta \times \gamma$ .

$$\chi = \sigma / \beta \times \gamma \quad \text{eq.1}$$

Wherein, the variable  $\sigma$  denotes expenditure on research and development as a % of GDP,  $\beta$  signifies expenditure on education as % of GDP and  $\gamma$  denotes total output (nominal GDP) of that country. The left hand side of the equation,  $\chi$  denotes CRI as a measure of social capital inequality. For a country like India, CRI comes around (0.75), for USA it is (11.2), for China (8.19), for France it is (1.01), for Germany it reads as (2.68) and for Brazil it is (0.28). For Finland and Israel, this comes around (0.12) and (0.31) respectively. For UK, this reads as (0.80), while for Japan, it is (4.51). The higher values of several countries, including USA, China, Japan and France account to their larger share of total output or GDP being very high. What this means is, that the values derived as CRI denotes the overall knowledge pool (resources) being available for that country and how that country is fighting education inequality. A low score for Finland (0.12) depicts that though Finland is a developed country, it is fighting inequality in education<sup>2</sup>.

Having introduced the concept of CRI above, it must be acknowledged that in today’s modern digital societies, *knowledge* has become the primary resource and the engine of global economy (Stiglitz 1999; Brinkley 2006). Hence one of the “best uses” of resources according to this theory of allocation is, investment in education and learning which helps create new knowledge resources (Baum & Payea 2004). This is a proposition well assumed to be *rational* by many economists and social thinkers of the past century. Our logical thinking about rational economic order consequently reinforces the *idea* of education and learning as a solution to the problem of efficient resource allocation. For, by increasing our knowledge pool about economic circumstances we could gain much more understanding of the *microeconomics* of resource allocation that may have led to persistent poverty in poor countries. Also, it may provide us with “clues” regarding the nature of inequality and disparity in social and economic wellbeing due to *misallocation* of capital resources. It is thus imperative to note that we cannot but expect to solve economic problems of society with incomplete information, since our knowledge of economic circumstances is still

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2. <https://www.theglobeandmail.com/news/national/education/how-finland-is-fighting-inequality-with-education-andwinning/article29716845/>

imperfect. In this short paper, I endeavor to gain a better understanding and knowledge of economic situations that are so much associated with social circumstances that determine the real availability of resources, and *how* such resources are controlled. I strongly assume that the real problem lies with the gap in understanding resource *utilization* rather than its allocation. I also review the problem of resource availability besides attempting to answer the questions asked within the aforementioned sections: What best resources are really available to us and how much of it is available for allocation? Hence, my goal in this paper is to elucidate, illuminate and illustrate the economic calculus in brief in order to be able to address the problem of allocation of (knowledge) resources to devise the *best uses* of available resources most efficiently.

## I

Poet Laureate Rabindranath Tagore, the visionary doyen of poetry, prose and intellect, urged about building strong foundations that could help strengthen the roots of education. He also stressed on the need and necessity of technology in education. Tagore in his writings<sup>3</sup> insisted that “education must address necessity”. Educationists and scholars have rampantly debated on the issue and topics related to education and pointed towards making learning easier, comprehensible and widely accessible. Education improves the quality of life by contributing to positive growth of individuals and augments the standards of livelihood by raising the basic levels of income (McMahon 1999). Education imparts knowledge which has the power to produce or induce change in individuals. It has been observed from time immemorial that acquisition of knowledge enhanced the quality of living standards of the poor people around the world. With gradual decline in the economic importance of farmland and rise in importance of human capital, acquisition of knowledge and skills through schooling increased the prospects and the welfare of poor people. Industrialization as an engine of growth gradually took over from agriculture in the development of the national economy. A sustained transition from agriculture-based economy saw India getting transformed into a knowledge-base economy (Singh & Kaur 2014). The utility and value of knowledge begun to be acknowledged soon thereafter. Knowledge has now become one of the *decisive* factors of production in improving the welfare of the people.

A significant shift in the percentage of contribution of different sectors to the national output (GDP) bears the testimony that knowledge has made its presence felt as one of the foremost resource inputs to gross domestic production and service. The contribution of agriculture to national income of India has seen a dramatic decrease from a 55% in 1947 (Singh & Kaur 2014) to 17% in 2010 with the concurrent rise observed in share of industrial outputs as a percentage of national income. By this I did not mean that agriculture has lost its value—for it still contributes significantly towards income and welfare of the nation. It only depicts how the patterns of national livelihood have changed over the years. Coming back to the original idea of rational allocation, I refer to Hayek’s paper (Hayek 1945) that stresses on best use of available resources—and in this case—knowledge resources. It explains best how to put knowledge into optimal use for social benefit. Now this is important—for it has tremendous implications on the society. Having knowledge of sources, resources and means and methods of production and process is certainly advantageous. Having advantage of technical knowhow is also beneficial—for specialized knowledge comes with skills and expertise that have social and economic importance. But it is methodically pertinent to say that neither it is possible for anyone

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3. Tagore believed in Self-realization. See Tagore, R. (1922). *Creative unity*. Macmillan.



to know all that is, or all that ever will be, for the future is highly uncertain—and the best things we could do about is to forecast or raise our expectations about the future. By paraphrasing Hayek who had earlier mentioned that “*if*, and *only if* one could command the absolute knowledge of means, and *if* one could begin from certain given systems of preference then it is possible to construct a rational economic order. The problem that would remain, then, would simply be solved using logic”. But this is not the case as it seems so far, for the reason that neither it is possible for someone to acquire knowledge of all “means” nor it is possible to assume such a condition of absolute control. A complete knowledge of all the available means of production and process cannot be given to a single person<sup>4</sup>. We do not as yet possess all the information about things that we have not known to exist, nor it is possible for us to know everything about the future which is known to be uncertain. Moreover, natural resources are scarce and are discretely distributed across different regions. It is for this reason that resources needs to allocated optimally. Here arises the problem of allocation which must be addressed properly. It must be taken for granted that most of us have limited means to meet our ends, and since resources are scarce, it is necessary that such resources should be carefully allocated and then put into best use. The scarcity of resources makes it valuable. However, this explains not what this research intends to do. Friedrich Hayek maintained that knowledge should be put into *best use* for social benefit—but it appears that new problems related to its optimal allocation and acquisition of knowledge resources have cropped up. In the next section we discuss about evolving nature of such problems.

## II

Education is our basic necessity and our fundamental right<sup>5</sup>. Education is capable of giving someone dignity and honour more nobler than what power, wealth or patrimony could give. Education and learning brings lasting good. It frees our mind from the bounds of ignorance and strengthens our will to excel. The knowledge that it imparts carries with it an inestimable value (Jonathan 1997b). An educated society generally consists of an educated workforce which is an asset to a nation. Our modern economies are driven by knowledge and the contribution of education to economic growth is so vital that it calls for rational planning in optimal and adequate allocation of resources in the educational sector (Bowles 1967; Arrow 1972). The social and economic benefits of education (McMahon (1999); Baum and Payea (2004)) are indeed incalculable, for knowledge is one of the most important determining factors of global economic development (Bouzov 2016). Knowledge also plays a significant role in overcoming the present extant inequalities (Bouzov 2016) for the reason that education provides the knowledge of means and ends that helps diminish the gap between the rich and the poor by providing more opportunities to success. Knowledge is the key driver of high-technology production and manufacturing whereas the science of *invention*—which is production of new knowledge is itself dependent on knowledge (Arrow 1972). Undeniably, it can be said that a technically competent workforce constitutes the backbone of a technologically productive country which enables that country to earn foreign exchanges through exports of finished goods and services.

Thus, education confers knowledge which forms the building blocks of a nation. Therefore, it has become mandatory for any country to provide (free) compulsory education to

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4. Hayek specifically mentioned about this impossibility in his paper titled, “*The use of knowledge in society*”, *The American economic review*, 35(4), 519-530.

5. Elementary education is a fundamental right of every child. See Juneja, N. (2003). Constitutional amendment to make education a fundamental right. *NIEPA Occasional Paper*.

its children so that no one is deprived of it (Singh 2002). The motto regarding universal education<sup>6</sup> proclaims “Education for all, equal rights to education for all”. However, it could also be rephrased in a better way such as, “equal rights on educational *resources* for all”, for the cost of higher education and the access to quality educational as well as instructional materials and resources have become relatively expensive. This, according to some scholars—is due to commoditizing of education and transforming it into a private good for trading (Tilak 2008; Gibbs 2010; Patnaik 2018). We shall come to this issue later on. Now, with the rise of internet technology following the ICT revolution which paved the way towards making both education and educational (knowledge) resources accessible universally, it still remains to be seen how far this could benefit those who still remain outside the purview of inclusive growth and development. And, moreover, it must be assessed how expeditiously education pervades the most down-trodden and the neglected—which, in many instances—and in most developing countries of the world—including India and Sub-Saharan Africa, remains isentropically a problematic issue. Allocation of resources in the education sector of a national economy (Bowles 1967) provides a clue about its future economic growth and sustainability of ongoing development of that nation. As a matter of fact, allocation is a *strategic* mechanism. It is a mechanism of distribution according to a plan or a policy. In modern digital economies, knowledge as digital capital is being created as a product and utilized as a resource (Tapscott, Ticoll & Lowy 2000) thus being a means to an end, and an end as well. It is also an input to and an output of production and service. Thus, knowledge when it becomes a product—a *commodity*—it can be traded. The benefit and use of knowledge in society, therefore, cannot be underemphasized.

However, it appears that there exists a logical problem of reasoning the dynamics of how rationally economic resources are allocated in the education sector. Since knowledge is a resource and it has an economic value attached to it, it becomes necessary to understand how this resource could be optimally allocated and put into use. As it is generally agreed that education and learning imparts knowledge, there should be provision for most effective but economical ways and means by which knowledge could be transferred and distributed among the learners. Knowledge being a capital asset which is the foundation of a knowledge economy (Brinkley 2006), it becomes evident from the disparity of distribution of knowledge among the people that there exists a certain kind of problem of rational allocation. My deeper contention is that, that misallocation of this capital resource—knowledge, results in social and economic inequalities (Chatterjee 2013; Bouzov 2016) that tantamount to economic disparities among the people. It has been acknowledged that there exists unfathomable imbalances in the spheres of technological innovations among different regions of the world. For instance, let us consider technical knowledge as a high value capital asset, for it involves substantial amount of time, skill, ability and expertise to acquire technical knowledge by professional education and training. Distribution of technological knowledge is unequal among different countries. Owner of technical knowledge commands a better value on a “job market”, for technical education is perceived entirely as an exchange value; i.e., it enables a professionally educated skilled technician to obtain a certain amount of money in exchange for a service (Patnaik, 2018). There is also a certain cost attached to acquisition of technical knowledge. Moreover, time and training are among the necessary factors behind acquisition of technological knowledge. There is also a burden of cost attached to it for those who could barely afford to be educated technically in technological sciences. But in the long run, such education proves to be valuable and the knowledge acquired thus becomes a capital

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6. PROBE Team, 1999. Public Report on Basic Education in India. Oxford University Press, New Delhi.

asset for it is perceived as an exchange value which may have some benefit (Jonathan 1997b). The real problem is such that knowledge is often expensive for a poor country which is least developed and for its poor people who subsist barely under a few dollars a day. A certain technological gap, therefore, exists between a poor developing country and a rich, developed nation. In fact, our world is divided by this nature of socio-economic gap (Bouzov 2016). The technological advantage commanded by a knowledge-based high-tech economy generally adds to its economy and leads to its further prosperity which results in economic domination in the spheres of high technology, while it is not so for a poor country whose people are deprived of access to the wealth of knowledge. This results in severe *inequality* in knowledge capital among different countries—or different regions of a same country. Such problems generally arise due to “chronic *suboptimal* allocation” of budgetary funds meant for education, and due to the overarching scarcity of resources devoted to the education sector. An analysis of country-wise break-up of the ratio of funds allocated in education vis-à-vis gross GDP generally reveals how much resources are being allocated to this sector in comparison with others<sup>7</sup>. The current data reveals that the budgetary allocation to education sector of India is Rs. 99,300 crore which is 3.2% of the total union budget. It is also evident that the country spends about 3% of GDP on education which ranks India at 62nd in total public expenditure on education<sup>8</sup>. Public expenditure on education in India remains low (De, & Endow 2008) despite attempts to step up such spending. This is in stark comparison to what some governments, but not all, of developed countries generally spend on education. However, it has been observed that some advanced economies like Singapore (2.9%) and Japan (3.6%) spend less than 4% of GDP on education. Nevertheless, India’s expenditure on research and development (R&D) spending as a % of GDP is quite low (0.9%)<sup>9</sup> when compared to other advanced countries like USA (2.7%), China (2.2%), Japan (3.2%), and Germany (2.9%) respectively.

In most least developed countries (LDC), this ratio tends to be generally *low*—as observed (but not reported), as resources devoted to the education sector appears to be perennially deficient. But, what is the reason of such resource scarcities? Now, *if* “knowledge” is considered to be a public good, then there exists social and economic heterogeneity on the availability of this public good (Banerjee & Somanathan 2007). This deficiency or “scarcity” as it often appears to be, according to me is *programmed*—being politically motivated and *artificial*: e.g., due to corruption and political degeneracy (Dreze & Sen 1995), or unsound and faulty policy making that gives rise to such resource scarcity due to defalcation. Therefore, a general *measure* of knowledge equity is the need of the hour that could effectively weigh the balance of budgetary allocation devoted to the educational sector. This seems to be a logical problem, a problem of reasoning the dynamics of rational resource allocation process which could be solved based on certain conditions *if* and *only if* such conditions are met. And, if not, then there may arise *Capital Resource Inequality* (CRI). By this I mean that knowledge is not homogeneously allocated in the society, and it is neither so surprising nor expected. But it might be envisioned. The distribution of knowledge across societies is not uniform for the reason that information is dispersed discretely and acquired heterogeneously. Distribution also depends upon the nature of availability of knowledge across regions. Whereas information and access to information is patent in some regions, it may be partially so in other regions. The reasons are not difficult to ascertain; e.g., unequitable access to information, lack of proper provisioning of

7. [https://en.wikipedia.org/wiki/List\\_of\\_countries\\_by\\_spending\\_on\\_education\\_\(%25\\_of\\_GDP\)](https://en.wikipedia.org/wiki/List_of_countries_by_spending_on_education_(%25_of_GDP))

8. *ibid*

9. [https://en.wikipedia.org/wiki/List\\_of\\_countries\\_by\\_research\\_and\\_development\\_spending](https://en.wikipedia.org/wiki/List_of_countries_by_research_and_development_spending)

knowledge, political restraints on its access, inadequate means and modes of information transmission, among others. The poor state of condition of the primary education system bears such a testimony that was actually meant for equitable access to schooling for all. The school system is not without corruption as Bajpai and Goyal (2004) points out in their research—and the primary education system is plagued by a high degree of degeneracy. What seems to be more apparent is the problem of corruption and unaccountability which is inherent in the education sector of a developing country like India (Bajpai and Goyal 2004; Sahni 2015; Singh 2002). The whole point is that, if knowledge is not made properly available, or if such knowledge is of low quality, it will have *less* utility and benefit. Remedial measures, for instance, to counter such a sorry state of affairs may be summarized as follows:

(i) The amount of resources allocated in the education sector is far from adequate, so it needs to be increased (Blaug 1970).

(ii) Expansion accompanied by reformation of primary education system is the prime requirement for further development of a developing country.

(iii) It requires efficient allocation and accountability of funds allocated in the education sector.

(iv) Need for introduction of advanced technologies and teaching aids along with digital connectivity for access to the internet/web portals.

(v) Allocation of funds for building libraries attached to primary schools for students' access to information and indigenous knowledge.

(vi) Allocation of adequate funds for infrastructure development in public schools.

Primary school is the school of choice for the rural population of India which is a low cost option for education for the poor children (See Srivastava 2008; Härmä 2011). To meet the requirements of the drive towards universal basic education for all, the Government of India undertook a massive reformation campaign targeting the primary schooling system in most parts of India and further allotting primary schools for most villages in remotest areas of the nation. However, the quality of provision was largely ignored as part of this development resulting in deplorable conditions of most primary schools across the country. This has resulted in much lower quality of education being offered to the rural people leaving them with little option but to shun the government sponsored schooling sector in favour of the only alternative—*low fee private* (LFP) schools (Srivastava 2006; Srivastava 2008; Härmä 2011) that mushroomed at the expense of the government primary schools. Meanwhile, it is debatable whether if such development—the growth of LFP schools is pro poor and equitable (Härmä 2011), and whether if it really meets the needs of the poor families who could barely afford the cost of LFP schools. Equitable allocation of knowledge resources and equitable access to primary schooling at the grassroot level must be achieved in order to reduce the levels of socio-economic inequality much prevalent in a developing country like India.

Although the literacy rates in India have seen an upward trend for the past four decades, the rising literacy rates, however, have been marked by variance and inequality of achievements (Bajpai and Goyal 2004). It is well perceivable that despite having 1.44 million schools across India (Sahni 2015), many primary schools lack basic amenities like functional toilets for girls and running water fit for drinking. Furthermore, while assessing the characteristic features of the public education system in India, one may hardly find it surprising to observe that primary schools operating in rural areas have a

low teacher: student ratio, have only one or two classrooms, no functional libraries, and the quality of education being provided is low. The school environments are not conducive to learning either (Bajpai and Goyal 2004). In such circumstances, the knowledge that is being delivered generally is compromised in quality compared to private run schools that provide better infrastructure and amenities for learning to their students. All these effects are apparent due to the results of unplanned execution of educational policies of the past. It has become a lesson to learn from such developments that when something is to be done, it should be done properly. Education is much necessary at the present, and it will always be in future; and educating the rural youth with “quality knowledge” is a much necessity as well so that they can learn better about *how* to bring out their best by unleashing their hidden potentials. A sustainable educated rural workforce can only be conceived if the children and the youth are brought up and reared with quality knowledge derived from quality education. We must not forget that the primary education system constitutes the backbone of a “Learning India”. Therefore, a complete renovation of the current deplorable state of primary education system in India is a must. Planting the seeds of intellectual growth and development for a younger, future generation would require strong and rich foundations that would likely support the lofty goals of a nation. The lights of enlightenment have been lit up, and it is high time to enrich the soil to support and nourish the minds to cogitate towering thoughts.

### III

In this final section, we shall be discussing on a theme or a topic around which this short research revolves. And the question arising out of that theme is—how knowledge is *used* as a resource? Further on, how to put knowledge into best *use* for social benefit? And finally, how knowledge should be optimally *allocated* as a resource which has great economic importance? To be noted, the stress is being laid more on the “use” of knowledge rather than on its “benefit”. In view of that, any “use” of knowledge in society must be associated with some form of social or economic benefit (Baum and Payea 2004; McMahan 1999). Here, the word *use* denotes specifically the *utility* of knowledge, and the benefit accrued from its acquisition. Now, it is necessary to obtain maximum benefit from utilization of knowledge resources. But the question remains—how much knowledge is made available and how *freely* such knowledge is available to the society? Since resources are scarce and there is a cost attached to its allocation and acquisition, it requires optimal strategies to allocate or distribute resources rationally. Knowledge being a resource, its acquisition is by learning and education whereby it could be observed that education has been commoditized. Commoditization of education is the result of the adoption of business model to attract private investments in order to compete on a global scale. The net result of this being that—it has enabled availability of different qualities of education to a wide range of consumers (Gibbs 2010), but with a diverse degree of price attached to it. Privatizing of knowledge production, nevertheless, has increased creativity in invention of new products for mass consumption. Although knowledge is made more widely as well as much easily available to the general consumers, learning in educational institutions like private schools, colleges, and universities have become relatively expensive. Therefore, although knowledge is made widely available—the allocation of *high quality* learning and education have become skewed; I would not say it has become *suboptimal*. The motto is clear—you will *get* what you have *paid* for. Certainly, one could see little if any but piffling demerit in such a system which is constantly facing stiff competitions from other opponents. If we consider education as a public good, then the fault obviously lies with the state machineries that provide basic compulsory education to its citizens. Now, there remains a problem of

misallocation, mismanagement and *corruption* which strongly undermines the process of rational allocation of resources for national education. Underallocation, and rather more conspicuously—underutilization of educational resources in the public sector still remains a perennial problem in many developing and least developed countries. The quality of instructions being provided by government sponsored educational institutions have also been criticized from time to time due to certain deficiencies attributable to infrastructure and amenities being allocated or being made available to the general public which are, by far, suboptimal, and are often, of inferior quality too<sup>10</sup>. These prevailing conditions result in *allocation inequality* of quality resources devoted to national education. It creates a wide “gap” in knowledge equity between those who could afford the best of education that money could provide and those who have but little means of subsistence at the poverty level. For the latter, they tend to remain (dis)content with whatever meagre opportunities that are being made available by the government to the children for their education.

There also seems to remain a “wide gap” between what is being taught and *how* it is being taught in government sponsored schools and educational institutions with respect to private educational institutions. One may definitely ask; what is the “quality” of knowledge being made available by private and public learning (educational) institutions (i.e., schools)? All these issues, beyond doubt, results in “knowledge inequality” which eventually transcends into a more serious form of disparity—*Capital Resource Inequality (CRI)*. Also, the entire effect pertaining to allocation inefficiency contradicts the statement which previously affirms “Everyone will have equal rights over (quality) education”. The main idea is to improve the *quality* of knowledge available to the students. The idea is to bring in balance to “equilibrate” the quality of education being provided by both private and public institutions. Quality education delivers quality knowledge which empowers the minds of the students with powerful ideas that enables them to think and do things out of the box. Considering the importance of knowledge in contemporary society, it is, therefore, quite tempting to rephrase Francis Bacon’s famous dictum into something anew—like for instance, “knowledge is the *worthiest* power”. And indeed it seems so. The foremost goal, therefore, is to attain excellence and equity in education that would help strengthen human resources which is the prime determinant of a knowledge economy (Arrow 1993).

Now, one may ask whether if higher education is a public good or a *commodity* for trade? It seems that this issue has cajoled into a mere *arcula* less seriously debated by or considered among the academicians—which though seems most unlikely among the sociologists and psychologists. Nevertheless, this question and questions similar to this one have been put forward by Stiglitz (1999), Tilak (2008), Patnaik (2018), Gibbs (2010) among others who argue in favor of education being a public good. Whereas, on the other hand, scholars, economists and educational experts from different schools of thought posit a view that education is both a public and a private good (See Levin 1987; Maringe and Gibbs 2008). Whereas Grace (1994), Tilak (2008), Patnaik (2018), Hüfner (2003), and Gibbs (2010) among others, who hold their stakes firmly to the idea of education being a public good, Patnaik (2018) posits an opinion which further goes like this: That conversion of education into a commodity for trade by profit seeking institutions leads not only to destruction of quality, but it also destroys creativity and originality (See Patnaik 2018). There is certainly a grain of truth in such an assumption, but just a grain—and nothing beyond it. For example, Patnaik (2018) seems to have given some reasons behind his statements: i.e., when education gets transformed into a tradable good (merchandize), it

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10. See, for instance, Bajpai, N., & Goyal, S. (2004). Primary education in India: Quality and coverage issues.

ceases to arouse curiosity in the minds of the students for the reason that students then simply look upon education as a *means* to command a better value on the job market. They seem to lose their desire to learn for learning's sake by losing their interest in going beyond "the given". But opinions such as these appear to be too preposterous, even if we consider these opinions as true for some but not for everyone—for there are always those minds who might have very well conceptualized the true goals of intellectual pursuits. Also, it is in fact delusive to say that creativity is dead or commoditization of education destroys creativity. So, this might not be the case at all as it appears on the surface for these assumptions are fairly misleading. On the contrary, students are being tempted and pushed beyond their limits of endurance to perform better in their curriculum to survive stiff competitions from other students. So, it is the competition which is driving their performance levels; and, it is this competition which is also propelling commoditization of education, while more enticing and lucrative prospects are feeding their creative endeavors in rendering them capable of doing something "big" or "new" that would enable them to stand apart from the rest. So the whole theory that incriminates commoditization of being the main culprit, somehow falls apart. Certainly, commoditization of education has its own peril too, for it renders high quality education more *costlier* and thus unaffordable to those could barely afford to subsist. Indeed, knowledge has great utility but as it has been mentioned above that during the times preceding the *Renaissance* period, the real problem was of nonexistence of knowledge societies due to very little means of access to it compounded by very low literacy rate among the citizens. The real problem, then, was naturally of *availability* rather than of *utility*, as mentioned above. In modern times, however, this problem of availability has been solved since information is now widely available and disseminated for common good. But, again, there seems to have arisen a slight problem of *availability* and *access* to high quality education (knowledge) due to its "commoditization" as a tradable good which is making education costlier and unaffordable to many families who could barely afford public education for their children that comes with a lower cost. Simply put—primary education is *subsidized* and supported by national governments in most developing countries (Jimenez 1986), but its *quality* seems to be compromised and questionable<sup>11</sup>. The question as of "whether if" and "how much" of public resources should be spent on subsidizing education for the poor is an entirely different topic not being covered in this research, but the reader may wish to refer to a classic discussion on this issue by Friedman (1955). This is, perhaps effecting a "knowledge gap", thereby giving rise to knowledge inequality. This may also indicate inequality in social capital (Lin 2000) if knowledge could be considered as a form of social capital. If knowledge is the key to overcoming present existing inequalities (Bouzov 2016), then there must be fairness in allocation of resources for the education sector (Koopmans 1951; Bowles 1967).

#### 4. CONCLUSION

The rationality of economic order has been much debated, and it still remains a hot topic of great discussion dotted with conflicting ideas and confounding theories. Such an order could only be conceived if there exists rationality and fairness in economic allocation of resources, both natural and human made (knowledge). Knowledge is today the driving

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11. See Sahni, U. (2015). Primary education in India: Progress and challenges. The second Modi-Obama summit: Building the India-US partnership, 35-38.

force of global economies, and it has the power to transform and reform the society and if utilized well, results in economic affluence of a nation. Therefore, knowledge is one of the edifices of a knowledge-base economy. Knowledge is derived from education—and education is obtained from schools and institutions of higher learning. Quality education is now a necessity—a *priority* of every nation. This paper attempts to underline the role of knowledge, its uses and its benefit to the society—and its equitable distribution using rational mechanisms so that people are not deprived from its access. It is observed that there exists great disparity in proper allocation of knowledge capital among nations and among the general populations within a same country which results in a new form of social capital inequality; *Capital Resource Inequality* (CRI). The goal of this paper, therefore, is to address this overarching issue and provide remedial measures to deal with problem of allocation.



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