



Impact of administrative state capacity determinants on sustainable healthcare

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ABSTRACT

Public administration implements government policies through prudent administrative practices and state capacity. Based on Asia's political and administrative proficiency and paradox, this study explores the administrative state capacity determinants—bureaucratic quality (BQ) and military in politics (MP)—and their interaction with sustainable public health quality (PHQ) in Asia from 2006 to 2020. With its focus on the scenario and Asian state administrative issues, Goal 04: Health and Well-being of Sustainable Development Goals has been the core aspect of state capacity and sustainable development. Applying the generalized method of moments (GMM) econometric estimation, the study finds that the high risk of poor BQ due to political pressures and policy inconsistency has significantly and negatively impacted PHQ in Asia. In contrast, by overtaking the administration, a high degree of MP and military dominance has been a progressive force for PHQ in Asia. The interaction of BQ and MP negatively affects the state's social development due to conflict of interest and shredding policy outcomes. This is the first study that deals with the nexus between sustainable development and administrative state capacity determinants of Asia's public sector. The paper finds that an effective and prudent administrative collaboration and expertise-sharing between the bureaucracy and the military accelerates sustainable healthcare in Asia. Furthermore, the study believes that a healthy institutional collaboration will help overcome the development loopholes in Asia, promote PHQ, and accelerate regional development.

1. Introduction

Public health quality (PHQ) is a pressing issue globally, and in the past couple of years, policy experts have been brainstorming to develop prudent policy and state capacity measures to achieve sustainable PHQ. The core aspect of public administration and services is prudent policy drafting and planning (state capacity dimension). Moreover, bureaucracy and public services are the two crucial aspects of public administration. The system management theory discusses the interaction between policy decision-making and public services, in which bureaucratic expertise and institutional practices are considered inputs in the system, and the delivery and quality of public services are considered the outputs. On the other hand, the public management theory deals with the nexus between public

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services and public policy in a more profound way.

Bureaucratic quality (BQ) significantly impacts decision-making and enhances policymakers' capabilities, state capacity, and institutional quality [1–3]. Many studies have empirically found that expert bureaucratic decision making contributes to adequate national resource allocation and effective utilization of human capital, as well as enhancing the bilateral relations of the state, which in turn promotes institutional quality and the quality of public services [4–7].

A poorly designed public policy misallocates resources and ultimately destroys national resources and public policy executions through inefficient governance practices. However, a competent government uses resource allocation with sound public policies to achieve its desired goals. Nonetheless, a well-designed public policy requires proper deployment of government resources. Competent governments can be democratic, bureaucratic, or authoritarian, depending on how they execute policy [8].

Developing Asian and Sub-Saharan African countries have struggled with state fragility and poor policymaking for decades. Asian economies have predominantly suffered from institutional fragility, inadequate bureaucratic expertise, internal and external conflicts, socioeconomic crisis, low resources, and military intervention in policy matters. These institutional and state determinants keep the state unstable and fragile. In developing countries, public services are affected by inefficient government practices, social pressures (especially demographic pressures), and political instability [9–11].

Considering the struggles of developing countries, the United Nations (UN) developed a charter of sustainable development goals to ensure a better economic system and institutional structure and maintain human and economic development. The Development Assistance Committee (DAC) of the Organization for Economic Cooperation and Development (OECD) supports developing countries in terms of UN-set goals. These 30 DAC member countries of the OECD discuss and support capacity development in developing countries, helping them achieve the sustainable development goals. In this regard, the Asian Development Bank, World Bank, and the UN Development Program are the watchdogs of the proceedings of the OECD.

Unfortunately, incompetent bureaucracy is significantly involved in most public economic activities. The public procurement sector has a high level of corruption with regard to public funding for health and educational improvement; as a result, the World Bank canceled its Baluchistan Primary Education project in Pakistan. This type of corruption directly affects the development of the economy. Scholars have found that the different methods governments use to achieve other goals cause certain drawbacks and are responsible for the high rate of corruption. Moreover, developing countries' governments have been seen to manipulate donations and public funds allocated for services [12]. According to Transparency International, corruption has increased among public institutions in developing countries, and people have difficulty accessing health care and necessary facilities [13,14].

The state needs military assistance to make public services more transparent and deliverable in developing countries and to make optimal use of the state's capacity to control demographic and socioeconomic crises and regional and external conflicts. This way, public institutions can provide the masses with quality services that ultimately gain state legitimacy and promote sustainable development. The military is a key institution in the practice of legislation as it protects a state's sovereignty and ensures that a government fulfills its responsibilities to its people. Discreet bureaucratic capability and military assistance reportedly lead an economy toward social and economic development, and the right decisions and adequate safety measures protect the public better [15]. Nevertheless, the presence of military power without state approval may not always yield positive results. Military participation in matters other than safeguarding policy reportedly has a negative impact on state vulnerability, harming civil-military relations and adversely affecting state authority [16].

This study analyzes the effects of military involvement and BQ on sustainable social development, as measured through public health service outcomes, by considering the classical theoretical aspect of state capacity and governance [17–20] state capacity and healthcare [21], new public management in healthcare, and study directions of state capacity and health outcomes [22]. There have been studies conducted on the nexus between BQ and economic and sustainable development. However, the nexus between sustainable development and the combined effect of bureaucratic-military interaction on public service delivery are rarely discussed in the literature, especially regarding Asian countries. This study makes a novel contribution to this literature gap and provides a better picture for policymakers who draft policy decisions at a governmental level and interact with military commands to get maximum benefits for citizens in need of public services and sustainability.

2. Literature review and hypotheses development

The classical public administration theory discusses the role of political intervention, decision-making capacities, and public sector organizations in public service delivery. In this regard, the practical and theoretical works of Max Weber, Woodrow Wilson, and Frederick Winslow Taylor have been noteworthy. The classical public administration theory also deals with scientific theory and systematically controls the system for public services developed by F.W. Taylor in 1911. In this regard [23], used a modernized concept of system management theory for service providing. He argued that well-established policy planning inputs and mechanisms enhance the quality of the service (which is the output), whereas system abnormalities (institutional and state vulnerable factors) are considered as adverse factors on delivery and quality. A more profound analysis found that a system management concept caters to the internal and external factors affecting service delivery [24].

The public management theory has been widely used in public administration, especially in healthcare reforms and policies [17, 18]. He discussed state capacity determinants that enhance the policy-making capabilities of the government and promote service delivery [21]. discussed "leadership style," a critical aspect of state capacity in public administration. He stated that an appropriate leadership style in bureaucratic decision making prudently deals with public sector management issues.

Sound expertise in bureaucracy accelerates economic development. Bureaucracy has been described as a complex hierarchical system of government designed to make policy decisions. Researchers studying the role of bureaucracy by applying public service

models and theories found that with time, the inclusion of various policies, practices, and reforms in a bureaucracy has a significant positive impact on quality of public services and institutions [25–28].

Furthermore [29,30], and [31] examined the effect of bureaucratic capacity and decision making on sustainable development. They discussed new ways of delivering public services and implementing policies, ensuring service quality, and paving the way toward sustainability. Prudent policy decisions in public service management and public servant regulation enhance workers' productivity and efficiency and significantly impact service delivery and institutional quality [32–34].

Bureaucratic effectiveness is not a unilateral aspect of decision-making. Some other determinants affect and enhance the quality of policymaking. A study of the behavior of bureaucracy in Asian economies concluded that public trust and personnel quality and efficacy positively impact state capacity and policymakers' decisions [1–3]. The effect of bureaucratic decision-making on public welfare, public service delivery, and institutional quality was recently examined, and it was found that effective policy making promotes service delivery, which generates sustainable human development [4–7].

H1. High risk of BQ demotes PHQ

The military is both an integral part of every state in the world and an area of concern for every state. The military's primary role is to protect the state from internal and external threats and make up a comprehensive defense mechanism for the country. However, military personnel's involvement in state matters and decision-making may have substantial positive and negative impacts on policy effectiveness and credibility.

[35] examined military involvement in policy matters in Pakistan-India [16], investigated military involvement in Turkish politics, and [36] analyzed the dominance of the military in Fiji. They all found that a high level of military involvement in matters other than the defense and protection of policies negatively impacts state fragility and ruins the civilian-military relationship, affecting state legitimacy. However, other studies have concluded that sensible bureaucratic expertise and military command can be vital to social and economic development. In these studies, prudent decision-making with adequate security measures provides the public with a sense of protection and positively affects the state [15,37].

There is a paucity of studies in the literature on the military's impact on politics, state matters, and the topic's sensitivity [38]. However [38,39], and [40] applied empirical testing and found that substantial bureaucratic decision making along with military command positively impacts a government's funding of socioeconomic development and accelerates social development. Recent studies have identified a combination of decreased military dominance and low military involvement in policy making to have a positive impact on state development [41,42].

H2. Military in politics (MP) promotes PHQ

H3. Bureaucracy-military interaction demotes PHQ

Development assistance funding plays a vital role in social development in developing countries. Along with domestic public and private investment, substantial and relevant funding in education, health, and infrastructure development support developing countries' progress toward sustainability and poverty reduction and enhance the state's financial capacity [43–50]. [51] investigated the European Union's (EU) impact on development assistance in developing countries; they found that the EU has significantly supportive implications for development assistance in developing countries that support sustainable social development. Moreover, in the context of socially sustainable development (e.g., health quality and accessibility, education quality and housing facilities, and economic development) in developing countries, development assistance has been a crucial determinant [52–56]. However, due to the high level of corruption in these countries, ensuring the accessibility of funding for quality resources has not been easy for donors or recipients. Corruption has been found to adversely affect the successful implementation of public policies, public management, and economic development, especially in developing countries [57].

“Corruption is an abuse of entrusted power for private gain.” There is a vast body of literature on corruption and its impact on the economy and institutional quality. The theory of corruption states that it is not an attribute of a specific society, institution, or sector but affects every region of the world at different frequencies and severity [58–60]. Public officials have been found to be primarily involved in corruption-related issues, which adversely affects institutional quality and public resource allocation [61–64]. Corruption is one of the major social evils and malpractices in public institutions; that is why it is also called institutional corruption in political terms. It is classified into three: nepotism, embezzlement, and bribery [65]. Nepotism and bribery are common in public institutions in developed countries, and ordinary citizens participate heavily in these unethical activities to get public services, which raises doubts about credibility and trust in the government. Based on these credibility issues, public administration accountability measures have been taken worldwide to provide transparent public services [4,66–70].

Corruption eradication and transparent institutional practices are also part of the UN sustainable development charter [71]. [72–74] studied the panel data of developed countries in Europe and developing countries in Africa and Asia up to 2015. They observed that corruption has negatively impacted economic growth and is a significant hurdle to sustainability. According to ICRG and Transparency International, Scandinavia and a few developed Asian countries have a lower level of corruption than African, Latin American, and Asian countries. This fact reveals that corruption is linked with its development status and institutions. In recent studies, corruption has been examined as a determinant of institutional quality. Additionally, its negative impact on economic growth and development has been studied by many scholars in various public policies to mitigate its adverse effects and enhance the accountability and transparency of public institutions in developed and developing countries [75–80].

Population growth and control measures have been a global concern, especially for developing and low-income countries, especially creating low-income countries pursuing sustainable development goals [81,82]. Population growth is also a crucial determinant

of public service delivery in developing countries, making resources scarce and creating social gaps, such as inequality of income, power, and gender, which is the primary problem [83,84]. Furthermore, public policy has to match the general public's needs so that it does not infringe on personal liberty and autonomy, as China's two-child policy amendment has demonstrated [85–87]. Studies on urbanization, migration, and energy consumption have found that population size disturbs resource allocation and public service delivery in developing countries and is critical to sustainable development [88–91]. However, population control policies and public awareness help countries achieve sustainable development and promote social development [92–95].

The abovementioned literature discussed the impact of military dominance and bureaucracy on social development, particularly in healthcare. However, no study in the current literature has examined the interaction of these two giant administrative powers or focused on empirically testing MP in panel economies. The next sections in this paper will attempt to fill this gap and recommend policy implications accordingly.

3. Material and method

For this study, data from 23 Asian economies from 2006 to 2020 were selected. PHQ was considered the dependent variable for better health-accessible services, health infrastructure, and patient care [88,96,97]. In contrast, the BQ index was used as the independent variable along with military involvement in politics. Moreover, the control variables used included population size, development assistance in net repayments amount, and corruption prevalence index. Table 1 provides a complete description of the variables.

The two-step generalized method of moments (GMM) was applied in this study, using STATA statistical software for estimations. Arellano-Bond (1991) used GMM as an appropriate estimation for panel data study. According to them, GMM is an excellent choice for analysis, where the N-no of the cross-section is greater than T-time; additionally, GMM controls the impact of endogeneity, omitted variables, measurement error, and biased results. According to Ref. [98], robustness testing of GMM and reliability through AR-1 and AR-2 tests described the first- and second-order differentiation. He found that AR-1 should be less than or equal to a 0.05 significance interval and AR-2 must be greater than the 0.05 significance interval for the reliability of results. Furthermore, the Hansen-Sargan tests assess an instrument's over-identifying restrictions and reliability [88,99–103].

The following econometric model equations [1–5] are used to achieve study objectives:

$$PHQ = \int (BQ, MP, CPI, LogDA, LogPoP) \tag{1}$$

Direct Impact Equation:

Static Equation:

$$PHQ = \beta_0 + \beta_2 (BQ)_i, \tau - 1 + \beta_3 (MP)_i, \tau + \beta_4 (CPI)_i, \tau + \beta_5 (LogDA)_i, \tau + \beta_6 (LogPoP)_i, \tau + \mu_{i,\tau} \tag{2}$$

Dynamic Equation:

$$PHQ = \beta_0 + \beta_2 (PHQ)_i, \tau - 1 + \beta_3 (BQ)_\mu, \tau + \beta_4 (MP)_i, \tau + \beta_5 (CPI)_i, \tau + \beta_6 (LogDA)_i, \tau + \beta_7 (LogPoP)_\mu, \tau + \mu_{i,\tau} \tag{3}$$

Indirect Impact Equation with integration.

Static Equation:

$$PHQ = \beta_0 + \beta_2 (PHQ)_i, \tau - 1 + \beta_3 (MP)_i, \tau + \beta_4 (CPI)_i, \tau + \beta_5 (LogDA)_i, \tau + \beta_6 (LogPoP)_i, \tau + \beta_7 integ(BQ * MP)_i, \tau + \mu_{i,\tau} \tag{4}$$

Dynamic Equation:

Table 1
Data variables and measurements.

Variables	Type	Description	Scale	Source
Public Health Quality (PHQ) is a proxy for Sustainable Social Development	Dependent Variable	It is a composite index of Health conditions and services in a state. It deals with the availability of medicines, health infrastructure, physicians, and water and sanitation for better health and mortality conditions.	0 (Best public services quality) 10 (worst or low public services)	Fund For Peace
Corruption Prevalence Index	Control Variable	Corruption prevalence in the state and malpractices in the institutions	0 (high risk) 10 (low risk)	Transparency International
Bureaucratic Quality	Independent Variable	The expertise in policy-making and bureaucratic decision-making in policy matters	0 (high risk) 4 (low risk)	ICRG
Military in Politics	Independent Variable	Involvement of the Military in state politics and the influence of military command on the political ruling	0 (high risk) 6 (low risk)	ICRG
Population Size	Control Variable	The population growth rate in the state following to previous year	Log value of Actual Population	The World Bank Dataset
Development Assistance	Control Variable	The actual amount of dollars received by the country from donors in a years	Log value of Actual Population	The World Bank Dataset

$$PHQ = \beta_0 + \beta_2 (PHQ)_{i, \tau - 1} + \beta_3 (BQ)_{\mu, \tau} + \beta_4 (MP)_{i, \tau} + \beta_5 (CPI)_{i, \tau} + \beta_6 (LogDA)_{i, \tau} + \beta_7 (LogPoP)_{\mu, \tau} + \beta_8 \text{integ}(BQ * MP)_{\mu, \tau} + \mu_{i, \tau} \tag{5}$$

- β0 = constant.
- PHQ= Public Health Quality.
- BQ = Bureaucratic Quality.
- MP = Military in Politics.
- CPI = Corruption Prevailing Index.
- DA = Development Assistance.
- PoP = Population size.
- Integ = Integration
- μ = Error term
- i = Country.
- T = period.

This study used panel data for better policy decisions and empirical evidence at the regional level. For this study, panel data were used for better policy decisions and empirical evidence at the regional level. Recent development in the social sciences domain and policy making make it vital to use panel data and their application through software usage for results accuracy for state development or social welfare concerning sustainable development other than mere mathematical expression [102,104]. In this scenario, GMM is a best-suited technique for controlling the autocorrelation (same trend of the variables) and endogeneity (effects of non-selected variables of the model) among variables in the recent development of social sciences in panel data studies, and it measures the accuracy of the dependent-independent effect, with statistical calculation for sustainable social development [105]. GMM also helps control heterogeneity (diversity of the trends of the variables) so that the accurate or most likely depiction of the outcome of the result can be gotten [106]. In summary, GMM is a comprehensive empirical application in social sciences that is used to measure the panel data of extensive data sets at once, and it enhances the accuracy of policy making at the state, regional, and global levels [100,101].

A conceptualized research framework was developed in this study based on the literature and discussion in Fig. 1. PHQ was the dependent variable and proxy of sustainable social development. Bureaucracy and MP, represented by the straight line in Fig. 1, show the direct and promotional impact on PHQ, while BQ and Bureaucracy and the Military’s interaction negatively impact due to conflicts of interest and differences of opinion on policy formulation, hampering the public health quality, promoting healthcare fragility, and is denoted with dotted lines. Fig. 1 shows that MP is the most significant contributor to the improvement of the quality of health in developing Asian countries. Moreover, it also shows that conflicts between the military and civilian government negatively impact social development, which should be tackled through prudent policy making. Similarly, BQ alone is not productive in developing countries where the state conditions are fragile.

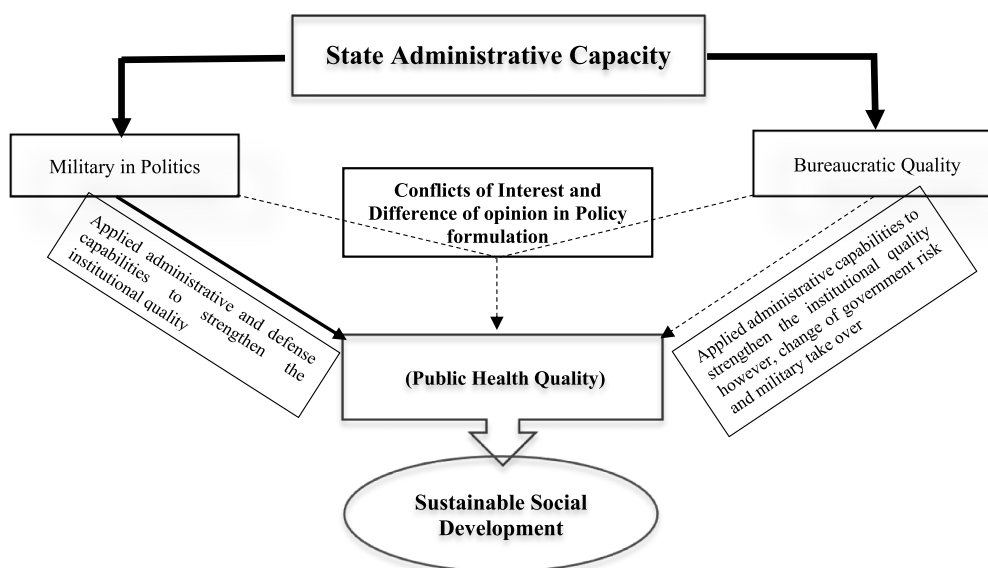


Fig. 1. Conceptualized research framework.

4. Results and discussion

4.1. Descriptive and correlation statistics

Table 2 describes the descriptive statistics of variables for selected countries.

Table 3 shows Pearson's correlation results. According to correlation metrics, BQ is negatively correlated with health fragility and PHQ, with a 90% significant interval. MP is positively correlated with PHQ in Asia. Simultaneously, a BQ*MP interaction is negatively correlated with PHQ. Moreover, control variables, development assistance, and population size are positively correlated with PHQ, and corruption is negatively correlated with PHQ, with a 90% significant interval.

4.2. Base-line results of two-step system GMM direct impact

On Table 4, Columns 1–4 show the diagnostics analysis of static and dynamic ordinary least square and fixed effect estimations and significant results, with R-square values of 0.630, 0.375, 0.949, and 0.761.

Column 5 describes the GMM results of BQ and PHQ along with control variables, without interpreting the moderating variable. The results show that BQ has a significant negative impact on PHQ in Asia due to high political pressure and inconsistent policy reforms or ideal administration outcomes. Similarly, institutional corruption has a significant negative effect on PHQ, with a 95% confidence interval. By applying the [98] GMM robust and model validity test, statistics showed AR-1 with a p-value of 0.00160 and a confidence interval of less than 0.05 and AR-2 with a p-value of 0.105 and a confidence interval of greater than 0.05. These AR-1 and AR-2 results show the validity of autocorrelation and disprove the null hypothesis of second-order differences, with a 0.05% statistical confidence interval; therefore, they support the study model.

Another reliability of GMM estimation: Nos. of J-state instrument should be less than Nos. of cross-sectional in this analysis; J-Stat are $20 < \text{Nos. of Cross-section } 23$. In analyzing the instrument's over-identifying restriction and validity, the Hansen-Sargan tests were applied; the Sargan, with a p-value of 0.0129, shows the over-identifying restriction's validity while the Hansen's p-value of 0.126 indicates the instrument's validity and fulfills the Roodman robustness criteria. Therefore, GMM analysis supported our study objectives and hypotheses.

4.3. Results of two-step system GMM with a moderating variable

Table 5 presents the diagnostic results in columns 1–4, similar to Table 4; however, the significance level and impacts changed when interpreting the moderating role of the military's effect on PHQ. According to the two-step GMM analysis in column 5, BQ strongly impacts on PHQ, with a 99% confidence interval. It also shows that bureaucracy impacts positively on PHQ unless and until some solid external or internal pressure acts on it or there is danger of institutional transition or overtaking. However, corruption, DA, and population control have varied results in the presence of a moderating variable.

The impact of public policy and government effectiveness on PHQ changed when MP and decision making were included in the analysis. Statistics showed that military involvement in politics enormously impacts PHQ, with a 99% confidence interval, implying that the military lends an edge to administration capabilities and quality and enhances institutional quality and bureaucratic expertise. However, after interacting with bureaucracy, the results changed. This study found that military involvement in politics is influential in Asia.

The analysis showed that BQ*MP demotes policy outcomes, minimizes institutional quality, and negatively affects PHQ due to conflict of interest and administration implementation. In contrast, MP drives fruitful policy outcomes and institutional quality in Asian diversified political and administration conditions. Furthermore, the results showed that a BQ*MP interaction creates a conflict of interest that hampers public policy implementation and that the Asia region has better administrative expertise with military dominance and a solid military influence on state matters than with bureaucracy. Moreover, BQ's threat of military dominance or political pressures has improved, resulting in better PHQ.

Moreover, the Arellano-Bond robust test results of 0.00169 (AR-1), which is less than the 0.05 confidence interval, and 0.0621 (AR-2), which is greater than the 0.05 confidence interval, show the validity of serial autocorrelation and reject the null hypothesis of second-order differenced with a 0.05% statistical confidence interval. Another reliability of GMM estimation is that J-Stat $22 < \text{Nos. of Cross-section } 23$. In analyzing the over-identifying restriction and validity of the instrument, the Hansen-Sargan tests were applied. The results showed Sargan with a p-value of 0.0161, implying that the instrument has an over-identifying restriction, and Hansen with a p-value of 0.133, depicting the instrument's validity; this fulfills the Roodman robustness criteria. Therefore, GMM analysis

Table 2

Descriptive analysis. Source: Authors estimation.

Variables	PHQ	BQ	CPI	Log PoP	Log DA	MP	BQ* MP
Mean	5.877	1.918	3.356	8.669	7.21	3.33	6.878
Std. Dev.	1.958	0.755	1.607	0.604	0.82	1.427	4.373
Min	0	-0.719	0.8	7.253	5.515	0	-0.719
Max	9.95	3.953	21	10.018	9.145	5	17.5
Obs.	625	557	581	554	625	557	557

Table 3
Pearson’s correlation analysis. Source: Authors estimation.

	PHQ	BQ	CPI	LogPoP	LogDA	MP	BQ*MP
PHQ	1						
BQ	-0.446***	1					
CPI	-0.601***	0.574***	1				
Log PoP	0.309***	0.153**	-0.121**	1			
Log DA	0.339***	-0.012	-0.285***	0.498***	1		
MP	0.621***	0.458***	0.616***	-0.352***	-0.329***	1	
BQ* MP	-0.593***	0.812***	0.697***	-0.201***	-0.258***	0.834***	1

***p < 0.01, **p < 0.05, *p < 0.1.

Table 4
Regression analysis: Full sample direct impact. Source: Authors estimation.

Variables	[1]	[2]	[3]	[4]	[5]
	Static Model		Dynamic Model		
	OLS	Fixed Effect	OLS	Fixed Effect	Two-step system GMM
	PHQ	PHQ	PHQ	PHQ	PHQ
PHQ			0.939*** (0.026)	0.689*** (0.040)	0.942*** (0.046)
BQ	-0.550*** (0.117)	0.120 (0.214)	0.003 (0.049)	-0.191 (0.134)	0.059** (0.106)
CPI	-0.624*** (0.079)	-0.210 (0.218)	-0.103*** (0.035)	-0.073 (0.059)	0.121** (0.062)
Log PoP	0.818*** (0.103)	0.852*** (0.176)	0.148*** (0.045)	0.396*** (0.071)	0.149*** (0.033)
Log DA	0.722*** (0.101)	-6.612** (3.041)	0.029 (0.044)	-1.083 (0.725)	0.005 (0.074)
Constant	-3.384*** (1.026)	49.225** (22.490)	-0.887** (0.415)	7.206 (5.374)	-0.703 (0.573)
Observations	280	280	268	268	258
R-squared	0.630	0.375	0.949	0.761	
AR-1					-3.157
AR-1-p					0.00160
AR-2					-1.621
AR-2-p					0.105
Sargan					28.33
Sargan-p					0.0129
Hansen					20.13
Hansen-p					0.126
J stat –No of Instruments					20
chi2					19176
chi2-p					0
Number of Country		23		23	23

***p < 0.01, **p < 0.05, *p < 0.1 (Roodman, 2009).

supported this study’s objective and hypotheses.

4.4. Discussion

The quality and accessibility of public health services are the prime objective of any government, and they lead the state towards sustainable development in human well-being and better quality of life if the government plans and implements policies effectively. Bureaucracy is an integral part of this planning phase. Prudent decision making regarding public policies promotes social and economic development. Asian economies have diverse political and administration systems, e.g., democratic, bureaucratic, authoritarian, and military dominant states. Because of these political/administrative dimensions, public policy decision making also has diverse expertise and priorities [8,107].

A previous study by Ref. [31] found that bureaucracy has a significant positive impact on society and the development of the state. A recent study [1] added that bureaucracy’s role positively impacts policy making. However, developed states’ results cannot apply to other states, especially developing or low-income states which have low resources and lack administrative expertise. Furthermore, researchers individually investigated the role of bureaucracy in developing Asian economies, such as Bangladesh, Sri Lanka, and Pakistan, and found that administrative reforms and expertise have varied effects on public policies, which backed the findings of previous studies [1,4,6,7]. However, this panel study’s findings showed that Asian countries are highly influenced by the high risk of bureaucratic incompetence affecting health and well-being. It further showed that bureaucracy is due to socioeconomic risk factors;

Table 5
Regression analysis: Full sample. Source: Authors estimation.

Variables	[1]	[2]	[3]	[4]	[5]
	Static Model		Dynamic Model		
	OLS	Fixed Effect	OLS	Fixed Effect	Two-step system GMM
	PHQ	PHQ	PHQ	PHQ	PHQ
PHQ			0.922*** (0.027)	0.686*** (0.040)	0.917*** (0.061)
BQ	-1.141*** (0.186)	0.336 (0.224)	-0.091 (0.086)	-0.106 (0.165)	0.718*** (0.273)
CPI	-0.585*** (0.080)	-0.203 (0.221)	-0.100*** (0.037)	-0.066 (0.061)	0.018 (0.025)
Log PoP	0.818*** (0.107)	0.882*** (0.181)	0.155*** (0.049)	0.403*** (0.072)	0.085** (0.036)
Log DA	0.573*** (0.101)	-6.652* (3.292)	0.015 (0.045)	-1.204 (0.763)	0.191*** (0.070)
MP	0.571*** (0.114)	0.341 (0.359)	-0.099* (0.052)	0.063 (0.161)	-0.709*** (0.193)
BQ* MP	-0.265*** (0.058)	-0.238 (0.196)	0.040 (0.026)	-0.070 (0.082)	0.399*** (0.102)
Constant	-1.141 (1.139)	49.212* (24.569)	-0.510 (0.468)	8.120 (5.748)	-2.869*** (0.729)
Observations	280	280	258	258	258
R-squared	0.664	0.384	0.950	0.763	
AR-1					-3.140
AR-1-p					0.001
AR-2					-1.866
AR-2-p					0.621
Sargan					27.59
Sargan-p					0.016
Hansen					19.90
Hansen-p					0.133
J-Statistics					22
chi2					6681
chi2-p					0
Number of Country		23		23	23

***p < 0.01, **p < 0.05, *p < 0.1 (Roodman, 2009).

corruption and demographic pressures act as a diversion force for prudent decision making, restricting social development. Our findings support previous studies' claim that a high risk of bureaucracy affects public institutions' quality in other world regions.

Our findings as well as those of previous studies support the fact that bureaucratic supremacy and decision-making in state matters positively impact state development in selected Asian countries and vice versa. However, this study's findings revealed that MP has a highly significant positive impact on decision making, accelerating public policy implementation; this is in contrast to findings by Refs. [36,42]. Other studies found that the military's decreasing influence in politics and state matters positively impacts social development and promotes resource allocation, leading to socioeconomic development [39,41]. However, few studies in Bangladesh, Malaysia, Pakistan, and Turkey have discussed the positive effects of relatively moderate military inclusion, such as tourism industry reforms and improved civilian-military relations, on public policy and state social development [15,37,40].

However, this study has contributed to MP's role in panel Asian economies. Our findings show that MP not only positively affects institutions' health quality through prudent administration but also acts as a driving force to enhance bureaucratic decision making by threatening to overtake it. Apart from BQ expertise and military dominance, BQ's positive influence on the military's relative involvement accelerates institutional quality and deliverables and promotes sustainable public services. Furthermore, health services' institutional collaboration and policy development through bureaucratic and military administrative elements create a conflict of interest and different outcomes due to additional administration and expertise.

Along with decision making and administrative state capacity, transparency of the institutional environment and demographic pressures also influence public policy outcomes. A study revealed that through military administration influence of institutional corruption also has no impact on services quality which adversely affected policy outcomes, while anti-corruption reforms and initiatives accelerate social and institutional quality [72-74,108]. It has been found that population growth has a negative impact on social development and hikes social inequality in developing countries [88-91].

However, significant population control policies promote social development and accelerate the economy toward sustainability [94,95]. Another determinant of social development and public service promotion in developing countries is improved assistance from OECD and donor countries. Our findings support those of previous studies that state that development assistance from OECD is a crucial aspect of social and economic development in developing countries [52-56,96].

5. Conclusion and recommendations

This study aimed to explore the effect of administrative state capacity and BQ and the role of MP on Asian economies for sustainable social development through better health outcomes. The study used sustainable social development to proxy the PHQ index for better health-accessible services, health infrastructure, and patient care, thereby achieving the study's objective. For a more insightful analysis, corruption, population size, and development assistance were taken as control variables, and their impacts on PHQ in Asian economies were investigated. The study concludes that BQ impacts public health delivery and quality in Asian economies unless and until military administration shows its presence and dominance. It also concludes that the military administration positively impacts PHQ through its involvement in the state and health sectors and helps eradicate corruption and socioeconomic risk through its strong administrative capacities.

This impact makes prudent decision making and administrative reforms crucial for public services and sustainability. Moreover, this study's findings add a critical point to the current literature: relative military involvement in Asian economies can enhance the state's security and defense mechanism and promote economic development. However, by focusing on the military's core defense and state protection function, this study suggests a productive institutional collaboration between the military and bureaucratic institutions. Hence, sharing expertise and capabilities pushes a state towards sustainable development without risking political instability or chaos.

This study has made an innovative analysis of administrative state capacity determinants, BQ, and the role of MP on PHQ in Asian economies from a sustainable development perspective. The following are our recommendations for policymakers.

5.1. Recommendations for policy makers

- Institutional collaboration, prudent decision making, and aggressive policy reforms should be exercised through administrative harmony for sustainable social development and health well-being and cater to health emergencies with good policy reforms in future expertise and administration policies in Asia.
- A military administration should be considered a last resort. The administration should be handled by bureaucratic institutions without any external pressures and with vigilant and prudent public policies. Although military dominance shows many positive results in Asia, continuous and high military involvement can divert the primary focus and create misleading results in the long run.
- The bureaucracy should be empowered with strong public policy-making and capacity-building elements, which is one of the vital themes of the UN's SDGs.

5.2. Study limitation and future study directions

A data availability constraint was observed in this study. In future studies, variable shuffling may give different results. This study analyzed emerging and developing Asian countries and faced some challenges in obtaining data on control variables. The effect of state capacity on institutional governance and that of financial resources on health quality will be a vital topic in a future comparative regional analysis. Besides state capacity, regional interaction and the impact of internal and external conflicts on public services can also be considered in a more in-depth analysis of public service sustainability. Moreover, the role of these administrative aspects in health emergencies can also be explored in future studies.

Author contribution statement

Hafiz Syed Mohsin Abbas: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Wrote the paper.

Xiaodong Xu: Contributed reagents, materials, analysis tools or data; Performed the experiments; Wrote the paper.

Chunxia Sun: Analyzed and interpreted the data; Performed the experiments; Wrote the paper.

Sadia Abbas: Contributed reagents, materials, analysis tools or data; Performed the experiments; Wrote the paper.

Data availability statement

Data will be made available on request.

Additional information

No additional information is available for this paper.

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Ethics approval statement

Our institute does not require ethical approval for this type of study.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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