Health & Life Science in Human Life Span

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Abstract

After World War II, the population experienced significant growth. The baby-boom of the 1950s and 1960s pushed the population to new heights, and the average life expectancy on Earth increased from over 60 to nearly 75 years. However, since 2000, and over the past 20 years, the rate of increase in the world's average life expectancy has slowed down. Some may attribute this to the epidemic, but from a different perspective, the slowdown in growth—assuming human life expectancy can reach 120 years or more—suggests the development of resistance factors. These are likely closely related to Medi, health, lifestyle, and the surrounding environment. This article aims to provide an alternative explanation for whether human life expectancy can continue to grow, viewed through the lens of Health & Life Science. Additionally, using regression models, this article will analyze future trends in human life expectancy and identify its critical turning points.

Key words: Health, Life Science, Human Life, Life Span, Critical Turning Points, Critical points.

Literature Review:

A review of Health & Life Science in Human Life Span highlights the difference between lifespan—the total years lived—and healthspan—the years spent in good health. Over the past seventy years, global lifespan increased from 47 to 73 years, but healthspan lagged behind, creating a 9 to 12-year gap worldwide. Many people live longer but face chronic illnesses and disabilities, especially noncommunicable diseases. (Armin Garmany et al., 2024). Research indicates that women generally experience a larger gap between healthspan and lifespan than men, especially in countries with high disease rates like the US. Lifestyle factors—such as diet, physical activity, and mental engagement—are crucial in determining healthspan, along with social and environmental influences. Using indicators like Healthy Life Expectancy (HALE) offers a broader view of population health, capturing more than just lifespan. (Deepak Jugran, 2025). The growing disparity presents significant challenges for healthcare systems, emphasizing the need to go beyond simply extending lifespan. Instead, efforts should focus on compressing morbidity—for example, by delaying the start of chronic diseases and enhancing quality of life among aging populations. Future innovations should adopt this approach. (Armin Garmany et al., 2021).

Methodology:

This thesis relies on a scholarly review of peer-reviewed studies from databases such as PubMed, Scopus, and Nature Health, focusing on cohort studies, case-control studies, and meta-analyses published between 2000 and 2025. Based on these supporting data and results, this research paper can incorporate the future population growth assumption into our regression projection model, enabling us to project the future human lifespan and further backup our research study.

Introduction:

Although the scientific community has concluded that more people will live to be over 100 years old, this article's prediction model suggests that once the peak of life expectancy is reached, most people's ages will stabilize, and only a few will surpass 80 or even 100 years. By 2030, many might reach 100 or more. However, our model indicates that 90 to 100 years old is the critical point most people can reach.

However, due to some reasons or circumstances, the life expectancy of the population will stagnate, and the so-called polarization phenomenon will occur, that is, many people are over 100 or even 120 years old, but many people cannot break through the first critical point of life expectancy. This may include changes in population structure, and the saturation point of the population growth.

Discussion:

Life expectancy: A polarized trend

Some scientists have proposed that human lifespan could reach 120 years, or even longer. This is based on the analysis of the currently known biological regression model, which shows that the lifespan could be as high as 128 years. Some scientists (Gary L.Pierce, 2022) have inferred that under certain conditions, human lifespan could be 130 years. This inference may be correct or incorrect, depending on whether it is technologically reachable or not. In this research article, we predict that the human life span could be 500 years or even longer. But in the case that there may be the certain constraint that might led the drag behind. Such as, the resource allocation, the food supply and the surrounding environment factor, that may show case the reverse trend that might hinder the situation of the human life span. Alithought, there hv the downturn matter, there still might have the chance to Extend the human life span. We believed

that, in reference to the turtle's life span, that means age from humans will be substantially increased due to medical and technological breakthroughs, in addition, this article believes that instead of the breakthrough in medical technology, what is more important may be the choice of selection. For example, the ability to access the best medical care may be a privilege reserved for the privileged class, rather than being available to ordinary people. Environmental factors, force majeure factors, natural disasters, etc. may also have the opportunity to affect human life expectancy.

So, we purposes that, the first law of life expectancy is that everything will turn into its opposite when it reaches its extreme.

This article utilizes a regression model to conclude that the average human lifespan could reach 200 years or even longer. This is based on a model developed using the longest-lived four-legged creatures on Earth (Turtle). One reason for this increase is the advancement of medical technology and breakthroughs in medical technology, which are contributing to the extension of human lifespan. A second reason is the increasing awareness of health, which is leading to a general increase in human lifespan.

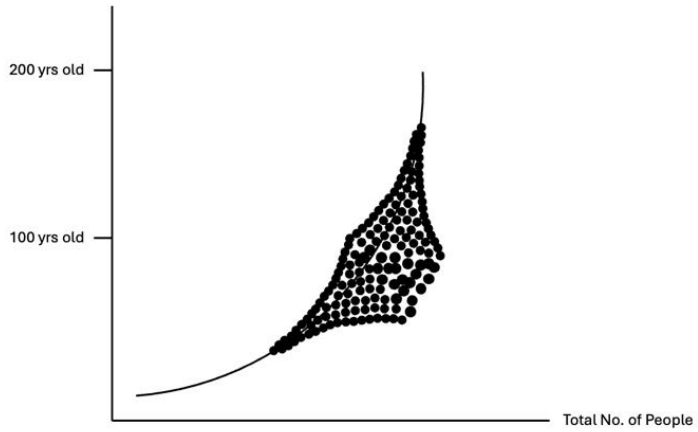

Figure 1: Model of Regression in Population Life Span Projection

Although human lifespan can be extended under certain conditions, this article believes that this is only a relative concept, not an absolute one. The reasons are as follows:

First, we need to understand the concept of extremes. Human desires and behaviors often backfire, leading to misadventure outcomes. Therefore, this article argues that the first law of life is that extremes often lead to their own opposites.

This means that, initially, it is essential to understand the concept of extremes in human behavior and decision-making processes. Although the intention may be good, there can be negative consequences, sometimes leading to premature death or other adverse outcomes. Therefore, this discussion suggests that a fundamental principle of life is that extremes tend to produce their opposite, aligning with the broader understanding of balance and moderation in both philosophical and scientific contexts.

The First Law of Life: Everything Goes to Its Extremes

So, this research article proposed the innovative idea concept “First Law of Life”, which posits that every phenomenon or entity tends to progress toward its maximum or minimum potential, reaching an ultimate state of extremity. This principle underscores the inevitable trajectory of growth in the medical technology advancement or transformation inherent in all aspects of existence, emphasizing that extremes often represent critical points of change, culmination, or culmination of inherent tendencies.

It is a critical point in the human lifespan and may depend on whether the planet's resources can sustain the population. In our model, we assume that when the human population reaches 10 billion, a critical point will occur, potentially leading to disaster with overwhelming consequences. For instance, the resource allocation can't fulfill the population growth, and the infant war that may break out during the starvation.

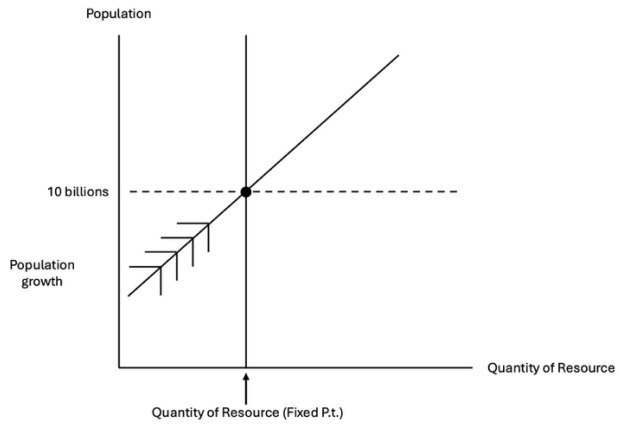

Figure 2: Model of Population Critical Point

This assumption is based on the idea that Earth's natural resources are limited, and a significant population increase could push it to a point where it can no longer support life. This could lead to serious problems in securing food and resources.

This assumption is grounded in the principle that Earth's natural resources are inherently finite and exhaustible. An exponential increase in human population could accelerate resource depletion beyond the planet's regenerative capacity, thereby jeopardizing the sustainability of essential ecosystems. Such a scenario might lead to severe economic and social challenges, including shortages in food, water, and other critical resources. These issues could significantly hinder socioeconomic stability and undermine the capacity to meet the basic needs of the global population.

Buy time Out (In Medi service selection)

Conclusively, there may be a situation where people prolong their lives by buying time, and although there is universal medical care, only the rich have the opportunity to get better medical care.

Some individuals may attempt to extend their lifespan by purchasing additional time, which highlights a socio-economic disparity in healthcare access. Although universal healthcare coverage exists, it often fails to provide equitable quality of medical services across different income groups. Consequently, wealthier individuals are more likely to benefit from advanced medical interventions, state-of-the-art treatments, and specialist care, thereby increasing the gap in health outcomes between the affluent and the economically disadvantaged.

When there is significant socio-economic disparities inherent within healthcare systems, the shortage will tend to follow, due to lack of resources. Although the existence of healthcare coverage aims to provide baseline medical services for all citizens, in practice, it frequently falls short of delivering equitable quality of care across different income strata. This discrepancy often results in wealthier individuals having greater access to cutting-edge medical interventions with professional care, which, in turn, amplifies the health outcome gap between the socio-economic elites and more economically disadvantaged populations. Such differences are indicative of structural inequalities that are reinforced by economic power and influence, underlining the critical need for policy reforms that prioritize equitable resource distribution and universal access to high-quality healthcare services.

Medi-Growth-out effect

Growth-out effect in medical service selection occurs when there is overpopulation. The “Medi-crowding out effect” describes a situation where an increase in population reduces the availability of medical services, even if total Medi spending remains constant. Additionally, advanced Medi will run into target the wealthy class to provide extra Medi services.

This research article predicts that the overgrowth of the population may develop a growth-out effect in medical service selection, revealing its significance in influencing patient choices and healthcare outcomes. This phenomenon will affect the choice of importance in understanding how various factors, such as selection policies, perceived service quality, and informational availability, due to the socio-economics status, in other words, influence decision-making processes within the healthcare industry will include the choice of selection and the wealth of the people. These elements can influence the medical selection approaches that will lead to medical service provision, ultimately changing the life of the patient and optimizing resource allocation to the human life span.

Conclusion:

In conclusion, population lifespan is determined by a complex interplay of biological, lifestyle, socio-economic, and environmental factors. A multidisciplinary approach that addresses these elements can inform public health policies to boost life expectancy and reduce disparities. As our understanding deepens, it is crucial to promote policies that foster healthy environments, ensure equitable access to healthcare, and strengthen community support. Through collaborative efforts across health and sciences, we can work towards a future where longer, healthier lives are achievable for mankind. This research article hopes to benefit the world's citizens and mankind.

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