

Original Article

Investigating Attraction Status and Development Countermeasures of Public Health Professionals in Rural and Peri-Urban: A Parallel Mediation Effects

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Abstract: Public health professionals in developing countries face a myriad of challenges that impede their ability to effectively address health issues and promote well-being. These challenges stem from limited resources, including financial constraints, insufficient healthcare infrastructure, and shortages of trained personnel. Following backdrops, this study aims to explore the role of current work environment status on public health professionals' attractions and retention in Tanzanian urban and peri urban, to investigate the influence of local environment status on public health professionals' attractions status and development countermeasures in Tanzanian urban and peri urban. Using a multivariate analysis, PLS-SEM, the study implemented this method to answer the research aims. The findings revealed that the local environment is directly associated with the worker's retention of the public health professionals in Kilimanjaro, Tanzania. At the same time, individual factors fully mediate the relationship between the local environment and working environment on worker retention along the urban and preurban. Interestingly, the regulatory framework partially mediates the local and working environment of worker retention in Kilimanjaro, Tanzania. This study has both theoretical and practical implications. The study underscores the importance of environmental factors, including both the local environment and the working environment, in shaping worker retention. It emphasizes the role of contextual factors beyond individual characteristics and organizational factors in influencing retention outcomes.

Keywords: Local Environment, Working Environment, Regulatory Framework, Individual Factors, Workers Retention, Tanzania.

I. INTRODUCTION

Access to quality healthcare is essential for population health and well-being, yet rural and peri-urban areas often face significant challenges in attracting and retaining public health professionals. These regions frequently experience disparities in healthcare access and outcomes compared to urban areas, exacerbated by factors such as limited healthcare infrastructure, workforce shortages, and socioeconomic barriers (Blaauw et al., 2010; Steinmetz et al., 2014). Public health professionals play a crucial role in addressing these disparities by providing essential health services, promoting preventive measures, and addressing community health needs (Jurmin & Jariya, 2023). However, recruiting and retaining qualified public health professionals in rural and peri-urban settings remains a persistent challenge. Despite recognition of the importance of public health professionals in rural and peri-urban areas, there is a notable gap in understanding the factors influencing their attraction and retention in these underserved regions.

Existing literature has highlighted various barriers, including limited career advancement opportunities, lower salaries, insufficient support services, and the impact of lifestyle preferences on recruitment and retention efforts (Maclaren et al., 2022). However, there remains a need for empirical research to comprehensively investigate the attraction status of public health professionals in rural and peri-urban areas, as well as to identify effective development countermeasures to address workforce shortages and improve healthcare access in these regions. Therefore, the main goal of this study is to determine the mediation effects of the regulatory framework in the relationship between working and local environment on worker retention. Second, to examine the mediation effects of individual factors in the relationships between local and working environments on worker retention. By filling this gap, research can inform evidence-based policies and interventions aimed at enhancing the recruitment, retention, and professional development of public health professionals in underserved areas, improving health outcomes, and reducing disparities in access to healthcare services.

The study deployed PLS-SEM to answer the above aims. The study uses its strengths in exploring complex relationships, accommodating exploratory research objectives, and providing robust assessments of measurement and structural models (Hair et al., 2012; Henseler et al., 2016). Through this approach, the study aims to generate valuable insights into the



attraction status and development countermeasures of public health professionals in rural and peri-urban areas, contributing to evidence-based strategies for improving healthcare workforce dynamics and addressing disparities in healthcare access and outcomes. The study is organized as follows: the study fleshes out a literature review, results, and discussions and closes with the conclusion.

II. LITERATURE REVIEW

This conceptual framework illustrates attraction factors and workers' retention in Tanzanian rural areas. It shows their main building blocks of attraction factors (work environment, local environment, regulatory framework, individual factors) and worker retention factors.

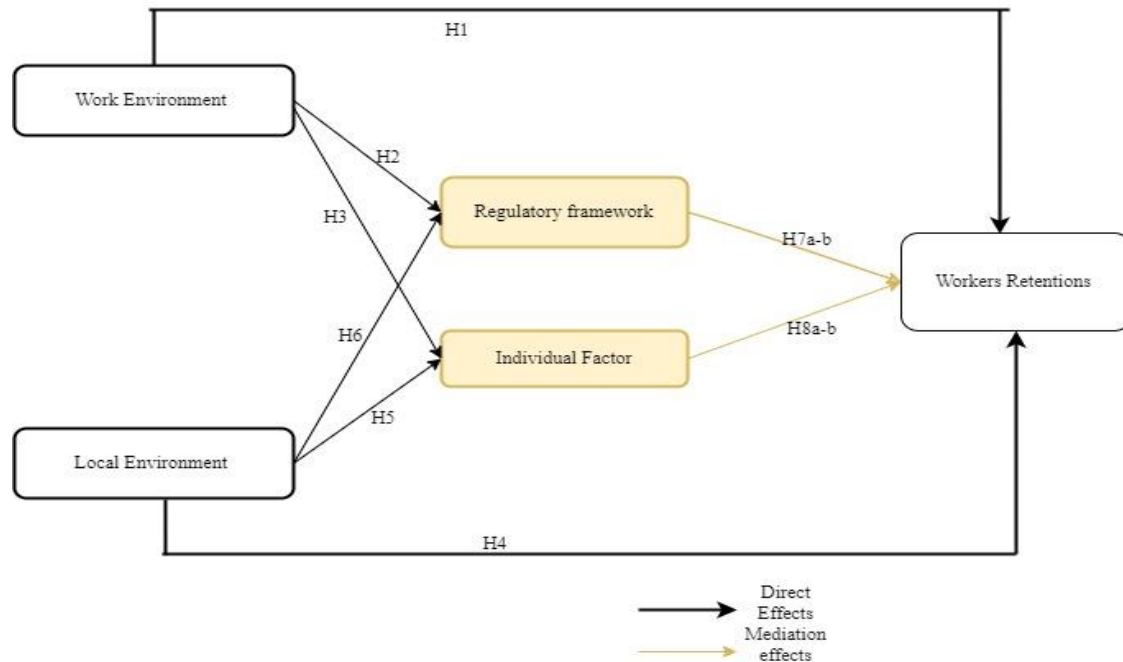


Fig 1. Conceptual research framework

The study presented the Figure 1 shows the relationship between the attraction status factors of the public health professionals in the Tanzania context, and the study evaluated the above complex relationship through the PLS-SEM, which is more suitable for non-normal data.

A) Hypotheses Development

a. Work Environment and Worker Retentions

The relationship between the work environment of public health professionals and retention is of paramount importance in the context of developing countries, where unique challenges and dimensions come into play. In these settings, job satisfaction among public health professionals is closely tied to factors such as resource availability, workload, and the overall work environment. Developing countries often face resource constraints, and public health professionals may experience job dissatisfaction when resources are insufficient for effective service delivery (Teng et al., 2019; Verma et al., 2016). Work-life balance becomes a critical dimension as professionals in these settings may face heavy workloads and challenging conditions. Leadership and management practices, particularly in the public sector, can significantly influence retention. Transparent and supportive leadership, despite limited resources, can positively affect job satisfaction. Professional development opportunities are crucial dimensions, and in resource-constrained environments, access to training and skill enhancement can be a challenge (Parker et al., 2012; Holloway et al., 2020). Recognition and rewards, within the constraints of budget limitations, play a vital role in keeping public health professionals. Workplace culture, often shaped by societal norms and economic conditions, influences how professionals perceive their roles and contributions. Job security and stability, given economic uncertainties, also weigh heavily in retention decisions. Despite these challenges, creating a positive and supportive work environment remains essential for retaining public health professionals in developing countries, emphasizing the importance of addressing unique dimensions within resource limitations. Therefore, the study hypothesizes that;

Hypothesis 1: There is a positive significant relationship between the work environment and retention of public health professionals.

Hypothesis 2: There is a positive significant relationship between the work environment and regulatory framework.

Hypothesis 3: There is a positive significant relationship between work environment and individual factors.

b. Local environment and workers retention

Following the working environment, the local environment plays a crucial role in the retention of employees, including public health professionals. Several dimensions within the local environment can significantly influence retention: The level of support and engagement from the local community can impact how public health professionals feel about their work. A positive relationship with the community can enhance job satisfaction and contribute to long-term retention. The availability of resources in the local environment, such as healthcare facilities, educational institutions, and other essential services, can influence the quality of life for public health professionals (Haskins et al., 2013; Jurmin & Jariya, 2023). Adequate access to resources contributes to job satisfaction and retention. The extent to which public health professionals can collaborate with local organizations, community leaders, and other stakeholders can influence their sense of belonging and impact retention (Morell et al., 2014). Collaborative efforts can create a supportive work environment. Factors related to the overall quality of life in the local environment, including housing, transportation, and recreational opportunities, can influence retention. Professionals are more likely to stay in areas where they can maintain a satisfactory quality of life (Holloway et al., 2020; Hatcher et al., 2014).

The local environment's impact on work-life integration, including commuting time and proximity to essential services, affects how public health professionals balance their personal and professional lives. A conducive local environment can contribute to higher retention rates. The cultural alignment between public health professionals and the local community can impact how well they integrate into the environment. A positive cultural fit enhances job satisfaction and, consequently, retention. The availability of career advancement opportunities within the local area can influence professionals' decisions to stay or seek opportunities elsewhere (Maclaren et al., 2022). Access to professional growth and development can contribute to long-term retention. The overall safety and security of the local environment are critical for retention. Professionals are more likely to stay in areas where they feel secure and supported, both in their workplaces and communities (Jooste & Hamani, 2017). Addressing these dimensions within the local environment is essential for organizations and policymakers seeking to improve retention rates among public health professionals. A comprehensive approach that considers the unique characteristics and needs of the local context can contribute to creating a supportive and conducive environment that fosters employee satisfaction and long-term commitment. Thus, the study hypothesizes that;

Hypothesis 4: There is a positive relationship between the local environment and worker retention.

Hypothesis 5: There is a positive relationship between the local environment and the regulatory framework.

Hypothesis 6: There is a positive relationship between the local environment and individual factors of public health professionals.

c. Mediation Effects (Regulatory)

The regulatory framework within which public health professionals operate can significantly impact their retention within an organization or a specific sector. Several key dimensions highlight the relationship between the regulatory environment and retention: Regulatory requirements for licensing and certification in the public health sector can influence professionals' decision to stay. Clear and transparent processes for obtaining and maintaining licenses may contribute to job security and retention (Chilvers et al., 2019; Huicho et al., 2010). Regulatory frameworks that emphasize ongoing professional development through continuing education requirements can impact retention. Professionals are more likely to stay in environments that support and help their continued learning and skill enhancement. A regulatory environment that ensures compliance with standards and holds individuals and organizations accountable for their actions can contribute to a sense of stability and professionalism. Professionals may be more inclined to stay in settings where regulations are enforced consistently. Adherence to ethical standards and guidelines within the regulatory framework is crucial for creating a positive work environment. Professionals are likely to be retained in settings where ethical considerations are prioritized and integrated into daily practices (Campbell. et al., 2016; Ojakaa et al., 2014). Regulatory measures addressing safety and occupational health can impact professionals' well-being and job satisfaction. Environments that prioritize safety through compliance with regulations may contribute to increased retention. Regulatory frameworks related to compensation and benefits, including minimum wage standards and employee benefits, play a role in retention. Compliance with fair compensation regulations contributes to the financial stability and satisfaction of professionals.

Moreover, the regulatory measures that safeguard worker rights and protections, such as anti-discrimination policies and labor laws, contribute to a positive work environment. Professionals may be more likely to stay in organizations that prioritize and adhere to these regulations. The regulatory environment surrounding job security, including guidelines for

termination and dismissal, can influence professionals' sense of stability. Clear regulations that provide job security contribute to higher retention rates. Regulatory frameworks that support work-life balance through policies such as flexible working arrangements and family leave contribute to a positive individual environment. Professionals may be more inclined to stay in organizations that adhere to such regulations. Regulations addressing health and safety standards within the workplace are crucial for professionals' well-being (Ditlopo et al., 2013; Dolea et al., 2010). Compliance with health regulations can positively impact retention by creating a safe and supportive work environment. In summary, understanding and aligning with the regulatory framework is essential for organizations and policymakers seeking to enhance retention rates among public health professionals. Ensuring that regulations support a positive and compliant work environment can contribute to the overall job satisfaction and commitment of professionals within the sector.

The regulatory framework profoundly influences the working environment of public health professionals by establishing guidelines, standards, and policies that govern various aspects of their work. These regulations encompass health and safety standards, licensing and certification requirements, ethical standards, quality assurance mechanisms, resource allocation, and data collection protocols. Compliance with these regulations ensures that public health professionals operate in safe environments, possess the necessary credentials and competencies, adhere to ethical guidelines, deliver high-quality services, and utilize resources effectively. Additionally, regulatory frameworks contribute to the credibility, reliability, and professionalism of the public health workforce by promoting accountability, integrity, and transparency in practice. By providing a supportive regulatory environment, policymakers and regulatory bodies play a critical role in fostering a conducive working environment for public health professionals, enhancing their ability to protect and promote the public's health. Thus, the study hypothesizes that;

Hypothesis 7a: Regulatory framework mediates the effects of working environment on workers retention.

Hypothesis 7b: Regulatory framework mediates the effects of local environment on workers retention.

d. Mediation Effects (Individual Factors)

The individual environment, encompassing factors related to an employee's personal experiences, needs, and circumstances, plays a significant role in the retention of public health professionals. Several dimensions within the individual environment can influence the decision of professionals to stay in their current positions. The availability of opportunities for professional growth and skill development is crucial for individual retention. Public health professionals are more likely to stay when they see prospects for advancing their careers and expanding their expertise (Anand & Bärnighausen, 2004; Visagie & Pillay, 2017; Zhang & Chen, 2023). Feeling valued and recognized for one's contributions is a key aspect of the individual environment. Regular acknowledgement of accomplishments and efforts enhances job satisfaction and contributes to long-term retention. The individual environment heavily influences work-life balance. Factors such as flexible work arrangements, support for family responsibilities, and reasonable work hours contribute to professionals' overall satisfaction and retention. The extent to which an individual's skills, interests, and values align with the job requirements influences retention. A good fit between an employee and their role contributes to job satisfaction and commitment to staying with the organization.

The individual environment includes considerations for the health and well-being of public health professionals. Access to healthcare services, wellness programs, and mental health support can impact job satisfaction and, consequently, retention. Public health professionals value autonomy and empowerment in their roles. When individuals feel they have the authority to make decisions and contribute meaningfully, it enhances job satisfaction and increases the likelihood of retention (Blaauw et al., 2010; Khamisa et al., 2017; Steinmetz et al., 2014). Positive relationships with colleagues, supervisors, and team members contribute to a supportive individual environment. Strong team dynamics and a sense of camaraderie foster a positive workplace culture that encourages professionals to stay. The individual environment is influenced by compensation and benefits, which play a role in an employee's overall satisfaction. Competitive and fair remuneration contributes to the financial well-being of professionals and impacts their decision to stay with an organization. The level of inclusivity and diversity within the workplace is essential for the individual environment. Professionals are more likely to stay in environments that embrace diversity and create a sense of belonging for all employees (Morell et al., 2014). Addressing these dimensions within the individual environment is crucial for organizations aiming to improve retention rates among public health professionals. Recognizing and responding to the unique needs and preferences of individuals contributes to creating a workplace that fosters satisfaction and long-term commitment.

Individual factors mediate the relationship between the local environment and the working environment on retention by influencing how public health professionals perceive and respond to their work environment. These individual factors include personal characteristics, values, beliefs, and experiences that shape individuals' attitudes, behaviors, and decisions regarding their employment. For example, factors such as demographics (age, gender, education), personality traits, career aspirations, family obligations, and job satisfaction can influence how public health professionals experience and interact

with their local and working environments. Individuals may perceive the local environment, including factors such as community amenities, cultural diversity, cost of living, and social support networks, differently based on their personal preferences and priorities. Similarly, their satisfaction with the working environment, including factors such as organizational culture, leadership, workload, and opportunities for growth, may be influenced by individual characteristics and experiences. For instance, public health professionals who prioritize work-life balance may be more satisfied with flexible work arrangements. In contrast, those who value professional development opportunities may prioritize organizations that offer training and advancement opportunities.

Furthermore, individual factors can mediate the impact of the local and working environments on retention by influencing how individuals interpret and respond to environmental factors. For example, public health professionals who are highly motivated by intrinsic factors such as a sense of purpose or social impact may be less affected by external factors such as salary or location. Similarly, individuals with strong social support networks or coping skills may be better equipped to navigate challenges in the working environment, such as high workload or organizational changes, thereby mitigating the impact on retention. Overall, individual factors play a crucial role in mediating the relationship between the local environment, working environment, and retention among public health professionals by shaping their perceptions, preferences, and responses to their environments. Understanding these individual factors is essential for designing effective retention strategies that address the diverse needs and priorities of the public health workforce. Therefore, the study hypothesize that;

Hypothesis 8a: Individual factors mediate the effects of working environment on workers retention.

Hypothesis 8b: Individual factors mediate the effects of local environment on workers retention.

III. RESULTS AND DISCUSSION

A) Measurement Model Summary

Table 1: Measurement model summary and inner summary

	weight	loading	Commu	redundancy	C. alpha	DG. rho	AVE
Working E							
1 WE1	0.151	0.879	0.773	0.000	0.855	0.902	0.698
1 WE2	0.143	0.860	0.739	0.000			
1 WE3	0.131	0.794	0.631	0.000			
1 WE4	0.146	0.805	0.647	0.000			
Local E							
2 LE1	0.147	0.812	0.659	0.000	0.837	0.891	0.672
2 LE2	0.139	0.775	0.601	0.000			
2 LE3	0.168	0.872	0.761	0.000			
2 LE4	0.156	0.818	0.669	0.000			
RF							
3 RF1	0.194	0.760	0.577	0.319	0.835	0.891	0.665
3 RF2	0.142	0.851	0.724	0.401			
3 RF3	0.139	0.831	0.691	0.382			
3 RF4	0.151	0.818	0.668	0.370			
IF							
4 IFA	0.144	0.859	0.737	0.294	0.910	0.937	0.788
4 IF2	0.148	0.896	0.803	0.321			
4 IF3	0.160	0.923	0.852	0.340			
4 IF4	0.159	0.871	0.759	0.303			
WR							
5 MTV1	0.163	0.863	0.744	0.395	0.889	0.923	0.750
5 MTV2	0.147	0.883	0.780	0.414			
5 MTV3	0.159	0.903	0.816	0.432			
5 MTV4	0.141	0.813	0.661	0.350			

Note: Comm=Communality, WR=workers retention, IF=Individual Factors, RF=regulatory Framework,

LE=Local Environment, WE=Working Environment, AVE=Average variance extracted. alpha=Cronbach's Alpha, DG. Rho=Dillon Goldstein rho

Table 1 presented the outer weight of the manifest variables, and the findings suggested that loadings (lambdas) for the measurement model were above 0.5. Therefore, the study factor loadings stand for the strength and direction of the relationship between each observed variable and its corresponding latent construct. Higher factor loadings as proved to be above the required guidelines; therefore, it indicates stronger relationships and suggests that the observed variables are good indicators of the underlying constructs. Furthermore, the study evaluated the composite reliability of Dillon Goldstein rho; the value is above the required thresholds. The internal consistency was evaluated through Cronbach's Alpha, the constructs are above 0.7. Therefore, construct validity is acceptable (Henseler et al., 2016). After confirming the measurement model summary, it is worth navigating the internal relationship between attraction factors and the worker's retention of public health professionals in Tanzania.

Table 2: Structural Model Summary

	β	Mean.B	Std.E	perc.025	perc.975
WE -> RF	0.3872	0.3899	0.0764	0.2371	0.536
WE -> IF	0.3337	0.3363	0.0898	0.1569	0.509
WE -> WR	0.0561	0.0557	0.0787	-0.1016	0.208
LE -> RF	0.3950	0.3945	0.0763	0.2458	0.544
LE -> IF	0.3309	0.3302	0.0869	0.1586	0.500
LE -> WR	0.4039	0.4050	0.0750	0.2579	0.550
RF -> WR	0.0843	0.0841	0.0873	-0.0865	0.259
IF -> WR	0.2750	0.2747	0.0709	0.1358	0.414
RF: $R^2=0.63$ IF: $R^2=0.51$ WR: $R^2=0.64$	GoF=0.60				

Notes: R^2 =Coefficient Determination, GoF= Goodness of the fit Improvement Index, β =Beta value, Mean.B=Mean Boot, Std.E=Standard Error

Table 2 presents the structural summary of the tested conceptual framework that shows the pattern of effects between the working environment factors and workers retention of the public health professionals' retention in Tanzania. The path that links the working environment and workers' retention has the beta value of the medium beta value of (Hypothesis 1: $\beta=0.056$; BCI .025=-0.101; BCI .097=0.20); thus, it partially supported hypothesis one that there is a positive significant relationship between work environment and retention of public health professionals. Regulatory frameworks influence the working environment with the beta value of (Hypothesis 2: $\beta=0.38$; BCI .025=-0.237; BCI .097=0.53), which supported hypothesis two that there is a positive significant relationship between work environment and regulatory framework. The link that connects the working environment and individual factor has the same beta value scores compared to the former link (Hypothesis 3: $\beta=0.333$; BCI .025=0.156; BCI .097=0.509). Therefore, it supported hypothesis three that there is a positive significant relationship between work environment and individual factors.

On the other hand, the study tested the conceptual framework to examine the direct relationship between the local environment and workers' retention to test hypothesis 4. The findings show that the local environment has a direct significant relationship with workers' retention with the strong beta value of (Hypothesis 4: $\beta=0.403$; BCI .025=0.25; BCI .097=0.55); thus, it supported hypothesis 4 that there is a positive relationship between local environment and workers retention. Moreover, the study tested the relationship between the local environment and regulatory framework to debunk the hypothesis 4 results. There is a strong direct relationship between the local environment and the regulatory framework with the beta value of (Hypothesis 5: $\beta=0.395$; BCI .025=0.24; BCI .097=0.544); thus, it supported hypothesis 5 that There is a positive relationship between local environment and regulatory framework. About hypothesis 6, the link shows the patterns of relationships between the local environment and individual factors with a medium beta value of (Hypothesis 6: $\beta=0.330$; BCI .025=0.158; BCI .097=0.500). Therefore, the result provides support for hypothesis 6 that there is a positive relationship between the local environment and individual factors of public health professionals.

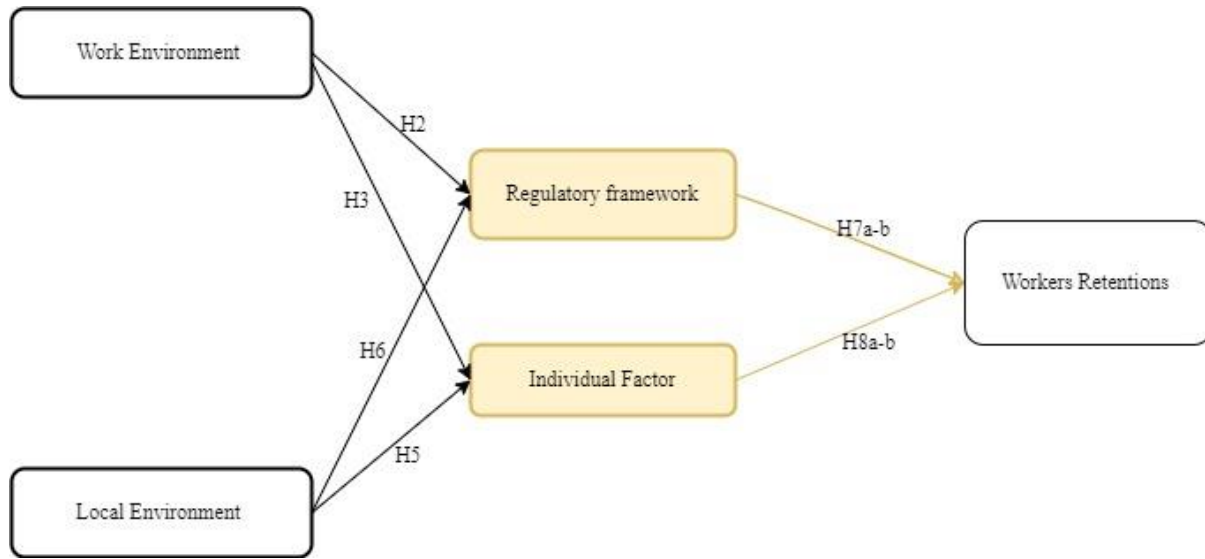


Fig. 2 Mediation Relationship

Figure 2 above s presented parallel mediation effects, and the results demonstrated the mixed findings on the regulatory framework and individual factors mediate the effects of working environment and local environment on workers retention. It turned out that individual factors played full mediation effects of work environment and local environment on worker retention with the following beta values. Individual factors mediate the effects of the working environment on workers' retention with the beta value of (Hypothesis 8a: $\beta = 0.333$; BCI .025=0.156; BCI .097=0.509). Thus, it supported hypothesis 8a that individual factors mediate the effects of working environment on workers retention. At the same time, individual factor mediates the effects of the local environment on workers' retention with the beta values of (Hypothesis 8b: $\beta = 0.330$; BCI .025=0.158; BCI .097=0.500); in that sense, it supported hypothesis 8a that Individual factors mediate the effects of local environment on workers retention. But I addition to that, the link between individual factors and worker retention has been proven to be significant at 95% CI with the beta value of ($\beta = 0.27$; BCI .025=0.135; BCI .097=0.414). The individual factors have strongly demonstrated that has fully mediated the effects between local and working environments on workers' retention. Put differently, the link between regulatory factors and attraction factors sheds light on the contradiction mediation effects. Although the direct effects between the local environment and working environment on a regulatory framework have a strong direct effect, as illustrated in Table 5.8. For example, the link between the working environment and regulatory factors has a medium beta value of (Hypothesis 7a: $\beta = 0.387$; BCI .025=0.237; BCI .097=0.536), and the link between the local environment and regulatory framework has a beta value of (Hypothesis 7b: $\beta = 0.395$; BCI .025=0.248; BCI .097=0.544). Of course, the two paths are significant after resampling methods of 95 CI; however, the link that connects between regulatory framework and worker retention has a negative value at the lower boundary and a small beta value of ($\beta = 0.084$; BCI .025=-0.086; BCI .097=0.259). Given the fact that the study hypotheses have stated in a positive direction, it is fair to argue that the regulatory framework is partially mediates the effects of local and working environments on worker retention.

IV. CONCLUSION

The study's findings partially support hypothesis one, showing a positive relationship between the work environment and the retention of public health professionals, but the relationship may not be statistically significant. This suggests that while there is a positive trend between the quality of the work environment and retention rates, the relationship may be influenced by other factors not accounted for in the analysis. Reasons for the partial support could include the presence of mediating or moderating variables that affect the relationship between work environment and retention, such as individual factors (e.g., job satisfaction, career opportunities) or organizational factors (e.g., leadership, organizational culture). Further research may be needed to explore these added factors and their impact on retention among public health professionals (Anyangwe & Mtonga, 2007). Overall, the partial support for hypothesis One highlights the complexity of the relationship between work environment and retention and underscores the importance of considering multiple factors in understanding and addressing retention issues within the public health sector.

The study findings support hypothesis two, showing a positive and statistically significant relationship between the work environment and the regulatory framework. This suggests that the quality of the work environment is positively influenced by the regulatory framework governing public health practices. The presence of strong regulatory frameworks, which establish guidelines, standards, and policies for public health practice, appears to contribute to a more favorable work environment for public health professionals. Such frameworks may provide clarity, structure, and support for public health

initiatives, fostering a culture of compliance, accountability, and professionalism within the workforce. These findings underscore the importance of robust regulatory frameworks in shaping the work environment and ensuring the effectiveness and integrity of public health practices (Borst et al., 2019). They highlight the symbiotic relationship between the regulatory environment and the quality of the work environment, emphasizing the need for ongoing efforts to strengthen regulatory oversight and support the well-being of public health professionals.

The findings of the study support hypothesis three, indicating a positive and statistically significant relationship between work environment and individual factors. This suggests that the quality of the work environment has a positive influence on individual factors, such as job satisfaction, motivation, and well-being. The results imply that when public health professionals perceive their work environment positively, it enhances their overall satisfaction, motivation levels, and well-being, which can ultimately contribute to higher job performance and retention within the public health sector. This finding underscores the importance of creating conducive work environments that prioritize factors such as organizational culture, leadership support, work-life balance, and professional development opportunities to promote the well-being and satisfaction of public health professionals.

The study findings support hypothesis four, indicating a positive relationship between the local environment and workers' retention. This suggests that aspects of the local environment, such as community amenities, social support networks, cost of living, and cultural factors, play a significant role in influencing the retention of workers, including public health professionals (Belita et al., 2013). A positive local environment can contribute to employees' overall satisfaction, well-being, and sense of belonging, which in turn may increase their likelihood of staying in their current positions. Factors such as access to quality healthcare, affordable housing, recreational opportunities, and a supportive community can enhance employees' quality of life and job satisfaction, leading to greater retention rates. These findings underscore the importance of considering the broader context of the local environment in strategies aimed at retaining workers in the public health sector. They highlight the need for collaborative efforts between employers, policymakers, and community stakeholders to create supportive local environments that promote the retention and well-being of workers.

The study findings support hypothesis five, indicating a positive relationship between the local environment and the regulatory framework. This suggests that aspects of the local environment, such as community amenities, cultural factors, and social dynamics, are positively associated with the regulatory framework governing public health practices. A supportive local environment may contribute to the development and implementation of robust regulatory frameworks by fostering collaboration, engagement, and compliance among stakeholders. Conversely, a strong regulatory framework can enhance the local environment by promoting public health, safety, and well-being within the community. These findings highlight the interconnectedness between the local environment and the regulatory framework, emphasizing the importance of considering both factors in efforts to promote public health and sustainable development (Breagh et al., 2018). They underscore the need for coordinated actions and partnerships between local authorities, regulatory agencies, community organizations, and other stakeholders to create environments that support effective regulation and positive health outcomes for all.

The study findings provide support for hypothesis six, indicating a positive relationship between the local environment and individual factors of public health professionals. This suggests that aspects of the local environment, such as community amenities, social support networks, and cultural factors, have a positive influence on individual factors such as job satisfaction, motivation, and well-being among public health professionals. A supportive local environment can enhance the quality of life and job satisfaction of professionals, leading to greater motivation, engagement, and overall well-being. Factors such as access to recreational opportunities, affordable housing, quality healthcare, and a strong sense of community can contribute to a positive work-life balance and job satisfaction among public health professionals. These findings underscore the importance of considering the local environment in efforts to support the well-being and retention of public health professionals. They highlight the need for strategies that promote collaboration between local stakeholders, employers, and policymakers to create environments that foster the professional development, satisfaction, and overall well-being of public health professionals.

The study findings support hypothesis 8a, indicating that individual factors mediate the effects of the working environment on worker retention. This suggests that factors such as job satisfaction, motivation, and personal well-being play a significant role in influencing the relationship between the quality of the working environment and worker retention. Specifically, public health professionals' perceptions of their working environment may impact their job satisfaction, motivation levels, and overall well-being, which in turn influence their decision to stay or leave their positions. These individual factors serve as mechanisms through which the working environment affects worker retention, highlighting the importance of considering both organizational and individual factors in efforts to promote retention within the public health sector (Dolea et al., 2010). These findings underscore the need for targeted interventions and support programs that address individual needs and enhance job satisfaction, motivation, and well-being among public health professionals to improve retention rates.

The study findings suggest that individual factors partially mediate the effects of both the local environment and the working environment on worker retention. This indicates that while aspects of the local and working environments have direct effects on retention, these effects are also partially explained by individual factors such as job satisfaction, motivation, and personal well-being. In other words, individual factors serve as intermediate variables through which the local and working environments influence retention. This partial mediation implies that other factors beyond individual factors also contribute to the relationship between the environments and retention. These could include organizational factors, job characteristics, career opportunities, and external factors such as economic conditions or policy changes (Ojakaa et al., 2014). Understanding the complex interplay between these factors is essential for developing effective strategies to improve worker retention in the public health sector. These findings highlight the importance of considering both environmental and individual factors in retention efforts. Addressing issues related to the local and working environments while also promoting job satisfaction, motivation, and well-being among workers can help create a supportive and conducive context for keeping public health professionals.

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