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Industrial Development and Social Toxins: A Review Article

Wasfi Dhahir Abid Ali
Department of basic sciences College of nursing -university of Iraq –Ph.D. in physiology

Email: Wasfi.Abidali@uobasrah.edu.iq

Abstract. The Industrial Revolution brought about changes in society in many areas, economic and social, including ways of living, where industrialization dominated manual craft manufacturing, which changed the ways of living. Modern history is the process of transformation in the economy, and this change had positive and negative consequences. Some benefits of this revolution include faster rates of economic growth, lower costs, better quality, and more services for people. On the other hand, there are drawbacks, such as fewer job prospects and the potential for the gap between the rich and the poor to expand

Highlights:

1. Industrialization replaced manual labor, transforming society and ways of living.
2. Benefits: economic growth, lower costs, better quality, increased services.
3. Drawbacks: job loss, widened wealth gap, social inequalities.

Keywords: Industrial Development, Social Toxins, Review.

Introduction

Researchers have focused a lot of work on examining the risk of industrial air pollution in particular. Most research has demonstrated that the placement of industrial facilities [1-3]. Both poor and minority populations are disproportionately impacted by the pollution from industrial operations [4, 5]. However, a lot of this research has been cross-sectional, and given the widespread decrease in the quantity and toxicity of air pollutants, there is a good chance that the results would change if a different period were selected. These decreases can be linked to the growing concern and awareness of the dangers industrial pollutants represent to human health during the last few decades. Environmental laws have become more stringent as a result of this worry [6]. Furthermore, the quantity of manufacturing has drastically decreased during this time due to macroeconomic trends like deindustrialization [7].

For instance, grouped people linked to various residential paths into and out of polluted neighborhoods between 1991 and 2007 using latent class growth analysis. Pais and colleagues' research suggests that immobile individuals, were likely exposed to higher levels of air pollutants from the Toxic Release Inventory (TRI). Nonetheless, the

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researchers discovered that people's exposure to industrial pollutants has generally decreased over time. Although they acknowledge that this finding "may also result from a general historical decline in reported TRI releases," they speculate that this decline may be the consequence of people's overall higher mobility. [8].

Examined how people moved into and out of contaminated locations using longitudinal, individual-level mobility data. Crucially, they discovered evidence to support the theory that African Americans may be more or less likely to relocate to and remain in more polluted locations, which could account for part of the disparity in pollution exposure that they face [9]. Ozone, however, rose in counties with higher white population proportions and decreased in counties with higher Hispanic population proportions. Additionally, they discovered a growing positive correlation over time between particulate matter and the proportion of African Americans and Hispanics. According to the authors' theory. Stricter regulations, shifting demographics, and variances in the overall drops in air pollution could all account for these contradictory findings [10].

It is evident that during the past few decades, There has been a steady decrease in industrial air pollution nationwide. Emissions of the six criterion air pollutants specified by the Clean Air Act fell by 62% between 1980 and 2013, according to EPA estimates [11]. Approximately 40% of US industrial jobs were lost between 1980 and 2009 [12]. Central cities experienced a disproportionate amount of deindustrialization. Thus, it makes sense that these areas—and consequently their citizens—have profited more from these decreases. [13]. Resulting in the theory that the racial exposure gap will be closing as industrial activity in these areas decreases [14]. This research fills the knowledge gap that the idea has not yet been tested nationally [15] with the expanding middle class of Black people [16]. Between 1990 and 2000, the Hispanic population grew by 50%, and between 2000 and 2010, it increased by 43% [17]. Additionally, the black middle class has significantly expanded [18].

Background

Exposure to industrial pollutants has been the subject of a large portion of the study on environmental inequality. Three complimentary groups of ideas have been

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identified to explain these environmental disparities: racial discrimination, sociopolitical, and rational choice theories [19].

The foundation of rational choice theories is the idea that perceived self-interest can account for individual action. According to this argument, it would make financial sense for industry players to set up polluting facilities in places with lower land values, which are frequently in low-income and predominantly minority communities [3]. Additionally, it would make financial sense for people who can afford it to relocate away from these places, concentrating disadvantage in the vicinity. There have been conflicting findings when evaluating the rational choice paradigm. According to several researchers, localities with greater proportions of low-income and minority people were the locations of polluting facilities [20]. Others, however, found no proof of unequal siting [21, 22]. According to certain research, after visiting polluting industries, the percentage of minority people in the surrounding areas rose [23, 24].

According to sociopolitical views, businesses will choose the location with the least amount of economic and political opposition. This thesis is based on the notion that because to their economic and political vulnerability, minorities and low-income citizens are more likely to successfully reject siting proposals since they represent the path of least resistance. Empirical studies have validated this notion. The study offers one of the oldest examples [25], who looked into the decisions made about the expansion of 84 commercial hazardous waste plants and discovered that all of the nearby zip codes had characteristics associated with disadvantaged groups (e.g., proportion of renters and voting turnout).

The third set of concepts is based on the assumption that racial prejudice, which can be separated into institutional and overt forms, explains disproportionate exposure to environmental risk. Minority communities are intentionally targeted for environmental hazards, claims the overt discrimination perspective. Due to racial superiority views and/or a desire to shield white people from environmental problems. According to Pulido (2000), It is difficult to examine the evidence for ideas of overt discrimination since previous court decisions require proof of an industry's intention to discriminate racially [26]. Zoning is one of the few studies that specifically identifies this type of institutional discrimination. According to Maantay's 2001 [27] long-term investigation into New York City's industrial zoning, rezoning for industrial uses is more common in less affluent and

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more racially minority districts. Overall, these investigations provide credence to the institutional discrimination concept.

According to study [28], institutions are intricate, multifaceted aspects of social existence. Recognizing the institution in question should be the first step in any inquiry into institutional prejudice to reasonably attempt to find a metric that best represents the effect. The word "institution" is frequently used by modern sociologists to describe intricate social structures.

During the growth of production and industry during the Industrial Revolution, many toxic greenhouse gases were produced into the air and the biological environment, which directly led to a significant and rapid increase in the temperature of the Earth over a short period. Given the previous values of temperature rates, it has been observed since 1880 AD that the annual temperature is rising from 0.6 degrees to 14.4 degrees Celsius annually, and this is the fastest rate of temperature increase [29]. The rate of use of coal increased during the Industrial Revolution. In 1750 AD, Britain's production was 5.2 million tons of coal annually, and by 1850 AD, production reached 62.5 million tons annually, which constitutes ten times more than it was in 1750 [30].

Social toxins

Fossil fuels were used as the primary source of energy during the Industrial Revolution, including coal, oil, and natural gas. Although this type of energy source is archaeological and has a natural source, burning this fuel releases both energy and pollutants into the environment [31].

Chronic cases of adversity stemming from societal injustices that impede normal growth are known as social poisons. Toxins are compounds that are hazardous to humans and produced by plants and animals. Toxins can also include some drugs that are helpful at small doses but harmful at large ones. Most poisons that are harmful to humans are made by bacteria and other microbes. For instance, cholera bacteria produce a toxin that causes the disease's symptoms. Metals like lead and other chemicals found in the environment are examples of additional poisons that might cause issues [32, 33].

Air Pollution

The air is polluted with a group of chemical or biological pollutants [34]. Gases are considered among the most common pollutants of the air, such as ozone, nitrogen

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oxides, sulfur dioxide, carbon monoxide, ammonia, methane, soot, and lead [35]. They are considered chemical pollutants, but biological pollutants that cause many diseases, allergies, and even death and extend damage to animals, crops, and the environment in general [36-40].

Industrial activity, which depends on its products, metals, plastics, pesticides, and new persistent organic industrial waste products, increases the cause of the creation of water [41-46]. As well as changing the degree of nutrition, hypoxia, hypoxia, temperature increase, use, and/or salinity changes [47-52].

Water pollution

Several studies in 2022 found that pharmaceutical pollution of the world's waterways is a threat to human health and the environment. At 1,052 sampling sites along 258 rivers in 104 countries, it looked at the exposure of 470 million people to river pollution [53-58]. It found that "the most polluted sites were in low- and middle-income countries and were associated with areas with poor wastewater, waste management, and pharmaceutical manufacturing infrastructure" and listed the most frequently detected pharmaceuticals [59-62].

Solid waste and plastics

Water pollution is a result of microplastics' strong environmental persistence, especially in aquatic and marine environments. Clothing made of polyester, acrylic, or nylon contributes 35% of all ocean microplastics, mostly as a result of deterioration after washing [63-65].

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