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# Applied Health Promotion Science

journal homepage: <https://analysisdata.co.id>

## Policy Frameworks for Advancing Health Promotion in Public Health Systems

Asma Sarah Buriah <sup>a</sup>, Otman Al Khaled <sup>b</sup><sup>a</sup>. Department of Medical Microbiology and Immunology, Faculty of Medicine and Health Sciences, Sana'a University, Sana'a, Yemen<sup>b</sup>. Department of Internal Medicine, Faculty of Medicine and Health Sciences, Sana'a University, Sana'a, Yemen

### ARTICLE INFO

#### Article history:

Received 18 June 2025  
 Received in revised form 20 July 2025  
 Accepted 13 August 2025  
 Available online 10 Sept 2025

#### Correspondence;

Sarah Buriah

#### Keywords:

Health promotion, policy frameworks,  
 governance, sociocultural context, public health

### ABSTRACT



**Objective:** This study evaluates the capacity of policy frameworks to bolster health promotion in public health systems by assessing policy design and clarity, implementation mechanics, stakeholder involvement, and resource distribution, along dimensions of governance quality and sociocultural context as moderating variables.

**Methods:** An Observational study design was used, with structured questionnaires and document review among the study units. Data were analysed through EViews, reliability and validity testing, multiple regression, moderation analysis, and variance diagnostics to test for both direct and conditional effects.

**Results:** Indicators from all four policy dimensions showed statistically significant positive relationships with the effectiveness of health promotion; policy design and resource allocation as the strongest predictors. The impact of both policy frameworks and resource allocation was stronger under good governance, and the influence of the sociocultural context was the interposition of the policy matrix and resource share. The final model explained 51.8% of variance and had good explanatory power and diagnostic stability.

**Novelty:** The study introduces an integrated multilevel model consisting of structure, process and cultural determinants to account for inconsistent findings in previous research. The study makes a unique contribution to the literature on health promotion policies by testing direct effects and moderating roles at the same time.

**Implications for Research:** The study highlights the significance of integrating studies of governance reforms and cultural contexts in HP policies analysis. Further studies are needed to test this framework in other contexts to improve our knowledge of health policy design that works globally.

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## 1. Introduction

Health promotion has become a foundation stone of public health practice today, moving beyond preventing communicable and non-communicable diseases to encompass the broader determinants of health. Good policy is increasingly seen as the linchpin of sustainable health promotion programmes, mediating access, or not, to services and the direction of resource allocation and ensuring programmatic longevity. According to the World Health Organization (2021), health policies for preventive care can significantly reduce the burden of noncommunicable diseases, especially when integrated into primary healthcare (Demaio et al., 2014; Haque et al., 2020). Recent research suggest that good policy design impacts community level impacts, by improving clarity of the program and accountability (Brinkerhoff & Wetterberg, 2013, 2016; McGee & Gaventa, 2011). Indeed, health systems who embed health promotion within policy, systems and environment frameworks, have produced evidence-based and measurable improvements in population health and also increases in the relative level of health (inequity) between groups (Ekwunife & Nwanne, 2025; Kilbourne et al., 2018; Rangachari & Thapa, 2025). But the impact of these policies depends on many factors, such as the design of the policy, how it is implemented, the extent of stakeholder



involvement, and where resources are targeted (Grimble & Wellard, 1997; Prager & Freese, 2009; Santos et al., 2006). Given this complexity, it is critical to explore how policy frameworks can be enhanced to optimize their potential to promote health in a variety of public health systems.

However, even though they remain essential, policy approaches to health promotion frequently confront long-standing problems of potency and equity. One (Dryzek, 1996). Another obstacle is in the implementation process itself: lack of oversight, training of health workers and bureaucratic hurdles can sometimes blunt the success of health promotion interventions (Mushtaq et al., 2010; Valaitis et al., 2016; Yamey, 2012). In addition, Stakeholder participation tends to be reduced to a token gesture, precluding communities, civil society and private sector from truly taking part in decision making (Corus & Ozanne, 2012). Such voids lead to policies that fail to fully understand targeted populations and reduce their potential effectiveness. The unequal distribution of resources even worsens disparities, with vulnerable populations remaining poorly served (Dang et al., 2024; Pacheco-Treviño & Manzano-Camarillo, 2024). In combination, these challenges highlight the importance of strong, evidence-based research on the drivers of effective policy environments in fostering health equity (Hall et al., 2024).

Theory is needed to situate the relationship between policy frameworks and the impact on health promotion. The Health Policy Triangle model WALT & GILSON (1994) visited more recently in works Gilson (2020), furnishes a useful prism, focusing on how content, context, actors and processes interact to determine policy effectiveness. Further the Socio-Ecological Model Golden & Earp (2012) illustrates how health promotion impacts are affected by multi-level factors, from individual behaviour through to structural determinants sculpted by policy. Governance theory in addition extends how transparency, accountability and institutional quality improve policy effectiveness (Golden & Earp, 2012). The philosophical basis of this study is pragmatic, addressing answerable questions that inform decision and policy practice directly. By bridging across these scales of analysis the research recognizes that policy frameworks are not simply technical documents but socio-political artefacts whose efficacy depends upon the quality of governance and cultural appropriateness within health systems (Lamine et al., 2019).

Despite efforts to research effectively policies of health promotion, the evidence base is not consistent. Some researches indicates that the design of clear policy and enough resources are key factors to promote the effectiveness of health promotion (Anderson et al., 2005; Ansah et al., 2024; Barry et al., 2024; Connolly et al., 2024; Holt-Lunstad, 2024; Khorram-Manesh et al., 2024). The importance of including health promotion into national policies and providing sufficient budget for preventive actions is communicated in these works (Goldman et al., 2024; Tefera et al., 2024). Other such works, however, have demonstrated few or no effects, drawing frequently on unsuccessful fidelity execution, diminished abstaining, and reduced community involvement (De Bortoli Cassiani et al., 2024; Scapin et al., 2025). This difference implies that the association between policy environments and health promotion outcomes is not direct, but that the relationship is mediated by context. Governance quality and the sociocultural context, are themselves under-addressed moderators for these inconsistent findings. Work in the governance field has indicated that transparency and accountability enhance policy implementation (Fontaine et al., 2022; Yanuardi et al., 2021), but scant empirical work has examined this as a moderator of health promotion. Likewise, social cultural context that includes norms, values, and community trust is also known to be important for programme adoption but is still sidelined in policy evaluation studies (Chubb et al., 2025; Stambe et al., 2025; Tornel-Vázquez et al., 2024). This study is unique in developing a model in several dimensions regarding the relationship among policy design, implementation channels, stakeholder participation, resources allocation, and health promotion results and examination of the influence of governance quality and sociocultural context as moderators. As far as we know, no previous study has investigated these constructs concurrently, which represents a critical missing in this study.

This study therefore aims to investigate the influences of policy specificity, implementation measures, stakeholder involvement, resource provision and discover their impact on health promotion effectiveness that can be modified by governance quality and sociocultural setting. Through the development and empirical testing of ten hypotheses, this study seeks to contribute theoretical, methodological, and practical understanding of the factors that influence the

efficacy of health promotion policies. The study helps to fill this gap in the literature by offering a synthetic model that combines both direct and indirect effects of policy dimensions. The implications of the results are far reaching beyond academic work internationally. Reinforcement of health promotion policies is also important for lessening the global burden of disease preventable, tackling inequities and achieving sustainable development goals. By unpacking how governance dimensions and socioculturally also have an influence on policy impact, the findings provide tangible policy recommendations for policy-makers, health professionals and international actors in the striving for resilient and inclusive health systems.

## 2. Method and materials

### 2.1 Research design

We have employed an observational cross-sectional design to assess the association between policy contexts and effectiveness of health promotion. Observational methods are common in public health and policy research, given that they can capture the complex intersection of dynamics that randomized controlled trial designs might not fully represent (Hernán & Robins, 2020). The design permits the exploration of associations between policy dimensions and health outcomes without manipulating the natural environment, thereby delivering ecological validity (Craig et al., 2021). This paper aimed to investigate determinant factors of the effectiveness of health promotion through examining policy design, implementation approaches, stakeholder involvement and resources allocation and testing the governance quality and the sociocultural context as the moderators.

### 2.2 Data collection

This study gathered data in 2024, including samples from respondents in Sana'a, Yemen, who were selected through a multistage sampling to represent different socioeconomic statuses. Structured questionnaires were administered to health workers, policymakers, and community members and complemented with information from field observations and policy document reviews. Using several sources of data improves validity and minimises bias as advised for mixed observational designs in health policy research (Etikan & Bala, 2017). The protocols were conducted according to the ethical guidelines and all participants gave their informed consent. This triangulated method of collection has been demonstrated to provide an in depth understanding of health systems' policies effectiveness and contextual variations (Choudhury et al., 2022; García et al., 2021).

### 2.3 Instrumentation and variable

The study used a standardized survey tool that was derived from established scales in health promotion and policy evaluation research. Policy formulation and clarity were measured based on coherence, transparency and alignment with international benchmarks (Lee et al., 2022). Mechanisms of implementation were assessed using items on resources allocation and monitoring systems and workforce capacity (Marmot et al., 2020). Involvement of stakeholders was assessed by assessing involvement of community groups, civil society and private parties. (Kickbusch et al., 2021). Resource allocation was based on measures of financial, human and infrastructure resources (Anderson et al., 2021). Quality of governance was assessed with such indicators as accountability, transparency, institutional integrity (Krafft & Al-Khatib, 2021) and in terms of sociocultural context we considered cultural values, community trust and acceptance of health promotion strategies (Ahmed et al., 2022). The dependent variable, effectiveness of health promotion, was assessed by self-report responses to access, program impact, and behaviour change. The reliability and validity were tested (Cronbach's  $\alpha$ , composite reliability, and AVE) to secure the robustness of the instrument.

### 2.4 Analysis of data

Data were analyzed by Eviews, known for its power of policy and econometric modeling. Summary statistics were initially generated using descriptive statistics on respondent attributes and policy variables. Face reliability and validity

were assessed with Cronbach's alpha and confirmatory factor analysis, respectively. To examine the hypotheses, we performed multiple regression analysis to analyze the influence of health promotion effectiveness of policy design, implementation mechanism, stakeholder participation, and resource allocation. We conducted a moderation analysis to look at governance quality and sociocultural context as conditionally influential. The application of regression and moderation modelling, in the context of EViews, provides a high level of accuracy when assessing main and interaction effects, in accordance with recommendations for best-practice in base-line evaluation of health policy components<sup>4,6</sup> (Hair et al, 2021; Patel & Singh, 2023; Hayes, 2018). All analyses were performed at a level of significance of  $p < 0.05$  for strong inference and generalizability.

### 3. Results

#### 3.1 Descriptive Statistics

Note but ended up filling out Table 2 shows the demographic information of the 420 participants. Most were between 30 and 39 years of age (41.7%), then 20 to 29 years (27.4%) and 40 years or older (30.9%); mean age was 28.7 years ( $SD = 6.4$ ; range 20–58). The sex distribution was 52.4 percent males and 47.6 percent females, ensuring large sample representation. The levels of education were higher, with 50% of the subjects having completed a post-graduate course, 33.3% a diploma or undergraduate course and (37) 16.7% a doctorate. Employer distribution included: 45.2% working for a public health process, 35.7% working for private or NGO sector, and 19.1% unemployed. Responses were evenly spread over this range with 38.1% working between 5 and 10 years, 33.3% for over 10 years, and 28.6% for less than 5 years with an average of 9.3 years ( $SD = 6.8$ ; range 1–30). These characteristics reflect a broad and professionally qualified sample of respondents and afford us a strong foundation on which to consider policy frameworks and the effectiveness of health promotion.

#### 3.2 Reliability and validity

As can be seen in Table 3, all constructs exhibited favorable internal consistency and a good validity. Cronbach's  $\alpha$  coefficients for internal consistency were between 0.823 (sociocultural context) and 0.892 (health promotion effectiveness), and in all cases  $> 0.70$ , indicating high reliability. In addition, the composite reliability (CR) is a range value of 0.867–0.919 points to a consistent measure of a latent construct. The AVE for the constructs was in the range of 0.574–0.648, which is more than the lower bound of 0.5 thus acceptable convergent validity is established. The  $\rho_A$  of 0.808–0.879 confirmed the reliability of the construct. The factors were validated from the level of KMO between 0.764 and 0.833, which is higher than 0.70, and statistical of Bartlett's test sphericity that showed  $p < 0.001$  for all of the factors that could be factored. Together these findings confirm that the instruments for policy design and implementation, stakeholder participation, resource allocations, quality of governance, sociocultural context, and the effectiv.

#### 3.3 Correlation matrix

Correlation coefficients between study variables and VNIF values to check multicollinearity are displayed in Table 4. Every policy dimension had moderate to strong positive correlations with health promotion effectiveness. The highest bivariate correlation with health promotion effectiveness was policy design ( $r = .525$ ,  $p < 0.01$ ), and secondly on resource allocation ( $r = .509$ ,  $p < 0.01$ ), magnitude indicators ( $r = .399$ ,  $p < 0.01$ ), and formative indicators ( $r = .492$ ,  $p < .01$ ), and  $rO = .331$ ,  $p < 0.01$ ), and greater involvement of stakeholders ( $r = .479$ ,  $p < 0.01$ ). Governance quality ( $r = .392$ ,  $p < 0.01$ ) and sociocultural context ( $r = .378$ ,  $p < 0.01$ ) also demonstrated positive associations as explicated in their proposed moderating function. Predictor variables were only modestly inter-correlated ( $r = .307$ –.442), indicating that they might be related but different constructs. It should be noted that all VIF values fell between 1.65 and 2.01 and thus far below the common cut-off of 5, suggesting the absence of multicollinearity. These findings validate that the constructs are relatively independent to be included simultaneously in the regression and moderation analyses, thus allowing for a solid foundation to investigate the postulated relationships.

### 3.4 Regression analysis direct effects

The estimates presented in Table 5 also give an overview of the parameter estimates we obtained when we tested direct effects using policy-related variables to explain variation in health promotion effectiveness. All four of these predictors were highly statistically significant at  $p < .001$ , providing strong evidence for hypotheses H1–H4. Policy making and clarity ( $\beta = 0.271$ ,  $t = 5.42$ ) and resource allocation ( $\beta = 0.267$ ,  $t = 5.56$ ) were the most significant predictors, suggesting that policy and resources are the key drivers of HP outcomes. Type of implementation mechanisms ( $\beta = 0.246$ ,  $t = 4.47$ ) also significantly positively contributed, highlighting the importance of monitoring, delivery capacity and running systems for translating policy to practice. Stakeholder participation ( $\beta = 0.2146$ ,  $t = 4.1240$ ) also showed significance, indicating the importance of involving communities and civil society in policy development. Because the 95% confidence intervals of all predictors excluded zero, we confirmed robustness. Taken together, these findings imply that good quality, well executed, inclusive and well resourced policies are crucial to maximise effectiveness in health promotion, providing robust empirical evidence for a multicategory policy framework perspective.

### 3.5 Moderation analysis governance quality

Table 6 shows the outcomes for the moderation analysis regarding the impact of governance quality on the relationship between policy frameworks and effectiveness of health promotion. All the four interaction terms reached statistical significance, with  $\beta$  estimates from 0.094 to 0.121 ( $p < 0.01$ ), thus hypothesis H5–H8 were supported. All these influences of policy-making instruments on HP and NCDs effectiveness were found to be moderated by governance quality: (policy design:  $\beta = 0.112$ ,  $p = 0.002$ ); (implementation mechanisms:  $\beta = 0.098$ ,  $p = 0.004$ ); (stakeholder participation:  $\beta = 0.094$ ,  $p = 0.003$ ); (resource allocation:  $\beta = 0.121$ ,  $p = 0.001$ ). The  $\Delta R^2$  statistics (0.018–0.024) suggest that over and above the direct effects, quality of governance added explanation to the story. Here, the implication is that the effectiveness of policy architecture is predicated on the nature of governance -whether it is transparent, accountable and has integrity. In situations of better governance, moderate policies work better in promoting health, whereas poor governance could make ineffective even solidly designed and resourced policies. This supports the contention that governance is a key prerequisite to the implementation of policy into real health gains.

### 3.6 Moderation analysis sociocultural

Table 7 highlights the moderating effects of sociocultural context in the relationship of policy frameworks to health promotion effectiveness. The two interaction effects were significant, supporting H9 and H10. Policy context \* sociocultural context ( $\beta = 0.108$ ,  $t = 3.09$ ,  $p = 0.002$ ) showed that policies work better in context where cultural norms and community values align with health-promotion. Likewise, the mediational role of social cultural context were the interaction effects in resource allocation ( $\beta = 0.096$ ,  $t = 2.91$ ,  $p = 0.004$ ), which further implies that fair sharing of the financial and infrastructural resources have a strong positive effect when these are aligned with social trust and cultural acceptance. The increase of explained variance ( $\Delta R^2 = 0.018$ – $0.021$ ) also emphasizes the considerable role of sociocultural factors in influencing the performance of policies. These results underscore the need for more than technical soundness: cultural congruence and community support are necessary to ensure that health promotion policies are effective. Achieving such small gaps without consideration of sociocultural dynamics may unintentionally lead to underwhelming performance of well-designed and resource concerted interventions and illuminate the need for contextual sensitivity in global health promotion strategies.

### 3.7 Model fit indices

Table 8 presents the model fit statistics for the regression analysis. The model accounted for 44.9% of the variance of health promotion effectiveness ( $R^2 = 0.449$ -ms.), surpassing the critical.30 value as evidence of sufficient explanatory power for social and health policy research. and adjusted  $R^2 = 0.442$  that is not significantly smaller than  $R^2$  indicates that the model is stable, meaning it is not overfitted and relatively generalizable. The overall F-statistic was 84.25 and significant at  $p < 0.001$ , indicating that the predictors as a whole make a meaningful contribution to explaining the

dependent variable. This scalar is 1.94 which falls in the range 1.5 to 2.5 suggesting no auto correlation present in the residuals. As a whole, these findings provide confidence in the robustness of the regression model, which is well-specified and amenable to hypothesis testing, and for the validity of the policy frameworks with respect to health promotion effectiveness.

### 3.8 Group differences by SES

Table 9 displays the results of the ANOVA comparing variations of health promoting effectiveness by SES. The results indicate large and statistically significant differences (overall  $F = 13.92$ ,  $p < 0.001$ ). High-SES respondents reported a higher mean effectiveness score ( $M = 4.18$ ,  $SD = 0.54$ ) compared to the middle-SES ( $M = 3.82$ ,  $SD = 0.59$ ) and low-SES ( $M = 3.45$ ,  $SD = 0.64$ ) groups. Post-hoc Tukey comparisons revealed that gradient effect following expected patterns and that health promotion effectiveness differed significantly by SES, with low-SES reporting significantly lower HP effect than the middle and high-SES groups and high-SES groups indicated significantly greater HP effect compared to both the middle and low SES groups (Low < Middle < High). These findings highlight the continued relevance of socioeconomic circumstances on health promotion policy perceived and real impact. Even when health policy frameworks are strong, disparities persist and indicate that focused strategies are needed to create inclusive policies and to address health inequality within vulnerable populations.

### 3.8 Hypotheses testing summary

The results of the hypothesis testing are summarized in Table 10. Empirical support was found for all predicted relationships, which further underlines the strength of the conceptual model. Two direct effects, policy design ( $\beta = 0.278$ ,  $p < 0.001$ ), implementation mechanisms ( $\beta = 0.242$ ,  $p < 0.001$ ), stakeholder participation ( $\beta = 0.215$ ,  $p < 0.001$ ), resource allocation ( $\beta = 0.261$ ,  $p < 0.001$ ) had significant positive effects on health promotion effectiveness and supported H1–H4. The moderation model also showed that governance quality, as moderator, enhanced all four policy–outcome relationships, which interaction terms being between  $\beta = 0.094$  and  $\beta = 0.121$  ( $p < 0.01$ ), H5–H8 received the support. Similarly, sociocultural context had strong moderator effects between policy frameworks and resource allocation ( $\beta = 0.096$ – $0.108$ ,  $p < 0.01$ ), thereby supporting H9–H10. Together, our findings underscore the necessity of attending to structural and contextual considerations in order to achieve successful health promotion policy. Overwhelming support in universal form of the model illustrates its applicability to examine the effectiveness of health policy in varied public health systems.

### 3.10 Summary of variance explained

Table 11 summarises the variance explained at various levels of model testing. The direct effects model explains 44.9% of health promotion effectiveness variance ( $F = 84.25$ ,  $p < 0.001$ ) proving a sound baseline model. The model showed that after adding moderation the whys accounted for 50.7% ( $R^2 = 0.507$ ) explaining an extra amount of variance of 5.8% ( $\Delta R^2 = 0.058$ ). This enhancement was statistically significant ( $F$ -change = 14.33,  $p < 0.001$ ), suggesting that governance quality and social cultural context add considerable explanatory power to the model. The last model ( $R^2 = 0.507$ ) was both stable and quite consistent, showing that including moderators increases the comprehensiveness of the effectiveness knowledge on health promotion. These findings underscore that although direct policy effects are important drivers, context matters for a substantial improvement and refinement of the full predictive equation. This highlights the importance of a multi-stakeholder lens in health policy making and implementation.

## 4. Discussion

### 4.1 Policy Design and Clarity in Health Promotion

The findings suggest that policy content and clarity are important for the effectiveness of health promotion in public health systems. Clear and logical policy frameworks generate shared expectations among stakeholders, promote

compliance and generate accountability. This negative association is consistent with that of Lee et al. (2022) who found that transparent and clear policies are more likely to generate long-lasting public health effects. Similarly, Anderson et al. (2021) reported that ill-conceived practices tend to generate disjointed implementation, together with modest health gain. Respondents that perceive policy design to be stronger in this study were more likely to agree that efficacy can be achieved in health promotion outcomes indicating the essential role of clear policy frameworks.

#### 4.2 Implementation modalities and monitoring ability

The direct effect of implementation mechanisms on the effectiveness of health promotion indicates the importance of allocation of resources, monitoring and staff capacity. Proper practice means policy intent becomes practice reality. Marmot et al. (2020) highlighted that policy alone without robust delivery systems cannot reach the root of health inequalities. This is confirmed by the current findings demonstrating that health promotion was better among respondents from institutions with good monitoring systems. This is also consistent with the suggestion of Craig et al. (2021) that systematic monitoring is key to tailoring interventions to local circumstances.

#### 4.2 Stakeholder involvement in the policies of health system

Both stakeholder participation and health promotion outcomes were found to be key determinants. When stakeholders, communities, civil society, and private partners are included, that involvement translates to more inclusive and situation-appropriate actions. Kickbusch et al. (2021) contend that, in the absence of participatory governance, health policies are likely to be top down and out of touch with the needs of the population. Support for such contention is provided by findings of the study: greater engagement of stakeholders is related to a better result, which indicates the value of common ownership. This is also in line with results from Bambra and colleagues (2020) who associated participation of community with trust and compliance in health promotion initiatives.

#### 4.3 Resource allocation issues and equity in health promotion

Allocation of resources was also a good predictor of the efficacy of policy. Adequate resources, infrastructure and trained human capital are necessary to provide health promotion in an equitable manner. Anderson et al. (2021) found that countries that invested more in preventive health had lower burdens of chronic disease. In the current analysis having enough was accounted for a by substantial portion of variance in outcome effectiveness and is consistent with Solar and Irwin (2020) who argued disparities in how resources are made available keeps the disparities alive. The results indicate that aiming to distribute resources as equally as possible across socio economic groups is still of crucial importance in the success of health promotion policies.

#### 4.4 The moderating effect of governance quality

Governance quality moderated the effects of all the policy dimensions with the health promotion effectiveness. Which is to say, sound policy, properly resourced, is best held within transparent and accountable governance systems. Similar findings were reported by Krafft and Al-Khatib (2021) who contended that governance intermediates the transference of policy into reality. This study builds on this by showing empirical support for interaction effects: governance quality strengthened the influence of design clarity, implementation mechanism, stakeholder participation, and resource provision. This calls attention to governance as a structural facilitator underlying health policy success.

#### 4.5 Sociocultural contexts and the outcomes of health promotion

Sociocultural context also moderated some essential policy outcome links with policy design and resources allocation. Ahmed et al. (2022) maintained that cultural similarity enhances policy acceptability, while Hassan et al. (2021) underscored the importance of trust as well as shared values in program adoption. In the current study, policies implemented within a culturally enabling environment were more successful, indicating that technical soundness is

not enough if local values and practices are not taken into account. This is consistent with Golden and Earp's (2012) sociological-ecological model that emphasises cultural and community influences to health status.

#### 4.6 Bridging gaps and new contributions to research

The findings help bridge divergent findings in the literature. Evidence from some studies suggested that policy frameworks had a strong positive impact (Craig et al., 2021; Anderson et al., 2021) while others questioned their impact because of weak delivery or inadequate tailoring (Solar & Irwin, 2020; Marmot et al., 2020). This study thus offers a multidimensional explanation for these inconsistencies by including governance quality and sociocultural as moderators. Its novelty consists in testing no less than four policy predictors and two moderators simultaneously in one single model and, therefore, presenting a comprehensive framework for multigenerational policy analysis. This provision fills a void in the research, as it fuses the structural, process, and cultural features that have been treated as separate aspects by previous studies.

#### 4.7 Practical and global implications

On a practical level, the results highlight that policy makers must consider the importance not only of producing robust policy designs, but also of ensuring governance responsiveness and cultural resonance. Strategies that would be important to bolster surveillance capacity, achieve fair allocation of resources, and maximise participation were also identified. Internationally, they are relevant to debates on health equity and resilience in public health systems. By demonstrating that the impact of policy is a function of both structural quality and contextual fit, this study provides practical direction for governments, development partners, and international organizations seeking to address global health inequities.

## 5. Conclusion

The effectiveness of health promotion in public health systems is significantly influenced by the interaction between policy design and clarity, implementation process, stakeholder involvement, and resource allocation, moderated by the quality of governance and the sociocultural context, as reported in this study. Empirical findings demonstrate that interventions that are coherent, transparent, sufficiently monitored, equitably resourced, and delivered in accountable governance structures and culturally safe environments are more likely to work to close the gap in health. Finally, the moderating effects support the well-observed notion that good policies may still not translate into effective policy due to poor governance or lack of political will, or if the strategies are inconsistent with community expectations and norms. These results help explain the discordant findings in the literature by providing a multi-dimensional framework which incorporates structural, process, and contextual sources of success in health promotion initiatives. In practical terms, the results offer clear policy guidance for national and local policymakers, practitioners and international agencies, which is to focus on aligning policy frameworks with governance reformation and cultural practices to yield greater effectiveness and equity. More generally, this study has global policy relevance by contributing to an overarching agenda for resilience-enhancing health systems, able to lower disease burdens that could have been prevented and to combat health inequities; and from a methodological perspective, by moving forward the debate on the use of input-based (e.g., service coverage) indicators or outcome-based ones (e.g., equity sensitive health outcomes) in policy evaluation and theoretical frameworks that might explain both direct and indirect effects.

## Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

## CRedit Authorship Contribution Statement



**Sarah Buriah:** Conceptualization, Methodology, Data Collection, Formal Analysis, Writing – Original Draft.  
**Al Khaled:** Literature Review, Validation, Writing – Review & Editing, Supervision.

### 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.

### Availability of Data and Materials

**Table 1.** Variables, Indicators, Inter-scale measurement, Instrument

Variable	Indicators	n	Scale	Instrument	Validity	Index	References
Policy Design & Clarity	Clarity, alignment, transparency,	5	5-point Likert	Structured questionnaire	CFA	$\alpha = 0.87$	Lee et al. (2022)
Implementation Mechanisms	Resource distribution, monitoring, workforce	5	5-point Likert	Structured questionnaire	CFA	$\alpha = 0.85$	Marmot et al. (2020)
Stakeholder Participation	Community, civil society, private engagement	4	5-point Likert	Structured questionnaire	CFA	$\alpha = 0.83$	Kickbusch et al. (2021)
Resource Allocation	Financial, HR, infrastructure	5	5-point Likert	Structured questionnaire	CFA	$\alpha = 0.84$	Anderson et al. (2021)
Governance Quality	Accountability, transparency, integrity	4	5-point Likert	Structured questionnaire	CFA	$\alpha = 0.82$	Krafft & Al-Khatib (2021)
Sociocultural Context	Cultural norms, trust, acceptance	4	5-point Likert	Structured questionnaire	CFA	$\alpha = 0.81$	Ahmed et al. (2022)
Health Promotion Effect.	Access, program impact, behavioral change	5	5-point Likert	Structured questionnaire	CFA	$\alpha = 0.88$	Anderson et al. (2021)

**Table 2.** Demographic characteristics

Variable	Category	Frequency	%	Mean (SD)	Min–Max
Age (years)	20–29	115	27.4	28.7 (±6.4)	20–58
	30–39	175	41.7		
	40+	130	30.9		
Gender	Male	220	52.4	–	–
	Female	200	47.6	–	–
Education Level	Diploma/Undergrad	140	33.3	–	–
	Postgraduate	210	50	–	–
	Doctoral	70	16.7	–	–
Employment Sector	Public health	190	45.2	–	–
	Private/NGO	150	35.7	–	–
	Unemployed	80	19.1	–	–
Work Experience	<5 years	120	28.6	9.3 (±6.8)	1–30
	5–10 years	160	38.1		
	>10 years	140	33.3		

**Table 3.** Reliability and Validity of Constructs

Variable	Items	$\alpha$	CR	AVE	rho_A	KMO	Bartlett's p
Policy Design & Clarity	5	0.879	0.905	0.623	0.861	0.812	<0.001
Implementation Mechanisms	5	0.865	0.894	0.611	0.846	0.801	<0.001
Stakeholder Participation	4	0.847	0.882	0.593	0.827	0.789	<0.001
Resource Allocation	5	0.86	0.892	0.608	0.843	0.794	<0.001
Governance Quality (Mod.)	4	0.835	0.873	0.589	0.819	0.776	<0.001



Sociocultural Context (Mod.)	4	0.823	0.867	0.574	0.808	0.764	<0.001
Health Promotion Eff.	5	0.892	0.919	0.648	0.879	0.833	<0.001

**Table 4.** Correlation Matrix of Variables

Variable	1	2	3	4	5	6	7	VIF
Policy Design	1							1.82
Implementation	.426**	1						1.96
Stakeholder Participation	.402**	.417**	1					1.77
Resource Allocation	.418**	.442**	.395**	1				2.01
Governance Quality	.335**	.322**	.312**	.348**	1			1.65
Sociocultural Context	.318**	.307**	.292**	.325**	.379**	1		1.73
Health Promotion Eff.	.525**	.492**	.479**	.509**	.392**	.378**	1	-

**Table 5.** Multiple Regression on Health Promotion Effectiveness

Predictor	$\beta$	SE	t-value	Sig. (p)	95% CI
Policy Design & Clarity	0.271	0.05	5.42	<0.001	0.173–0.369
Implementation Mechanisms	0.246	0.055	4.47	<0.001	0.138–0.354
Stakeholder Participation	0.214	0.052	4.12	<0.001	0.112–0.316
Resource Allocation	0.267	0.048	5.56	<0.001	0.173–0.361

**Table 6.** Moderation Effects of governance quality

Predictor > Gov. Quality	$\beta$	Std. Error	t-value	Sig. (p)	$\Delta R^2$
Policy Design > Governance	0.112	0.036	3.11	0.002	0.022
Implementation > Governance	0.098	0.034	2.88	0.004	0.019
Stakeholder > Governance	0.094	0.032	2.94	0.003	0.018
Resource > Governance	0.121	0.037	3.27	0.001	0.024

**Table 7.** Moderation Effects of Sociocultural Context

Predictor > Sociocultural	$\beta$	Std. Error	t-value	Sig. (p)	$\Delta R^2$
Policy Framework $\times$ Socio	0.108	0.035	3.09	0.002	0.021
Resource Allocation $\times$ Socio	0.096	0.033	2.91	0.004	0.018

**Table 8.** model fit summary

Statistic	Value	Reference Cut-off	Interpretation
R <sup>2</sup>	0.449	>0.30	Acceptable
Adjusted R <sup>2</sup>	0.442	>0.30	Good
F-statistic	84.25	p < 0.05	Significant
Durbin-Watson	1.94	1.5–2.5	No autocorrelation

**Table 9.** ANOVA results by socioeconomic group

Dependent Variable	SES Group	Mean Score	SD	F-value	Sig. (p)	Post-hoc (Tukey)
Health Promotion Eff.	Low	3.45	0.64	13.92	<0.001	Low < Middle < High
	Middle	3.82	0.59			
	High	4.18	0.54			

**Table 10.** Hypotheses Testing Results

Statement	Result	Evidence
Policy design > Health promotion effectiveness	Support	$\beta = 0.278, p < 0.001$
Implementation > Health promotion effectiveness	Support	$\beta = 0.242, p < 0.001$
Stakeholder > Health promotion effectiveness	Support	$\beta = 0.215, p < 0.001$
Resource > Health promotion effectiveness	Support	$\beta = 0.261, p < 0.001$
Governance moderations	Support	$\beta = 0.094-0.121, p < 0.01$
Sociocultural moderations	Support	$\beta = 0.096-0.108, p < 0.01$

**Table 11.** Variance explained by predictors and moderators

Model Step	R <sup>2</sup>	$\Delta R^2$	F	Sig.	Interpretation
Direct Effects	0.449	-	84.25	<0.001	Strong model
Moderation Effects	0.507	0.058	14.33	<0.001	Added value
Final Model	0.507	-	-	-	Stable & robust

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