

Skilled Workforce Development and Industrialization in Nepal: Implications for Civic Order Ayush Pratap Singh | Abhas Jha

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Abstract

This study aims to elaborate on how developing a skilled workforce accelerates a nation's economic valuation through industrialization, and how this transition fundamentally restructures society to establish civic order, focusing specifically on Nepal. To investigate this, a qualitative, desk-based research design was used. The research relies on secondary data sources, primarily utilizing industrial registration statistics from the Nepal Government's Department of Industry, alongside international working papers from the Asian Development Bank, national policy reports, and broader academic literature. We analysed this information through a multi-disciplinary approach, synthesizing economic growth theories specifically Kaldor's Growth Laws with sociological frameworks, and applied comparative case studies of developmental trajectories in East Asian economies. Our findings indicate that sustainable industrialization in agrarian economies like Nepal must initially rely on basic, labour-intensive manufacturing. However, Nepal currently faces an acute domestic skilled labour shortage, forcing a heavy reliance on foreign workers. Furthermore, the analysis reveals that industrialization acts as a societal architect; the necessity to manage a growing, urbanizing workforce directly drives the creation of modern civic institutions, such as public schooling and organized policing, to maintain social order. Ultimately, these findings imply that for successful modernization, Nepal must strategically prioritize labour-intensive manufacturing, heavily institutionalize technical and vocational education (TVET), and actively leverage industrial growth to strengthen the public institutions that sustain civic discipline.

Keywords: human resource development, industrialization, workforce, human capital, civic order

1. Introduction

Industrialisation has been an imperative for agrarian economies to transform into a service-based market where, innovation and technological progression prevail. The process of

industrialization makes the shift towards a new social order, where the feudal structure is broken down, and labour becomes a commodity which can be valued at a price and offered in the market. Industries demand labour that shall be skilled and developed, for catering to specific demands according to the necessity of the sector. Primary phases of industrialization demand a small leap, that is towards the production of goods that don't need high technological effort and can be produced in large quantities, thus creating an economy of scale in order to bring down the overall cost. This transformation sets the infrastructure for further developments in sectors that need high technological knowledge and resources. The ample presence of a skilled labour force for the primary phases is of utmost importance in creating a modern industrial society. Nepal Government's Department of Industry (DOI) (2021) data show a total of 203 industries were registered in Nepal in the financial year (2077-78) across deferent sectors, and among them the highest was in manufacturing (70) following, this (40) were registered in the sector of tourism. Though, the share of registered industries concerned with manufacturing is the highest in Nepal, the availability of skilled manpower is scarce to order to provide support for this sector.

The objective of this paper is to elaborate on how skilled labour force increases the prospective valuation of an economy and also creates the fundamental framework for an organised society along with expansion of economic interests. The need for a stable functioning system that should work efficiently in multiple ways to facilitate the industrial economy tends to create a contour of legal, moral and social obligations that bring a new order and structure to the society. Therefore, a civic order emerges from this need to establish a working mechanism for an orderly practice of regulations and social norms that can benefit the larger socio-economic system.

This study is particularly important because it tackles a major, predicament in Nepal's economic modernization the serious lack of domestic skilled labour, which currently forces local industries to lean heavily on foreign workers. While many economic studies limit themselves to strictly financial metrics, this research bridges a crucial gap by connecting economic growth theories with sociological frameworks. It makes a compelling case that shifting from an agrarian society to a manufacturing-based economy isn't just about monetary value creation it serves as a fundamental catalyst for societal reorganization and the establishment of civic discipline. Furthermore, the study provides actionable, strategic policy recommendations, such as institutionalizing technical and vocational education (TVET) and prioritizing labour-intensive manufacturing, offering a practical blueprint for policymakers aiming to build a stable, modern industrial state in Nepal.

1.1 Research question

How does the systematic development of a skilled domestic workforce serve as the essential engine for Nepal's transition from an agrarian society to an industrial one, and in what specific ways does this economic metamorphosis catalyse the emergence of a modern, rule-based civic order?

2. Data and Method

This study employed a qualitative, desk-based research design, utilizing an analytical approach to investigate the nexus between industrialization, human capital, and civic discipline. The methodology was structured around a multi-disciplinary synthesis of economic growth theories and sociological frameworks.

2.1 Data Sources

The research relied primarily on secondary sources, including statistical data from the Nepal Government's Department of Industry (DOI) regarding industrial registration trends.

This was supplemented by academic literature, international working papers from the Asian Development Bank (ADB), and policy reports from the Ministry of Education, Science, and Technology, Nepal.

2.2 Analytical Framework

The paper applied Kaldor's Growth Laws as a lens to analyse the necessity of manufacturing for Nepal's economic expansion. It further utilized a Comparative Case Study method, drawing on the developmental trajectories of South Korea, China, and Singapore to identify successful strategies for labour-intensive industrialization and technical training.

2.3 Sociological Analysis

To explore the emergence of civic sense, the study employed a theoretical analysis of industrial discipline. This includes the application of Michel Foucault's (1975) concept of "panoptic system," where he famously described the factory and the school as "panoptic" institutions designed to create an orderly society through a system of surveillance and corrective discipline. By deconstructing these power structures, the paper analyses how industrial frameworks catalyse a transition from feudal social relations to a modern, rule-based civic order.

2.4 The role of skilled labour force for a developing economy

The most effective way of producing value in an economy has been the manufacturing of goods, most countries that export raw materials are economically weaker in comparison to those who focus on production, as the creation of value through manufacturing/processing increases the possibility of profit exponentially. Hungarian economist Nicholas Kaldor was one of the prominent proponents of this idea. According to him, economic growth is highly dependent on increasing returns in the economy, and higher economic returns in the manufacturing industry contribute to economic growth (Keho, 2018). Additionally, he stated that degree of migration from non-industrial low-performance sectors to the industrial sector's high profitability section determines the pace of productivity and output growth in the economy (Bairam, 2006). Thus, to create a modern functioning and stable economy, importance of manufacturing can be established. For a manufacturing sector to function properly, a developed labour force is of utmost importance, as labour is an essential production factor. A skilled labour, not only makes the process more efficient and the product more enriched with value, but also saves times and related costs concerned to production, thus being an essential part of the system that runs the production-based economy. The development of human resources becomes an essential attraction for the involvement of capital in the economy by the investors. Endogenous growth models assume that investment in human capital prevents returns to capital from falling, and contributes to an increase in capabilities for innovation and the adaptation of new technologies (Romer, 1986).

2.5 Manufacturing as the Catalyst for Growth

The economic trajectory of a developing nation is rarely a linear progression of wealth; rather, it is a structural metamorphosis. Nicholas Kaldor's growth laws offer a definitive framework for this shift, identifying manufacturing as the primary "engine of growth" (Keho, 2018). The core of this theory suggests that manufacturing is uniquely capable of generating increasing returns to scale—a phenomenon where productivity accelerates as the volume of output grows. This is often described through the Verdoorn Law, which posits that a long-run positive correlation exists between the growth of manufacturing output and the growth of labour productivity (Verdoorn, 1949).

For a country like Nepal, where approximately 62% of the population remains tied to the agrarian sector, this shift is more than an economic necessity; it is a prerequisite for modernization. While the agricultural sector provides essential sustenance and employs two-thirds of the population, it lacks the inherent capacity for the systematic technological progression found in industrial settings. As labour migrates from low-productivity rural sectors to high-productivity urban manufacturing, the entire national economy experiences a "productivity bonus" (Bairam, 2006). However, this transition is not automatic. It requires the strategic cultivation of human capital to ensure that labour is not merely "moved," but "transformed" into a skilled asset capable of driving industrial innovation (Romer, 1986).

2.6 Learning from the East: The Role of Strategic Vocationalism.

The success stories of the "Asian Tigers" demonstrate that the bridge between an agrarian past and an industrial future is built through vocational education. In South Korea during the 1960s, the state did not wait for a high-tech market to emerge; instead, it promoted labour-intensive manufacturing exports like textiles to utilize its existing labour surplus (Kim, 2015). This created a "learning-by-doing" environment that paved the way for more complex industrial clusters. Many economies that have taken the prime spot for being a producer for technologically sound, consumer goods, and creating heavy industries, started from the basics laying out the primary structure for the industrial system to stand on. Low end products and cheap consumer goods, have been the starting headway for inducing sustainable industrial development. Nepal in its industrial journey has to start from that very point.

The lack of resources in terms of highly developed human capital or industrial machinery, leaves Nepal with this option that can actually help the economy in terms of building a robust infrastructure around manufacturing. Countries like Japan, South Korea and China started off their industrializing endeavour with this method. The industrial policy in South Korea promoted labour intensive manufacturing exports consistent with the country's comparative advantage in the 1960s. The major Korean export industries were labour intensive manufactured consumer goods such as textiles, plywood, and wigs (Kim, 2015). Thus, the spur in, Nepal's industrial landscape can arise from the emergence of a widespread manufacturing sector that produce's low-end consumer good's apt for export, and for that, a skilled labour force is an essential factor. Currently most labour in the country comes from India because of the lack of a skilled work force domestically.

People employed for roles like Mechanical Engineers or Designers, Electromechanical Engineers are occupied by immigrants. Likewise, CNC operators, PLC operators, Laser cutting and welding technicians, industrial electricians, digital machine operators, A/C maintenance technicians, machine operators, boiler operators, chemists in Cement, food technologist, cutting master, finishing, and tailoring workers in garment industries are from India. The industries are compelled to bring workforce from India as there is an acute shortage of skilled workers (Lamichhane et.all, 2021).

Though, various programmes related to vocational training and skill building are run by the government, it's not enough to get the required output in terms of quality and reach. Countries, which have achieved a sustainable model of skill development did so, by heavily investing in it. Vocational education in China is provided at three levels: lower secondary, upper secondary and tertiary, thus expanding the scope of specialization and time served for training (Min & Zhu, 2019). Similar policies and systems have been inculcated all around the world. Vocational education is claimed to have the closest connection with the economy and society, with the most direct contribution and the most apparent effects (Pavlova, 2014). Another issue that poses a problem is that the Nepalese market while facing a shortage of labour is also a major contributor in terms of providing it for other countries. Concomitant with the lack of opportunities for a Nepalese worker comes with the problem with getting, dignity of

labour, most blue-collar jobs in Nepal are ascribed to a person's lower social status, thus discouraging people from getting employed within the country. These shortcomings in the Nepali Market make it difficult for industries to sustain in it. The scarcity of skilled labour domestically also makes it costly, thus increasing the cost of production, making domestically produced goods expensive in a low-income economy.

2.7 The emergence of civic order induced by industrialization.

Civic order can be termed as a series of related agreements between the individual, society and the state for the consolidation of societal framework. Industrialization works as catalyst in this process. Industrialization is what causes rapid, displacement of masses and urban development in many aspects. The growth of an urban population along with slight improvement in living standards on an economic level has to be achieved in order to institutionalize the new social relationships formed by rapid industrialization. During the initial stages of industrialization in Britain, the inflow of large numbers of rural population in the urban centres created a lot of problems because of the unsupervised and unsystematic approach to the whole scenario. The newly arrived, rural population had to go through a lot of oppressive situations and discriminatory policies. Legislations like the Poor laws and other related policies along with correctional houses were brought in to control and organise the worker population which often took a dire turn (*Quadagno, 1984*). Though the condition of the majority of workers was primarily grotesque in the initial phases of the Industrial Revolution, it got better with time as the society progressed. The emergence of a professional police force can also be credited to the phase of industrial development. The necessity to manage a large demographic in an organised manner, in a place with societal conflicts and asymmetry of resource consumption led to the inception of the idea of an organised police force (*Koyama, 2012*). Similarly, the need for public schooling also emerged from this context for organising the society in a better way, and creating skilled individuals to be used in the larger economic machinery (*Carl, 2009*). These social dynamics led to the formation of social order that was formed for supporting the functioning of a larger social machinery. The effects of which can be observed today by analysing the differences between industrialized and non-industrialized societies. The way people act in social settings has a wide contrast from maintaining queues to following public protocol.

2.8 Industrialization as a Societal Architect

Beyond the factory gates, industrialization serves as a silent architect of social order. Historically, the transition from rural feudalism to urban industrialism necessitated a new kind of human being, one who is disciplined, punctual, and cognizant of public protocols. Michel Foucault famously described the factory and the school as "panoptic" institutions designed to create an orderly society through a system of surveillance and corrective discipline (*Foucault, 1975*). While Foucault viewed this as a mechanism of institutional power, it is also the foundation of modern civic sense.

This transition reflects what Émile Durkheim called the shift from "mechanical solidarity" (based on similarity in agrarian societies) to "organic solidarity" (based on interdependence in industrial societies) (*Durkheim, 1893*). As people become part of a complex manufacturing chain, they realize that their individual success depends on the collective adherence to rules. This is exemplified in the modern developmental state of Singapore, which utilized a combination of strict legal punishments and moral education to rapidly instil civic order (*Reynolds, 2017*). This "civic discipline" is not merely about avoiding fines; it is about the evolution of the social contract where individuals, society, and the state agree on a set of institutional rules that reduce transaction costs and foster long-term stability (*North, 1990*).

3. Strategic Policy Recommendations for Nepal

- i. Prioritize Comparative Advantage: Nepal should focus on labour-intensive manufacturing sectors that can absorb the current agricultural labour surplus before attempting to jump into high-tech sectors.
- ii. Institutionalize TVET: Create a national framework for vocational excellence that mirrors the Chinese tiered model, ensuring technical skills are integrated into the formal education hierarchy (Min & Zhu, 2019).
- iii. Reform the Social Contract: Leverage the industrialization process to strengthen public institutions like schooling and policing, which naturally foster the discipline required for a modern economy (Carl, 2009; Koyama, 2012).
- iv. Incentivize Domestic Talent: Develop policies that make local industrial technical roles more financially and socially attractive than unskilled foreign labour.

4. Conclusion

Nepal is still largely an agrarian nation with majority of the population engaged in agriculture. The agriculture sector contributes to around one-third of the nation's GDP and provides employment for the two-thirds of the population. The agricultural sector has been a major contributor in national growth in terms of economy, but to expand the economic possibilities of the country, small shifts towards being an industrial economy is a must. The amount of value creation and systematic development of the market that happens in a manufacturing-based economy cannot be achieved through other sectors. Focusing on production, one of its major factors has to be given prime importance that is labour. The need for skilled labour is high, at this point in the country. Human development should be the main concern for the Nepalese state and the market in general for improving its scope of sustenance and expansion. A leap to a service-based industry through the acceptance of information technology and other technological means should be done parallelly with the development of industrial infrastructure, as the social impacts of industrial development create a new social order.

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