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Innovation Prospects of Combined Government Office Buildings in the District Level of Bangladesh: A Spatial Analysis

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Abstract

Innovative redistribution of government offices into a single premise may ensure government efficiency, resource optimization, and quality citizen-centric services in the public sector of Bangladesh. A recent initiative reflecting this trend is the construction of combined government office buildings in some districts, consolidating multiple district-level offices into a single integrated facility. This study, in this regard, investigates how such integration takes place with compare to the current spatial distributions. It will also assess whether such integration is able to simplify service for the citizens. To do so, three districts of Madaripur, Rangpur and Bogura under two categories have been taken as samples, mapping spatial distributions and measuring both distances and areas. Online feedback of the people of Madaripur district in the Google map has been taken into consideration to assess their perception of whether the Combined Government Office Building is citizen-centric. Finally, the findings indicate that integrated office buildings significantly reduce land usage and distances among government offices. Also, it can simplify public service for the citizens, enhancing their satisfaction level regarding public service. Overall, the study demonstrates the potential for scaling up this model across all 64 districts of Bangladesh.

Keywords: *Combined Government Buildings; Spatial Distribution; Public Sector Innovation (PSI); Government Efficiency; Citizen-centric public services*

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Introduction

Combined Government Office Building in the district level has been a recent innovation in the public sector of Bangladesh. It has already been built in few districts of Bangladesh, enabling numbers of government offices to come under a single roof. The first ever district where such building has been built in 1 acre of land is Madaripur where nearly 40 government offices can be accommodated, and already around 30 offices have been incorporated ("মাদারীপুরে এক ভবনেই মিলবে সরকারি ৩০ দপ্তরের সেবা [In Madaripur, services of 30 government offices will be available in one building]," 2021). This study, in this regard, will explore the impact of such innovative project, especially the change in the current spatial distribution of the government offices in the district level, and the perception of the citizens about quality public service regarding the change.

Over past few decades, public sector in Bangladesh has been gradually advancing to build a new technology-driven public service delivery system, accommodating each and every citizen of the country in a single platform of public goods and service. The aim is to overcome digital divide and public harassment, bringing efficiency in service delivery, ensuring more accountability and transparency, and strengthening ties with local stakeholders in reaching the unreached. One of the popular innovations taken by the government of Bangladesh, for example, is the Union Digital Centers (UDCs), the first step towards digitization and digital public service at the grass-root. To evaluate the effectiveness and efficiency of the UDCs, Hasan (2015) concludes that it is one of the successful innovations by the government which not only ensures the best e-service delivery, but also brings in change in the lives of unreached.

However, Bangladesh is still lack in utilizing technologies like spatial data, or Geographical Information System (GIS) into its administrative mechanism for ensuring better public service. Although there are applications of such technologies in scientific arena namely land survey, meteorology, geology, management of public sector, or delivery of public goods and services to the citizens can be ensured as well. GIS can become instrumental in enhancing decision-making, service delivery, and citizen engagement by allowing governments to visualize, analyze, and manage data with geographical components. Countries across the globe have leveraged GIS in land management, urban planning, disaster response, and resource allocation, thereby making governance more efficient, transparent, and citizen-centric.

Till today, public sector of Bangladesh has been characterized by high operational costs, large manpower, and relatively low service outcomes, often criticized as a 'white elephant'. Currently, over 1.4 million government employees serve in the public sector (Rahat & Rahman, 2025). A significant portion of the national budget is allocated to personnel management such as recruitment, salaries, bonuses, training, and pensions, leaving limited resources for critical sectors like health and education. Data from the Ministry of Finance, Government of Bangladesh (n.d.) indicates that public administration has been consistently consuming the largest share of the national budget, averaging 20.3% over past eight fiscal years, nearly double the combined average allocation for education (14.63%) and health (5.16%) (Figure: 1).

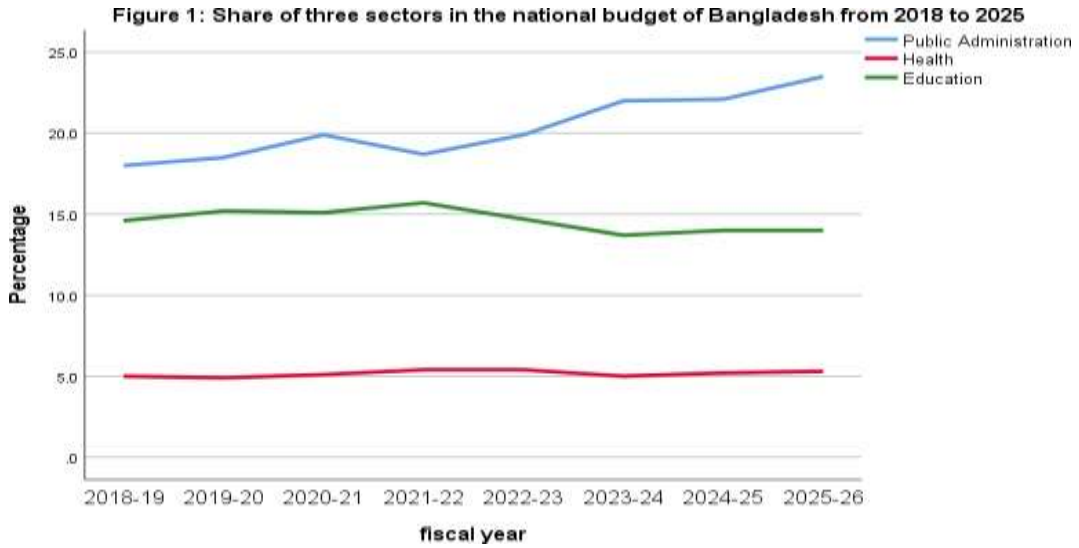

Figure 1: Share of three sectors in the national budget of Bangladesh from 2018 to 2025

Therefore, there need to be some effective solutions where integration of government buildings may be a potential initiative. Given the high scarcity of land in Bangladesh, integrated office complexes serve multiple governance purposes. They release valuable land for alternative uses, lower infrastructure costs, and promote efficient service delivery. Geospatial data, in this regard, may help a lot. It will not only result in cost savings but also strengthen citizen trust and engagement in public services.

Theoretical and Conceptual Framework

Tobler's First Law of Geography says that geographic phenomena are inherently spatial, and location fundamentally shapes relationships among places. Tobler (1970) quotes -"Everything is related to everything else, but near things are more related than distant things". This definition challenges the traditional approaches that observations are spatially independent. For example, population growth at a place is influenced by populations at nearby places. Tobler's argument is further extended by Miller (2004) by arguing that proximity is not necessarily limited to straight-line distance, but also to travel time, cost, accessibility, network connections, or space-time relationships. Overall, Tobler's key arguments premised upon the fact that space is not neutral, with relationships being distance-dependent, matters the geographic context.

Similarly, according to spatial auto-correlation model, spatial data are rarely independent; with nearby locations often influence one another. Getis (2008), in this regard, emphasizes that it helps explain why spatial patterns such as clustering, dispersion, and gradients occur in the mapped data. Spatial auto-correlation can be both positive and negative, with neighboring locations exhibit both similar and dissimilar values (Lee & Wong, 2001). Furthermore, properties located close to one another tend to share similar structural features, accessibility conditions, and neighborhood amenities (Ismail, 2005).

Hierarchical model focuses on how public services operate in layered systems. According to Tao et al. (2020), facilities at different levels provide different types and magnitude of services. Lower-level facilities like primary healthcare centers or community schools, for example,

provide basic and frequently used services to local people while higher level facilities like tertiary hospitals and universities provide specialized and less frequently used services to the masses. Bypassing this hierarchy may lead to unrealistic results about service use and accessibility. Meanwhile, different hierarchical levels should be planned simultaneously rather than sequentially, with Hodgson (1984) give example that locating primary facilities first and then higher-level facilities often results in suboptimal spatial configurations.

Local Indicators of Spatial Association (LISA) model argues that, while global measures such as Moran's I summarize spatial autocorrelation across an entire region, they often overlap localized clusters, outliers, and spatial heterogeneity (Anselin, 1995). According to Anselin (1995), different locations may follow different spatial dynamics. Therefore, LISA model proposes a class of statistics designed to identify local pockets of spatial association, allowing researchers to move beyond a single global summary and examine how spatial relationships vary from place to place.

Finally, regarding the citizens, argues that, the New Public Governance (NPG) framework emphasizes collaboration, networks, and co-production of services (Osborne, 2010). Torfing and Triantafillou (2013) also say that, NGP relies on cooperation, negotiation, and stakeholder involvement in policymaking and service delivery instead of hierarchical command or market-driven competition. Krogh and Triantafillou (2024), on the other hand, argue that, NPG is shift away from both Traditional Public Administration (TPA) and New Public Management (NPM), introducing an alternative paradigm that emphasizes the role of networks, collaboration, and inter-organizational partnerships in governance.

Methodology

As a research sample, three districts of Madaripur, Rangpur and Bogura are taken under two categories (Figure 2). Madaripur district has a combined government office building while both Rangpur and Bogura district have the traditional office distributions. Both Rangpur and Bogura districts are taken purposively, representing almost all the districts of Bangladesh. As districts are the basic functional units of the field administration of Bangladesh, with similar structures and functions, they seem to be highly homogenous. Therefore, this study believes that selecting two districts is well enough to explain the population parameter.

This study mostly deals with geo-special metric data of location and distances, which is numerical. So, in this regard, this study is quantitative in nature. Moreover, this study rates the satisfaction level of the citizens of Madaripur district regarding the service of combined government building. Here, this study is qualitative in nature. Therefore, this study follows mix method as part of its research methodology.

To locate the similar offices in both Rangpur and Bogrua in the Google map, this study commonly finds 17 of them. Therefore, the sample size of the study is 17 which represent around 59% of the total offices, or 42.5% of the total accommodation of the combined government office Building in

Madaripur, where nearly 40 government offices can be accommodated, with currently holding 29

offices. Finally, to study the perceptions of the citizens of Madaripur regarding the combined government building, this study takes 15 reviews available in the Google map.

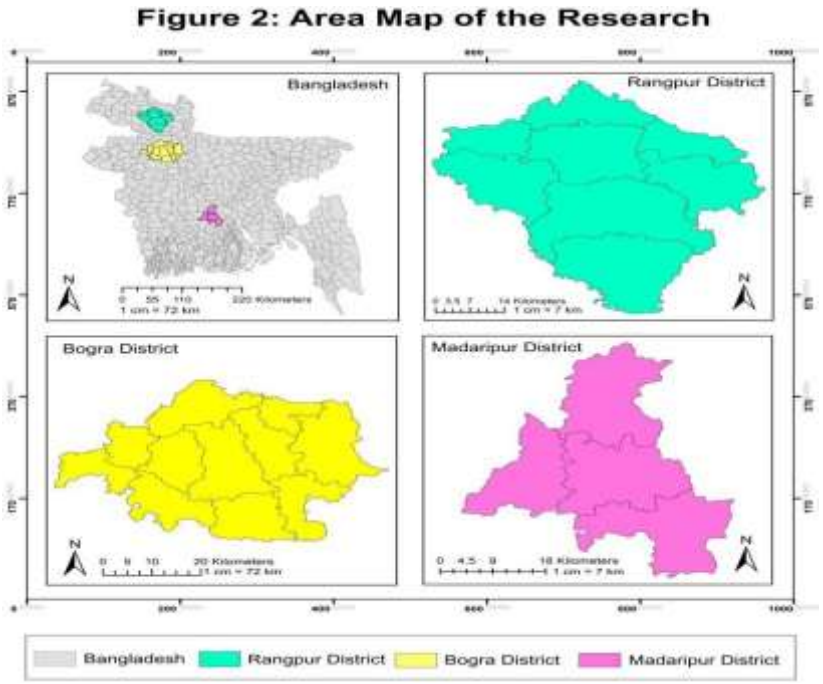

Figure 2: Area map of the research

As a research tool, this study uses Kobo Toolbox to collect spatial data of the offices at both Rangpur and Bogura districts. For the analysis of data, it applies ArcGIS Pro software to measure distances and areas, that is, vector data of line and polygon. For both Rangpur and Bogura, the Office of the Deputy Commissioner (DC office) is taken as the center point of integration (0 km) from where relative distances of sampled offices are measured in kilometers. Areas of the premises of the sampled offices in both Rangpur and Bogura are also measured in acres. The special data is prepared and analyzed in SPSS following mean value, percentage and other outcomes. Geographical maps are also used while comparing and interpreting the data.

Key Findings

In Rangpur, the sampled offices are scattered across the city (Figure 3), with minimum distance on .1 km to maximum of 3.60 km from the DC office. While the mean value of the distances is 1.294 km, we get actual mean value of 1.01 km after deducing the two outliers detected in the box plot in SPSS. Therefore, it seems that, an integrated government office building in Rangpur may bring nearly 17 government offices under one umbrella system, or within a single premise currently scattered across an average of around 1 km radius.

The summation of the total area of the offices, on the other hand, is 2.60 acres of land, which represent 59% of the total of 29 offices, or 42.5% of the total accommodation of 40 offices in the integrated district office of Madaripur. The average area occupied by each office, that is,

the mean value of area is .153 acres, with having no outlier. If the average is multiplied by 29, or 59% of the offices, it results in 4.437 acres of land. Again, in terms of 40, or 42.5% of the offices, we get around 6.12 acres of land. Therefore, it seems that, an integrated government office building in Rangpur may reduce the use of land area to 1 acre from more than 6 acres.

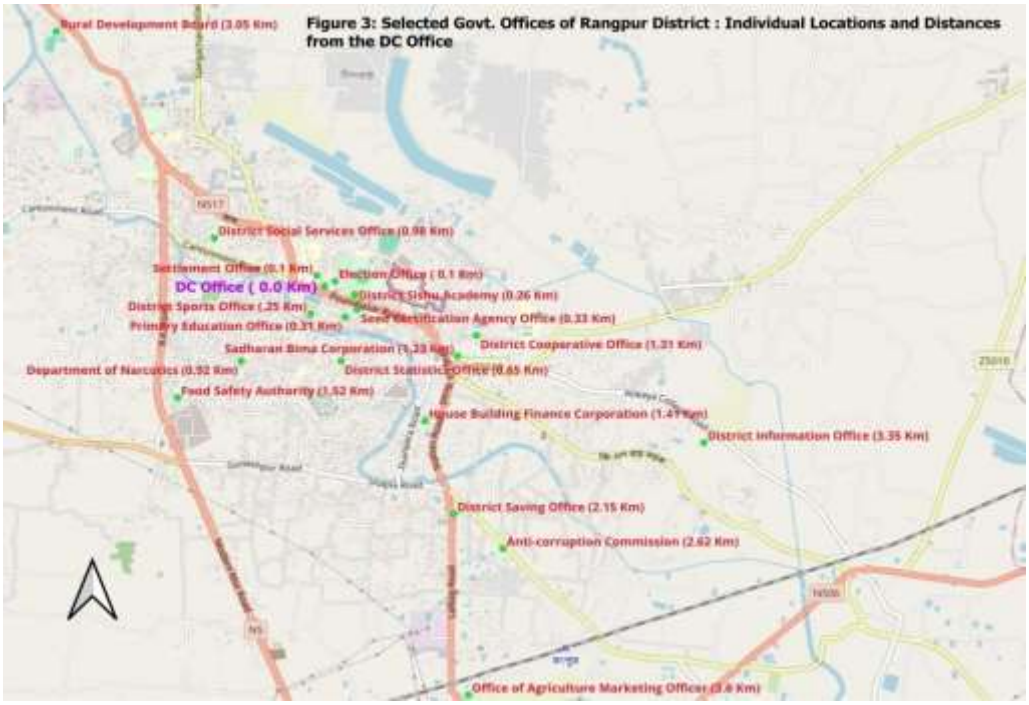

Figure 3: Selected Govt. offices of Rangpur District: Individual Locations and Distances from the DC office

Meanwhile, in Bogura, the sampled offices are scattered across the city (Figure 4), with minimum distance on .13 km to maximum of 2.45 km from the DC office. While the mean value of the distances is 1.036 km, we get actual mean value of .948 km after deducing an outlier detected in the box plot in SPSS. Therefore, it seems that, an integrated government office building in Bogura may bring nearly 17 government offices under one umbrella system, or within a single premise currently scattered across an average of .948 km radius.

The summation of the total area of the offices in Bogura, on the other hand, is 1.28 acres of land, which represent 59% of the total of 29 offices, or 42.5% of the total accommodation of 40 offices in the integrated district office of Madaripur. The average area of land occupied by each office, that is, the mean value of area is .075 acres. However, with having an outlier detected in the box plot in SPSS, the actual average stands at .067 acres. If the average is multiplied by 29, it results in 2.176 acres of land. Again, in terms of 40, we get around 3 acres of land. Therefore, it seems that, an integrated government office building in Bogura may reduce the use of land area to 1 acre from 3 acres.

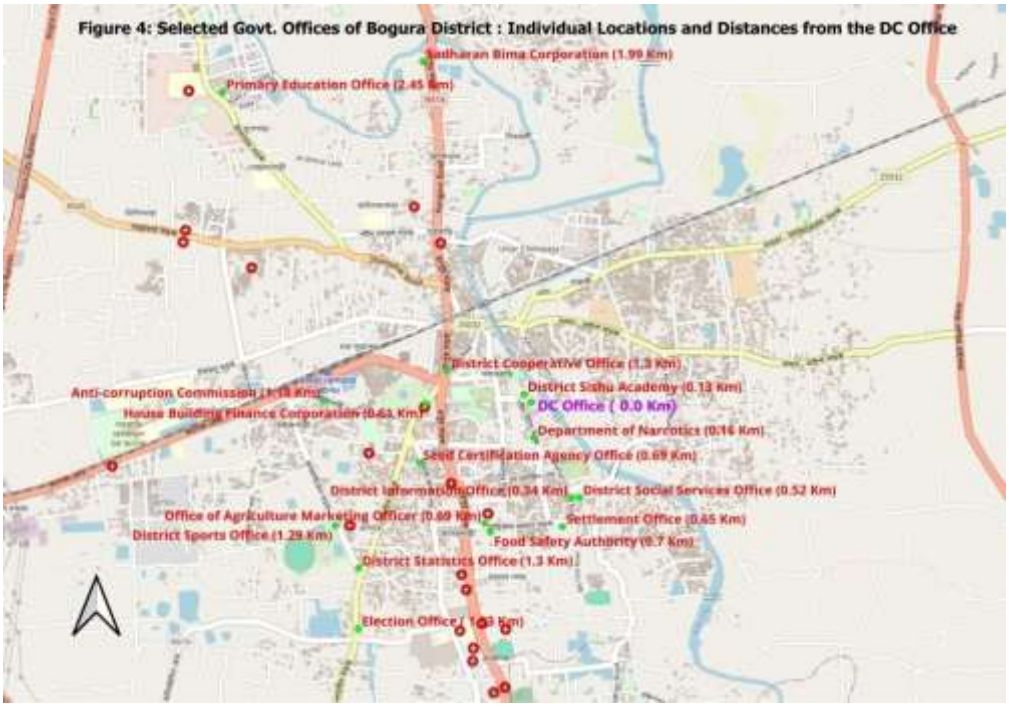

Figure 4: Selected Govt. offices of Bogura district: Individual locations and distances from the DC office

Finally, reviews on combined government office building in the google map reveal that, almost all of them who review are highly satisfied with the introduction of such innovation; with satisfaction rating is as high as 4.7 out of 5. One citizen review that, incorporating different offices under one roof is an excellent idea for it is time saving for him, and also saves public resources like electricity consumption and other utilities. Another reviewer comment-

> The building looks very beautiful. Even more beautiful is the function of this office building. Bringing many government offices in one building has reduced the suffering of common people. All services are available in one place. The multi-stored integrated office is comprised of 40 government offices that used to be located in a scattered fashion in different rented houses in the district, creating distress for the people who needed to reach these offices for various government services. It is really a good initiative, and all the district towns should have an integrated office like this. It will save time, money, and efforts of both the government and the common people.

Therefore, it is evident that, an integrated government office building has the potential to simplify public goods and services for the citizens.

Discussions

This comparison of the spatial dispersion of the office buildings among the three given districts reveals that, it is fairly possible to integrate all the district level government offices into one single building. Moreover, such integration can combine all the offices scattered across the district town under a single premise. Also, it reduces the use of land to a large extent.

Therefore, it can be argued that, integrating all the offices and reducing land use are new innovations in the public sector of Bangladesh, following the Government of Bangladesh's ongoing efforts to modernize public administration through integrated service delivery and

digitalization initiatives. Integrated office complexes can possibly enhance interdepartmental coordination, reduce duplication of services, reduce costs, and improve responsiveness to citizens' needs. In particular, centralizing multiple departments within a single building aligns with the government's digital governance strategy, which emphasizes efficiency, transparency, and citizen-centric service provision.

From a policy perspective, the findings suggest that the success of integrated government office buildings in Madaripur district may serve as a model for replication across all 64 districts of Bangladesh. Standardizing such integrated facilities would require careful planning regarding site selection, accessibility, and infrastructure design to accommodate diverse departmental functions. Policymakers should prioritize equitable spatial distribution to ensure that all citizens, including those in remote areas, have convenient access to public services. Moreover, integrating spatial data into administrative decision-making can support evidence-based allocation of offices and optimize service delivery networks.

However, this study has some limitations as well. Firstly, the study area is limited to only three districts, where only one district is taken as the case, and other two as comparison. Is could be a well representative of the total population if multiple districts in both categories were studied. Secondly, almost 40% of offices are found to be rented buildings, making it much harder to exactly measure the area of those office premises. Thirdly, this study doesn't conduct any questionnaire survey or interview to understand the perceptions of the citizens of Madaripur district regarding combined government building, only based upon the reviews in the Google map. Also, the perceptions of the employees in those offices are not taken into consideration in this study. Finally, this study doesn't include the extant of reduction of costs in water, gas, electricity, manpower hiring, and maintenance with regard to such integration.

Conclusion

In summary, this study demonstrates that integrated government office buildings can significantly enhance resource utilization and simplify service delivery at the district level by consolidating multiple government offices under a single roof. Such integration not only optimizes land use, but also reduces the dispersion of administrative functions, thereby improving accessibility and convenience for citizens. By bringing scattered offices together, integrated facilities ensure more streamlined and citizen-centric public services, reflecting a practical approach to public sector modernization.

To maximize the benefits of integrated office buildings, several recommendations can be suggested. Firstly, integrated office buildings should be scaled up across all the 64 districts of Bangladesh, ensuring equitable distribution and accessibility. Secondly, spatial analysis should be regarded as a strategic planning tool to optimize site selection, assess spatial accessibility, and support evidence-based decision-making in the design and implementation of integrated office complexes.

Overall, integrated government office buildings represent a replicable and strategic innovation in public sector infrastructure, with the potential to serve as a benchmark for nationwide administrative reforms.

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