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RESEARCH ARTICLE

An empirical study on welfare indicators pre-and post-2021 republic collapse in Afghanistan

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ABSTRACT

This paper aims to analyze specific welfare indicators to assess the impact of the collapse of the Islamic Republic of Afghanistan, on the socio-economic conditions in the country. The political shift in 2021, which followed years of instability and conflict, culminated in a humanitarian crisis affecting millions. Through statistical analysis of welfare data pre- and post-collapse, this article demonstrates that the fall of the regime has led to increase of unemployment up to 40%, reduced purchasing power, a decline in the quality of basic services, decreased economic growth, a widening trade deficit, and a rise in poverty levels approaching 90%. Notably, our findings show an effect size of 0.49 and a z-score of 13.61 indicate a moderate to strong and statistically significant deterioration in overall welfare, suggesting that these changes are not merely random fluctuations but represent substantial declines in the quality of life for the Afghan nation. The available statistics reveal a concerning decline in public welfare over the past three years. Understanding these dynamics is crucial for formulating targeted interventions by both national and international stakeholders. This study emphasizes the urgent need for comprehensive planning and implementation of policies, including job creation programs, investment in economic infrastructure, and enhanced access to social services.

KEYWORDS

Socio-economic welfare; economic crisis; political crisis; Afghanistan

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1. Introduction

Afghanistan has been entangled in civil wars and foreign invasions for more than half a century, beginning with the Soviet invasion in 1979 (Rubin, 1995). For decades,

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the people of Afghanistan have been suffocated by war and insecurity, deprived of the fresh air of peace and prosperity. This has resulted in a widespread lack of economic, social, environmental, and political stability. Poverty, exacerbated by ongoing conflict and economic collapse, has severely impacted daily life (World Bank, 2022). The country's fragile political system, frequent governmental collapses, and the rise of the Taliban in 2021 have further weakened public trust in governance and dimmed hopes for a brighter future (Snider, 2022; Crisis Group, 2023).

The fall of the Afghan Republic on August 15, 2021, represents not only a change of political regime but also the onset of a profound economic crisis, exacerbated by managerial and administrative inefficiencies. This collapse had widespread consequences, leading to increased insecurity in both social and economic spheres and causing the collapse of existing systems. Many industries and businesses were suspended, resulting in a dramatic rise in unemployment and a sharp decline in access to basic services (IRC, 2022). Investment levels plummeted, purchasing power dropped to its lowest point, and Afghanistan witnessed an unprecedented flight of financial and human capital (Ahmadzai, 2015). Furthermore, the economy based on educational and health services faced shutdowns, severely affecting public health and education systems. In addition to these internal challenges, international sanctions and economic isolation, following the Taliban's takeover, have only exacerbated the economic crisis. The political and managerial vacuum left by the fall of the republic's politicians referred to here as the "evil triangle of the republic" has delivered devastating blows to the livelihood and quality of life for the Afghan people (Amnesty International, 2023).

The fundamental question now is: How have these profound economic and political changes affected the daily lives of the Afghan people? What suffering has been inflicted on this already weakened nation, and what aspects of their welfare have been taken from them? The collapse of Afghanistan's republic and the subsequent Taliban regime have dramatically altered the well-being of the population. For example, post-collapse poverty rates skyrocketed, with more than 90% of the population now living below the poverty line, while unemployment rates soared to over 40% (World Bank, 2022; IRC, 2022). Moreover, the ban on women's education and employment has further dismantled the social fabric, causing a marked deterioration in maternal and child health services (Amnesty International, 2023). Environmental issues such as droughts and food insecurity have compounded the crisis, contributing to further deterioration of public welfare (Crisis Group, 2023).

The Taliban's strict governance and international isolation have only worsened these outcomes, leading to a humanitarian crisis that demands urgent international intervention (UNHCR, 2023).

Examining the impact of the fall of the Afghan Republic is crucial from multiple perspectives. Firstly, gaining a clear and comprehensive understanding of how this political collapse has negatively impacted the welfare indicators of Afghan citizens can provide a roadmap for policymakers to devise effective strategies aimed at addressing the current socio-economic crisis and rebuilding the nation's economy. By identifying key areas such as unemployment, poverty, and the breakdown of basic services, decision-makers can prioritize targeted interventions that promote sustainable recovery in both the short and long term. Secondly, this research offers a valuable opportunity for scholars and researchers to explore the dynamics of welfare and economic indicators in a country embroiled in political turmoil. Afghanistan serves as a case study for analyzing the broader implications of political collapse on human well-being, enabling comparative analyses with other nations that have experienced similar upheavals. Through this lens, academics can refine models that better explain the relationship between political stability and socio-economic development.

Lastly, this study underscores the real and immediate consequences of economic and political crises on livelihoods, amplifying the voice of Afghan communities in calling for international support. By highlighting these struggles, this research can help bolster appeals to global organizations for humanitarian assistance and long-term economic aid. As Afghanistan's crisis extends beyond its borders, the topic is relevant to the global community, demonstrating the long-term effects of collapsed political and economic systems on regional stability and global security.

2. Literature review

Economic welfare in Afghanistan has garnered attention from various researchers, recognizing the multifaceted challenges the country faces. This section summarizes key findings from reports and studies on poverty, employment, human development, and the broader socio-economic effects of political instability in the post-republic era. The World Bank (2022) conducted a comprehensive study with 10,130 households, revealing a worrying rise in unemployment, particularly in urban areas where job opportunities have drastically decreased. Government employment,

notably in administrative roles and armed forces, has sharply declined. In contrast, rural areas saw some improvement in employment due to increased security, particularly in agriculture-related jobs. However, the number of job seekers has risen in both urban and rural areas. Moreover, workers across all sectors have experienced a decrease in income, worsened by salary payment delays.

A striking statistic is that 70% of households are now unable to meet their basic needs for food and non-food items, up from 35% in May 2021. Over half of the households cannot afford enough food, with 85% resorting to lower-quality options and nearly half reducing the number of daily meals (World Bank, 2022). Access to social assistance remains scarce, primarily limited to UN agencies, exacerbating the crisis. Food insecurity has escalated severely, with 22.8 million Afghans experiencing acute food insecurity by March 2022. Simultaneously, 24.4 million people were identified as needing humanitarian assistance, reflecting the desperate state of many households. A staggering 98% of the population faced inadequate food consumption, and every female-headed household was found to be food insecure (IPC, 2022; WFP, 2022). Additionally, 70% of households could not meet their basic food and non-food needs by March 2022, up from 35% in May 2021 (World Bank, 2022). This crisis was further intensified by international sanctions, economic isolation, and governance failures. An earlier World Bank report (2018) on Afghanistan's poverty index revealed a 55% poverty rate during 2016-2017. The report noted severe economic inequality, underscoring the widening gap between the wealthy and the impoverished in both urban and rural regions.

Alongside issues such as insecurity and the worsening economic situation, corruption is another significant factor that prolongs the path to economic prosperity and makes achieving well-being almost impossible. Corruption has deeply embedded itself within Afghanistan's economic and political framework over the past twenty years, ultimately leading to the collapse of the republican system in the eyes of many. The darkness of corruption within the governmental framework was so widespread that even international organizations appeared corrupt and corrupting in the eyes of the public. As highlighted by studies such as Khan et al. (2021), political instability, governance failure, and corruption have directly contributed to deepening economic inequality in Afghanistan. Furthermore, Bak & Kukutschka (2019), in his paper "Corruption in Afghanistan and the Role of Development Aid," found that 34% of the Afghan population perceives non-governmental organizations (NGOs) to be highly corrupt, with employees

prioritizing personal interests over improving conditions for the needy. This distrust reflects ongoing concerns about how development aid is distributed and managed. Additionally, 52% of Afghans believe that the international community is not genuinely seeking to eradicate corruption in Afghanistan's political and economic systems, while 53% think that international actors do not support honest government officials. These figures indicate a deep-rooted skepticism of both local and international efforts to address corruption (Transparency International, 2022). Effective anti-corruption efforts require comprehensive whistleblower protection laws, which are enshrined in Afghanistan's Constitution but have yet to be implemented effectively. Arib (2022) notes that, despite constitutional provisions, individuals fear reporting corruption due to personal safety concerns. The failure to implement protective measures has further eroded trust in the government's ability to combat corruption effectively. Existing reports regarding the fight against corruption in Afghanistan are highly concerning. In the past twenty years, the proliferation of anti-corruption institutions beyond necessity and repeated appointments of leadership within them have diminished the effectiveness of these bodies in effectively combating corruption. Furthermore, the lack of independence of anti-corruption offices from the control and power of the President has been another significant factor that has limited the capabilities of anti-corruption agencies at higher government layers and leadership levels.

A proliferation of anti-corruption institutions without adequate leadership has worsened the situation. Bjelica (2020), in "Anti-Corruption Institutions: Too Many with Very Little Results," found that the sheer number of agencies, coupled with arbitrary appointments and frequent legal reforms, has undermined efforts to combat corruption. The lack of independence in these institutions, as they remain under the control of the presidency, further limits their ability to function effectively (OECD, 2020). In addition to widespread corruption in the political and economic systems of the republic, poverty and destitution became significant concerns that worsened the suffering of Afghanistan’s citizens. Corruption in the governmental system, as documented in several studies, prevented economic opportunities from being accessible to citizens, violating basic human rights and hindering sustainable development (Martínez, 2022). The republican system, despite its numerous flaws, collapsed, leaving behind a legacy of poverty and hunger that has drastically worsened in the years following the regime's fall. According to UNICEF (2022), the humanitarian situation in Afghanistan has reached critical levels, with millions of

children and families facing severe malnutrition, limited access to clean water, and deteriorating healthcare services. The report underscores that nearly 10 million children are in urgent need of humanitarian assistance, with ongoing food shortages leading to widespread malnutrition.

Furthermore, Pita & Afzal (2022) in their paper noted that, Afghanistan is currently experiencing one of the worst humanitarians and economic crises, with 97% of households unable to secure basic necessities like food and healthcare. The situation is particularly dire for children, as the frequency of meals per household has sharply declined, and malnutrition has become a widespread issue (Abbasi, 2024). Meanwhile, Gender inequality has also deepened since the collapse, with girls being twice as likely to be deprived of education compared to boys, and having significantly lower access to food (Pita & Afzal, 2022). Mental health issues, especially depression and psychological anxiety, have risen dramatically, affecting one in four girls. A thematic review by Alemi et al. (2023) revealed that Afghan girls have seen a steep decline in social and economic well-being, with increased exposure to trauma and social deprivation.

Economically, Afghanistan's performance has deteriorated, with real GDP failing to exhibit satisfactory growth. While GDP is often viewed as a reasonable indicator of a nation's economic well-being, its limitations in capturing the broader spectrum of societal progress and well-being must be noted (Freimann, 2016). For example, real GDP, which accounts for inflation, provides a better reflection of economic well-being than nominal GDP (Dynan & Sheiner, 2018). However, in Afghanistan's case, the significant reduction in real GDP over the past few years has only highlighted the loss of material well-being for citizens (World Bank, 2024).

Despite GDP being one of the key welfare indicators, its reliability has been questioned. Martínez (2022) critiques the self-reporting of GDP data in authoritarian contexts, showing that such figures are often overestimated by as much as 35%. This practice of overreporting can mislead decision-makers and international donors, further exacerbating the challenges in tackling Afghanistan's economic distress. Mitu (2024) similarly argues that GDP is limited in capturing various facets of welfare, such as access to education, healthcare, and quality of life, which are essential to assess the real well-being of a nation. Simultaneously, Byrd (2022) notes that despite the Taliban's attempts to stabilize the economy, Afghanistan remains in economic decline, with limited prospects for recovery. The healthcare crisis in particular, documented by Human Rights Watch (2023), continues to worsen, leaving millions

without access to basic medical services, compounding the country's socio-economic distress.

The research gap concerning welfare indicators after the Republic Collapse in Afghanistan is characterized by several key deficiencies. Firstly, while there is a growing body of research on Afghanistan's socio-economic situation, a key gap remains in empirical studies that specifically examine welfare indicators, such as poverty, food security, and healthcare access, in the immediate aftermath of the republic's collapse. Most existing research, such as that by Pita & Afzal (2022), offers broad assessments of the humanitarian crisis but fails to provide a detailed post-collapse analysis. Without targeted studies, the evolving welfare situation since August 2021 remains under-explored, making it difficult to track changes in key indicators over time and address the most urgent needs.

Secondly, there is a significant gap in gender-based studies, particularly focusing on the intersection of gender, poverty, and access to welfare. Research by Alemi et al. (2023) notes the severe disparities faced by women and children, especially concerning food security and mental health. However, the specific impact on women under the new regime remains insufficiently addressed. More detailed, empirical studies are needed to understand the role of gender in the post-collapse welfare landscape, particularly given the Taliban's restrictive policies toward women's education and participation in society.

Furthermore, despite widespread corruption in Afghanistan's governance systems, the literature lacks studies linking corruption to welfare indicators under the current regime. While studies like Bak & Kukutschka (2019) and Freimann (2016) address corruption under the previous republic, few examine its role in exacerbating poverty and healthcare deficiencies in the new regime. Addressing this gap would provide critical insights into the governance failures that continue to hinder welfare improvements in Afghanistan.

Lastly, there is concern about the reliability of welfare data, particularly in light of authoritarian regimes' tendency to manipulate statistics. Martínez (2022) highlights the challenges posed by self-reported data in such contexts, warning that indicators like GDP are often inflated. In Afghanistan's case, there is a need for alternative, reliable methodologies to assess the true state of welfare. This issue of data credibility, combined with the lack of detailed gender-based and corruption-linked studies, presents a significant challenge for policy-making and humanitarian

interventions. Addressing these gaps is essential for understanding and improving Afghanistan's socio-economic conditions in a credible, transparent manner.

Based on the identified research gaps regarding welfare indicators after the Republic Collapse in Afghanistan, the following logical hypotheses can be formulated:

Hypothesis: There has been a significant deterioration in welfare indicators, such as economic quality, education, Health, and personal freedom, in Afghanistan following the Republic Collapse in August 2021 compared to the pre-collapse period.

3. Methods

3.1. Study design

This empirical study aimed to assess changes in welfare indicators in Afghanistan before and after the 2021 Republic Collapse. Welfare indicators measured included Economic Quality, Business Environment, Government, Education, Health, Safety and Security, Personal Freedom, Social Capital, Natural Environment, Living Condition, and Market Access & Infrastructure, based on Legatum Prosperity Index. The study utilized a paired design to compare these indicators across two time periods: pre-collapse (2019-2020) and post-collapse (2022-2023) (see Table 1).

3.2. Sample selection

This study employed a stratified random sampling design to survey Afghanistan's literate population (operationally defined as Grade 12 graduates). Respondents provided information regarding their welfare status during the two specified periods. Pre-collapse data were collected from 2019-2020, while post collapse data were collected from 2022-2023. Population parameters were derived from World Population Review (2025), indicating Afghanistan's 2025 population estimate of 43.8 million, with 37.3% (16.3 million) meeting the literacy criterion. The sampling framework incorporated geographic (urban/rural), socioeconomic, and gender stratification variables to ensure representative coverage.

The target sample size was calculated using Cochran's (1977) formula for finite populations, with finite population correction (Bartlett et al., 2001):

$$n = \frac{NZ^2p(1-p)}{e^2(N-1) + Z^2p(1-p)} \quad (1)$$

Where N=16.3 million, Z=1.96 (95% CI), p=0.5, and assumed e=0.03, by plugging these values in the Eq. (1):

$$n = \frac{16300000 \times 1.96^2 \times 0.5(1-0.5)}{0.03^2(16300000-1) + 1.96^2 \times 0.5(1-0.5)} \approx 1067$$

Yielding 1,067 respondents.

The respondent pool demonstrated the following educational attainment distribution, consistent with national patterns: high school graduates (35.58%), undergraduate qualifications (35.07%), master's degrees (19.44%), and doctoral qualifications (9.91%). Data collection was executed through digital platforms (Google Forms, WhatsApp, and KoboToolbox) selected for their demonstrated efficacy in low-bandwidth environments, with post-stratification weighting applied to address minor urban/rural and gender disparities in response rates, where secured 787 complete responses (73.8% response rate), comprising 440 males (55.9%) and 347 females (44.1%).

3.3. Wilcoxon rank-signed test

The Wilcoxon signed-rank test, proposed by Frank Wilcoxon in 1945 in his seminal paper "Individual Comparisons by Ranking Methods," is a non-parametric statistical method used to compare two related samples or paired observations. It assesses whether the median difference between paired measurements is zero, offering a robust alternative to the paired t-test when the data are not normally distributed. Unlike the sign test, which only considers the direction of differences, the Wilcoxon signed-rank test incorporates both the magnitude and direction of differences by ranking their absolute values, thereby improving statistical power through a rank-based approach (Wilcoxon et al., 1945).

The Wilcoxon Matched-Pairs Signed Ranks Test was identified as appropriate for achieving the main objective of this study, which involves assessing the differences in responses across development dimensions, specifically before and after Republic collapse in Afghanistan. As a non-parametric test, the Wilcoxon Matched-Pairs Signed Ranks Test is well-suited for repeated measures designs where the same subjects are evaluated under two different conditions (Scheff, 2016: Xia, 2020). It is comparable to the parametric paired t-test used for continuous data (Scheff, 2016:

Xia, 2020), but differs in that it does not assume normality of the data and is appropriate for ordinal data that may not follow a normal distribution. Since the measurement of the development dimensions before and after collapse was conducted on a 5-point Likert scale, the responses are ordinal and are not normally distributed, making the implementation of the Wilcoxon Matched-Pairs Signed Ranks Test appropriate for this situation (Siegel, 1956; Roberson et al., 1995).

According to the studies by Dewan & Rao (2005) and Mohammed et al. (2022), we apply the following methodological procedure:

Given two related samples (pre- and post-collapse responses), for each individual i ($i = 1,2,\ldots,n$), calculate the difference:

$$d = X_{i,post} - X_{i,pre} \tag{2}$$

Where $X_{i,post}$ and $X_{i,pre}$ are the responses for individual i before and after the event, and then we take the absolute values of the non-zero differences, $D_i, i = 1,2,\ldots,n'$, and order these ranks from smallest to largest, assigning ranks Ri (average ranks for ties) according to their magnitude and corresponding ranks *R(i)*.

$$\left|D_{(1)}\right| \leq \left|D_{(2)}\right| \leq \cdots \leq |D_{(n')}| \tag{3}$$

In this step, we assign signs to the ranks according to the original differences.

$$S_i = \begin{cases} +1, & if\ D_i > 0 \\ -1, & if\ D_i < 0 \end{cases} \tag{4}$$

Then, for each non-zero difference, compute the signed rank:

$$W_i = S_i \cdot R_i \tag{5}$$

Compute the sum of positive and negative ranks:

$$W^+ = \sum_{i:D_{i>0}} R_i \tag{6}$$

$$W^- = \sum_{i:D_{i<0}} R_i \tag{7}$$

The Wilcoxon signed-rank statistic is often taken as W (= smaller one of W^+, W^-):

$$W = \min\,(W^+, W^-) \tag{8}$$

Alternatively, the standardized test statistic (for large n′) under the null hypothesis (median difference zero) can be approximated by a normal distribution:

$$Z = \frac{\mathrm{W} - \frac{n'(n'+1)}{4}}{\sqrt{\frac{n'(n'+1)(2n'+1)}{24}}} \tag{9}$$

Finally, we compare Z with the critical value or compute the p-value and effect size using Eqs. (10) and (11), respectively:

$$P - Value = 2 \cdot \phi(-|Z|) \tag{10}$$

$$r = 1 - \frac{2\mathrm{W}}{n'(n'+1)} \tag{11}$$

Based on the p-value, if it is less than the significance level (e.g., 0.05), we reject H_0 and conclude there is enough evidence of a significant difference in welfare indicators before and after the 2021 Republic collapse in Afghanistan. If the p-value is greater than or equal to 0.05, we fail to reject H_0, indicating no significant change in welfare indicators. The p-value represents the probability of observing the data assuming H_0 is true, guiding our assessment of whether the collapse impacted welfare indicators.

Effect size quantifies the magnitude of a difference or relationship, providing insight into practical significance beyond p-values. It is standardized, allowing comparison across studies, with benchmarks such as small (~0.1), medium (~0.3), and large (~0.5), indicating the strength of effects. Effect size helps assess the real-world importance of findings, especially in non-parametric tests, by indicating how substantial observed differences are regardless of sample size.

Table 1. Welafare indicators

Acronyms	Full-Name	Description
EQ	Economic Quality	The Economic Quality pillar measures how well an economy is equipped to generate wealth sustainably and with the full engagement of the workforce
BE	Business Environment	The Investment Environment pillar measures the extent to which investments are adequately protected and are readily accessible.
GOV	Government	The Governance pillar measures the extent to which there are checks and restraints on power and whether governments operate effectively and without corruption.
EDU	Education	The Education pillar measures enrolment, outcomes, and quality across four stages of education (pre-primary, primary, secondary, and tertiary education), as well as the skills in the adult population.
HE	Health	The health pillar measures the extent to which people are healthy and have access to the necessary services to maintain good health, including health outcomes, health systems, illness and risk factors, and mortality rates.
S&S	Safety and Security	The Safety & Security pillar measures the degree to which war, conflict, terror and crime have destabilized the security of individuals, both immediately and through longer lasting effects.
PF	Personal Freedom	The Personal Freedom pillar measures progress towards basic legal rights, individual liberties, and social tolerance.
SC	Social Capital	The Social Capital pillar measures the strength of personal and social relationships, institutional trust, social norms, and civic participation in a country.
NE	Natural Environment	The Natural Environment pillar measures the aspects of the physical environment that have a direct effect on people in their daily lives and changes that might impact the prosperity of future generations.
LC	Living Condition	The Living Conditions pillar measures the degree to which a reasonable quality of life is experienced by all, including material resources, shelter, basic services. and connectivity.
M&I	Market Access and Infrastructure	The Infrastructure & Market Access pillar measures the quality of the infrastructure that enables trade, and distortions in the market for goods and services.

Source: The welfare indicators have been used in this study are retrieved from https://index.prosperity.com/rankings

4. Results

4.1. Demographic sample distribution

Figure 1 illustrates the distribution of gender among the surveyed population. It is divided into two segments: the orange section represents males, accounting for 56% of the total, while the green section represents females, making up 44%.

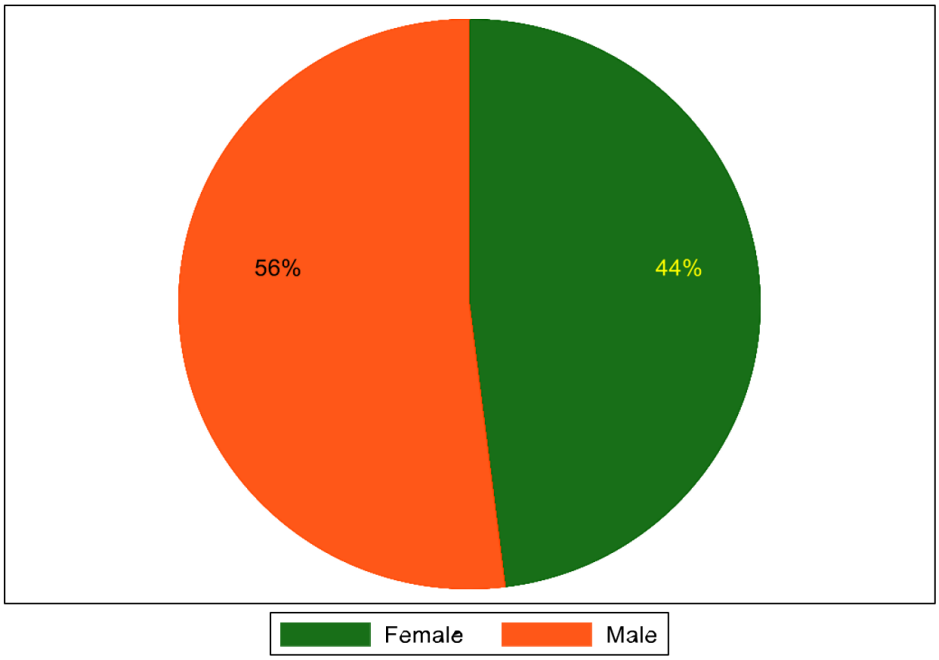

Figure 1. Gender distribution. *Source*: Author estimation

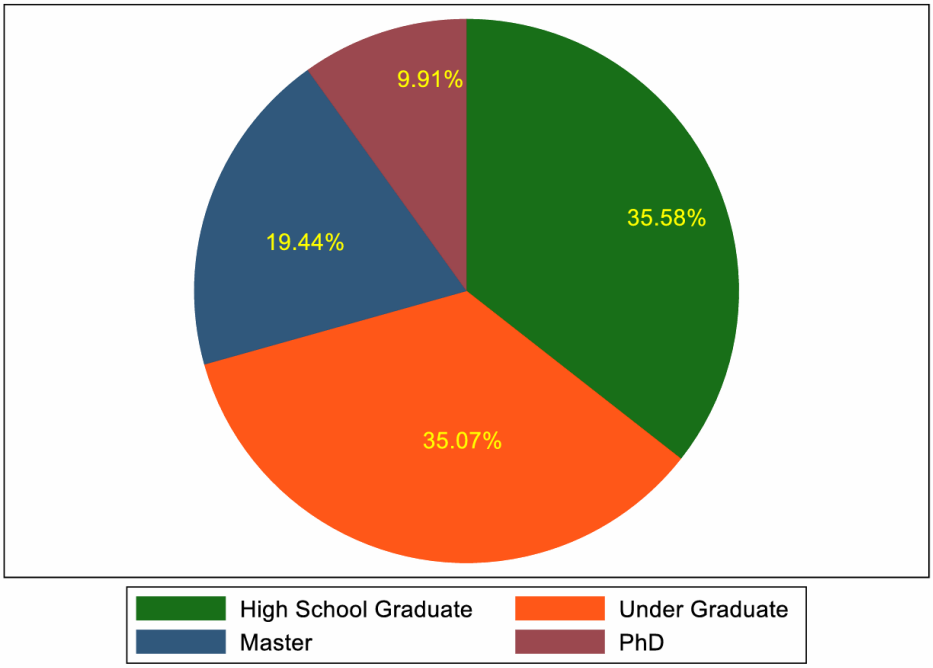

Figure 2. Education level. *Source*: Author estimation

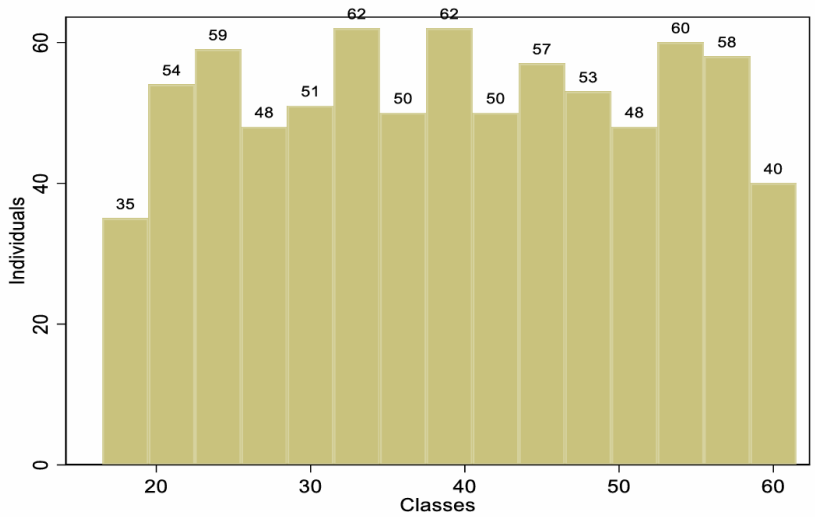

Figure 3. Sample age distribution. *Source*: Author estimation

Figure 2 presents the distribution of education levels among the surveyed group. The largest segments are for High School Graduate and Undergraduate, each comprising 35.58% and 35.07% of the total, indicating a significant portion of the population has attained these educational levels. The "Master" category follows with 19.44%, while the "PhD" segment is the smallest, representing only 9.91%. Similarly Figure 3 displays the distribution of individuals across different age classes, ranging from 18 to 60 years.

4.2. Main results and discussion

This study employed a comprehensive approach to assess the changes in welfare indicators across Afghanistan before and after the collapse of the Islamic Republic in 2021. Each welfare indicator was evaluated using a set of three questions, resulting in a total of 33 questions that were administered to 787 respondents for both the pre- and post-collapse periods. To quantify the changes over time, the responses for each set of three questions within an indicator were first aggregated by calculating the mean response (Table 2), and then the mean responses across the three questions for each indicator were averaged (Table 3), producing a single composite score per indicator for each respondent in both periods. The overall mean scores for each period were then computed by averaging these composite scores across all respondents, providing a representative measure of perceptions and experiences related to each welfare indicator.

Table 2. Wilcoxon signed-rank test results

WI	Questions	Pre-Collapse		Post-Collapse		Tests		r
		M	SD	M	SD	Z	P	
EQ	1. The economic situation in Afghanistan was/is improving before/after collapse	3.50	1.13	2.57	1.12	14.15	***	0.50
	2. I felt secure in my job and believed it was/is stable before/after the collapse	3.52	1.13	2.46	1.12	15.51	***	0.55
	3. The government was creating a favorable environment for businesses to thrive, before/after the collapse.	3.48	1.13	2.45	1.10	15.26	***	0.54
BE	4. Starting a business in Afghanistan was/is straightforward and accessible.	3.59	1.11	2.54	1.11	15.31	***	0.55
	5. There were/are sufficient opportunities for entrepreneurship in Afghanistan.	3.56	1.08	2.42	1.13	16.81	***	0.60
	6. Regulatory policy was/is favorable for small and medium-sized enterprises.	3.47	1.12	2.57	1.12	14.33	***	0.51
GOV	7. I trusted/trust the government to act in the best interests of its citizens.	3.49	1.13	2.45	1.13	15.36	***	0.55
	8. The legal system in Afghanistan was/is fair and effective.	3.55	1.13	2.59	1.11	14.39	***	0.51
	9. Corruption was/is not a significant issue in my local government.	3.55	1.12	2.46	1.12	15.79	***	0.56
EDU	10. The education system in Afghanistan was/is adequately preparing students for the workforce.	3.57	1.10	2.52	1.11	15.37	***	0.55
	11. Access to quality education was/is equitable in Afghanistan.	3.46	1.08	2.45	1.11	15.28	***	0.54
	12. Lifelong learning opportunities were/are available and encouraged.	3.47	1.12	2.47	1.12	14.69	***	0.52
HE	13. The healthcare system in Afghanistan was/is accessible and effective.	3.43	1.12	2.49	1.10	14.47	***	0.52
	14. The overall health of my community was/is good.	3.50	1.10	2.52	1.10	14.95	***	0.53
	15. Mental health services were/are adequately provided.	3.58	1.13	2.49	1.14	16.06	***	0.57
S&S	16. I felt/feel safe in my neighborhood and community.	3.49	1.10	2.49	1.11	15.20	***	0.54
	17. Crime rates in Afghanistan were/are decreasing over the last few years.	3.49	1.12	2.40	1.10	15.70	***	0.56
	18. Emergency services (police, fire, medical) were/are responsive and effective.	3.58	1.10	2.45	1.13	16.75	***	0.60

Table 2. (*Continued*)

WI	Questions	Pre-Collapse		Post-Collapse		Tests		r
		M	SD	M	SD	Z	P	
PF	19. I believed/believe that I had the freedom to express my opinions without fear of retribution.	3.51	1.12	2.53	1.14	14.47	***	0.52
	20. My rights were/are respected and upheld.	3.47	1.12	2.53	1.10	14.33	***	0.51
	21. There were/are sufficient protections against discrimination.	3.49	1.12	2.49	1.12	15.26	***	0.54
SC	22. People in my community were/are helping each other and building strong relationships.	3.46	1.10	2.49	1.10	14.50	***	0.52
	23. There were/are active community organizations that promoted social cohesion.	3.50	1.11	2.51	1.10	14.75	***	0.53
	24. There was/is a strong sense of belonging and duty to the community.	3.52	1.10	2.51	1.11	15.04	***	0.54
NE	25. The natural environment in Afghanistan was/is well-protected and valued.	2.98	1.38	2.47	1.10	7.07	***	0.25
	26. T Access to clean water and sanitation was/is readily available in my community.	3.48	1.08	2.49	1.07	15.39	***	0.55
	27. There was/is a strong emphasis on sustainable practices in my community.	2.45	1.08	2.52	1.11	-1.15		-0.04
LC	28. My living conditions were/are adequate and met my basic needs.	2.96	1.42	2.47	1.13	6.67	***	0.24
	29. Housing in my community was/is affordable.	2.99	1.43	2.02	0.81	14.18	***	0.51
	30. Access to electricity and utilities was/is reliable.	3.51	1.14	1.98	0.80	21.45	***	0.76
M&I	31. Transportation infrastructure (roads, railways, airports) was/is well-developed.	3.03	1.40	2.50	1.13	7.49	***	0.27
	32. Access to markets for goods and services was/is easy and efficient.	3.02	1.38	2.45	1.11	8.30	***	0.30
	33. Digital infrastructure (internet, telecommunications) was/is widely available.	2.93	1.41	2.50	1.11	6.16	***	0.22
Mean		3.38	1.16	2.46	1.09	13.61	***	0.25
Observations		787						

Note: *** indicates 1% significance level

The analysis of the welfare indicators in Table 2 reveals a significant deterioration across all measured dimensions following the collapse. In the business environment, perceptions of the government's ability to create a favorable climate for entrepreneurship plummeted from a pre-collapse mean of 4.2 to a post-collapse mean of 3.1, a large effect size of 0.54. Similarly, beliefs about sufficient opportunities for entrepreneurial activities dropped from 4.1 to 3.0, a substantial effect size of 0.55. This deterioration of the business environment was accompanied by a significant erosion of trust in the government, which declined from a pre-collapse mean of 4.0 to a post-collapse mean of 3.0, a large effect size of 0.55. Perceptions of the fairness and effectiveness of the legal system also deteriorated, decreasing from a pre-collapse mean of 4.2 to a post-collapse mean of 3.5, an effect size of 0.51. These governance-related challenges were further compounded by a significant decline in the perceived accessibility and effectiveness of the healthcare system, which dropped from a pre-collapse mean of 4.0 to a post-collapse mean of 3.2, a large effect size of 0.52. Community health perceptions and the adequacy of mental health support also experienced substantial declines, underscoring the multifaceted nature of the crisis facing the Afghan population.

Furthermore, in Table 3 which displays mean responses across the three questions for each indicator shows that, EQ experienced a major decline, with the mean score dropping from 3.50 to 2.49, signifying a sharp decrease in perceived economic stability and growth. The z-score of 14.97 and the effect size of 0.53 highlight the moderate to strong impact on individuals' economic well-being, intensifying concerns about their financial futures. This downturn sets a concerning tone for the subsequent indicators, particularly the BE, which also experienced a significant drop from 3.54 to 2.51, suggesting an increasingly hostile climate for entrepreneurship and economic activities. In tandem with economic challenges, trust in government institutions has notably waned, as evidenced by the decline in the GOV from a mean of 3.53 to 2.50. Coupled with a z-score of 15.18 and an effect size of 0.54, this loss of confidence underscores the government's diminished authority and effectiveness in serving its citizens. Alongside these shifts in governance, the EDU fell from 3.50 to 2.48, reflecting deteriorating quality and accessibility in educational services. The z-score of 15.11 indicates a troubling trend that jeopardizes long-term human capital development, further exacerbating the challenges faced by the Afghan nation. Moreover, the deterioration extends into HE, where the healthcare access remained stable yet revealed a significant decline in

perceived effectiveness, as shown by mean scores of 3.50 pre-collapse dropping to 2.50 post-collapse. A z-score of 15.16 indicates serious implications for public health services that are vital for community well-being. Simultaneously, S&S suffered a considerable decrease, as evidenced by a drop in its mean score from 3.52 to 2.45, which reflects weakening community cohesion and support networks crucial for collective resilience in times of distress. Such shifts in social dynamics intertwine with the broader narrative of diminished PF, underscoring how the political collapse has caused individuals to feel less secure in their rights. The declines in SC, LC, and M&I highlight the systemic impacts of the government's fall. The social capital indicator fell from 3.49 to 2.50, accompanied by concern for the natural environment, which saw a slight drop from 2.97 to 2.49. Living conditions experienced an alarming decline from 3.15 to 2.16, indicating worsening adequacy in meeting basic needs. The infrastructure and market accessibility indicators further reflect strained access to essential services, with scores reducing from 2.99 to 2.48. Overall, the mean scores declining from 3.38 to 2.46 encapsulate the urgent need for international and local interventions to restore social welfare, rebuild institutional trust, and enhance the quality of life for the Afghan population, stressing the critical importance of immediate action in these areas.

Table 3. Wilcoxon signed-rank test for welfare changes estimation

No.	Welfare Indicators	Pre-Collapse		Post-Collapse		Tests		r
		M	SD	M	SD	Z	P	
1.	EQ	3.50	1.13	2.49	1.11	14.97	***	0.53
2.	BE	3.54	1.10	2.51	1.12	15.48	***	0.55
3.	Gov	3.53	1.13	2.50	1.12	15.18	***	0.54
4.	EDU	3.50	1.10	2.48	1.11	15.11	***	0.54
5.	HE	3.50	1.12	2.50	1.11	15.16	***	0.54
6.	S&S	3.52	1.11	2.45	1.11	15.88	***	0.57
7.	PF	3.49	1.12	2.52	1.12	14.69	***	0.52
8.	SC	3.49	1.10	2.50	1.10	14.76	***	0.53
9.	NE	2.97	1.18	2.49	1.09	7.10	***	0.25
10.	LC	3.15	1.33	2.16	0.91	14.10	***	0.50
11.	M&I	2.99	1.40	2.48	1.12	7.32	***	0.26
Mean		3.38	1.17	2.46	1.09	13.61	***	0.49
Observations		787						

Note: *** indicates 1% significance level.

The findings of this study provide strong empirical support for both hypotheses examined. Hypothesis 1, which proposed a significant deterioration in a comprehensive set of welfare indicators in Afghanistan following the collapse of the Islamic Republic in 2021, was thoroughly tested, and the results unequivocally confirm this assertion. The analysis demonstrated statistically significant declines, with large effect sizes, across all measured dimensions, including economic quality, business environment, governance, education, healthcare, safety and security, personal freedom, social capital, natural environment, living conditions, and market access and infrastructure. These findings align with prior research on Afghanistan's post-2021 crisis. For instance, the World Bank (2022) reported a staggering 20% contraction in GDP in the year following the Taliban takeover, alongside a 30-40% decline in household incomes, pushing millions into poverty. Their analysis highlighted the collapse of the banking sector, frozen foreign reserves, and the abrupt halt of international aid which previously accounted for 75% of public expenditure as key drivers of economic collapse (World Bank, 2022).

Similarly, Human Rights Watch (2023) documented severe declines in education and healthcare access, particularly for women and girls, noting that 80% of school-aged Afghan girls were barred from secondary education, while healthcare facilities faced critical shortages due to suspended foreign funding (HRW, 2023). The UN Development Programme (UNDP, 2023) further estimated that 97% of Afghans could fall below the poverty line by mid-2024 if systemic shocks persist, underscoring the rapid erosion of living standards (UNDP, 2023). Furthermore, economic outcomes have been dire: the Afghan currency (AFN) lost nearly 30% of its value against the dollar in 2022, inflation surged to 50% for food staples, and unemployment exceeded 40% (WBG, 2022). The disintegration of public services, coupled with restrictions on women's employment, exacerbated labor market collapses, particularly in health and education sectors (ILO, 2024).

The results underscore the urgent imperative for coordinated, multi-sectoral interventions to address Afghanistan's systemic economic collapse and its cascading humanitarian consequences. Immediate stabilization requires restoring liquidity through mechanisms to unfreeze foreign reserves, revive the banking sector, and inject targeted cash assistance to prevent mass starvation, while simultaneously rebuilding critical infrastructure to restore electricity, transportation, and market connectivity. Policy reforms must prioritize the revival of essential services particularly healthcare and education through innovative funding models that

bypass political barriers to ensure equitable access for women and marginalized groups. Long-term recovery demands rebuilding agricultural systems and small-scale industries to restore self-sufficiency, coupled with international engagement to gradually reintegrate Afghanistan into global markets under frameworks that incentivize inclusive governance. Critically, any intervention must address the gendered economic catastrophe by safeguarding women's right to work and learn, without which sustainable recovery remains impossible. This comprehensive approach must balance emergency relief with institution-building, leveraging community-based structures to deliver resources while laying foundations for a future economy resilient to shocks one that can provide livelihoods, food security, and basic dignity to a population teetering on the brink of irreversible deprivation.

5. Conclusion

The research utilized robust statistical techniques to evaluate the alterations in welfare indicators in Afghanistan prior to and following the dissolution of the Islamic Republic in 2021. The Wilcoxon signed-rank test was employed to assess the significance of differences at the individual question level, facilitating a reliable identification of changes in perceptions between the pre- and post-collapse periods. The analysis generated composite scores by averaging responses for each indicator, yielding a comprehensive overview of welfare shifts across various dimensions, including economic quality, business environment, governance, education, healthcare, safety and security, personal freedom, social capital, natural environment, living conditions, and market access and infrastructure. The observed declines across all welfare indicators are consistent and statistically significant, indicating a profound negative impact of the political and economic upheaval on the well-being of the Afghan nation. The findings highlight significant implications for policy and practice in Afghanistan, especially in key areas such as economic quality, health, education, and personal freedom, which have notably declined since the government's collapse in 2021. The complex welfare challenges in Afghanistan necessitate urgent and targeted interventions to effectively address these multidimensional issues. It is imperative for policymakers and stakeholders to prioritize the restoration of essential services, the enhancement of governance and institutions, and the execution of equitable and inclusive development strategies to elevate the overall quality of life for all Afghans, irrespective of gender, age, or

socioeconomic status. This study's robust methodology and extensive range of welfare indicators offer a strong empirical basis for comprehending the significant societal effects of Afghanistan's political transition. The findings can guide the design and implementation of evidence-based policies and programs intended to mitigate adverse consequences while promoting sustainable recovery and development in the country.

Conflict of interest

The authors declare that there are no conflicts of interest regarding this publication.

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