

**Proceedings**  
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## Preface

These Proceedings are composed of a few papers presented in the 2024 Conference of the [Bangladesh Development Initiative \(BDI\)](#) held on the campus of the University of California, Berkeley. The three-day conference (November 8-10, 2024) was organized by BDI in partnership with the Chowdhury Center at the Institute of South Asian Studies, UC Berkeley.

Roughly 100 scholars and academicians attended the conference (please see Appendix 3 for the list of conference participants), where some 60 papers were presented in some 20 different sessions, covering topics like economic development, poverty alleviation, monetary policy, and new technologies to assist with environmentally friendly economic growth. Additionally, the conference featured keynote presentations and seven panel discussions on diverse topics related to the socio-economic development of Bangladesh such as the role of private universities, the challenges faced by think tanks, and the significance of the July-August 2024 student led uprising. Please see Appendix 2 for the Conference Program.

BDI is a US-based think tank focused on the development of Bangladesh. Established in the early 1990s by Bangladeshi-American professionals, it organizes international conferences, publishes the *Journal of Bangladesh Studies*, and supports policy-oriented and related research on Bangladesh, its people, history and culture.

BDI aims to improve the social and economic development of Bangladesh through research and policy formulation, targeting areas like food self-sufficiency, housing, healthcare, education, and transportation. It also promotes industrialization and rural development to alleviate poverty and fosters cultural exchange to enhance international understanding. There are a number of other projects that BDI has pursued over the years.

The organization is committed to research that will lead to industrialization and acceleration of rural development of Bangladesh as a means to alleviate poverty, and foster strong relationships and solidarity across Bangladeshi residents of North America, to raise awareness around the developmental issues facing the country and to address those issues with a unified effort, initiate cultural exchange to promote international understanding between the people of Bangladesh and the world community; publish books, pamphlets and research to enhance the above objectives; target the underprivileged classes, women and children in all developmental efforts.

I want to thank Farzana Bindu, the editor of these proceedings, for her time and diligence in producing this volume. I would also like to acknowledge the support provided by Prof. Bernhard Gunter and Prof. Rahim Quazi. If you have comments or would like more information, please let us know. I hope you enjoy and benefit from the publication of these proceedings.

Thank you for your interest.

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February 28, 2025

# **A Micro Look at the Next 50 Years in Bangladesh: A Village in Monirampur, Jashore**

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## **Abstract**

In conjunction with the BDI conference theme of the next 50 years in Bangladesh, I have focused on the village in Jashore. I have studied for the past 30 years. While optimistic because of economic prospects, including cross-border agriculture exports as well as increased employment opportunities in nearby towns and cities, my optimism is tempered by the growing consequences of climate change. It also assumes a more sustainable development oriented political economy. I also focus on the changing village population, speculating that it could in part be made up of previously divorced women who have returned to their village and remarried while younger villagers continue to leave.

## **Keywords**

Climate change, Sustainable growth, Urbanization

## **Introduction**

My research in a small village in southwestern Bangladesh over the last 40 years suggests that there will be continued economic and quality of life gains for those remaining in rural Bangladesh. Land continues to escalate in price as does agricultural yields. If trade barriers would be dropped between India and Bangladesh, this area of Bangladesh could become a rich source of vegetable and grains for markets in Kolkata and West Bengal in addition to Jashore and Khulna. And there are several industrial projects on the Jessore-Khulna Road that could open jobs. At the same time this will be accompanied by significant migration to urban areas which will continue to expand and serious ecological struggles with climate change. Bangladeshis might be robbed of steady improvements in the quality of life and income by accelerating threats from climate change. While it is my desire from a global studies perspective to draw on this micro future to infer the wider global future, for this paper I will forgo going beyond Bangladesh over the next 50 years.

Just as a matter of introduction and grounding, I began my research in Modhupur, located 3 kilometers east of the upazila town of Monirampur, about 20 kilometers southwest of Jashore on the Satkhira Road. I was affiliated with the BRAC Research and Evaluation Division's Village Study Project although the BRAC staff helped me identify a vulnerable village primarily because of a significant number of young widow-headed families separate from the villages in the Village Study Project. My research revealed that while materially poorer villagers were benefiting from the BRAC programs, especially related to income-generating and educational opportunities, a minority of members benefited disproportionately. This research helped to push BRAC to design programs for the ultra-poor (Chowdhury and Bhuiya, 2004, MacMillan, 2022).

## Prospects

Let's look at the agricultural prospects first. This area of the southwest is extremely fertile and within 40 miles of the Indian border. If trade barriers could be dropped, it is likely that border trade could be substantial with the growing needs of West Bengal tapping into this agricultural area. Imagine vegetables and fruits that could be supplied during the winter months as well as rice during much of the year. This would be an enormous boost to the local economies along with continued off-farm jobs as these communities developed. While cross-border trade does not always benefit small farmers and landless laborers, the proximity of Kolkata and other growing urban areas in West Bengal has the potential for great economic benefit for this agriculturally rich adjacent area.

With climate change the key issue here is going to be water. Already a main limitation is water in that India is diverting large amounts of river from the Ganges to boost their own irrigation. However, if Bangladeshi agriculture were to become integrated into the Indian market there should be less motivation to divert water as indeed the cost benefit of productive areas in Bangladesh may become much greater. Long term, remember that the Himalayan glaciers are melting, and this could be a real threat to agriculture and life in these districts.

Another limiting factor could be the deep-tube wells and their ability to bring sufficient water as the area dries because of a hotter drier climate caused by climate change as well as the Indian water diversion at the Farakka Barrage. And there are health concerns as well because the deep tubewells may be responsible for bringing up arsenic from deeper in the earth. However, a new concerted effort to reduce climate change as well as to conserve water may be workable to provide the necessary water over the short term.

One other problem in these areas is the waterlogging of wetland soils often heavily used for agriculture because of the rapid silting of the many tributaries in this deltaic region. Some river dredging is being done but this will continue to be an obstacle to increasing agricultural production when demand could rise dramatically because of the opening of cross-border commerce. Hopefully, considering the value and utilization of local knowledge, as espoused by Howes and Chambers (1979), those who have farmed these wetland areas much of their lives will be listened to when civil engineers implement plans to solve this waterlogging dilemma.

Here I might add an aside about the long-term frustration with India primarily not dropping these trade barriers. It will be important to look at India's long-range plans related to its own economic growth to see when they will wise up to cross border traffic being a key component to economic growth in both nation-states. Let's hope they do not continue to be skeptical in their relations with the new Bangladesh government. I do not think the new government would object to cross border trade given the enormity of benefit that could bring to Bangladesh and in this case the economies and prosperity of the people of the southwest.

Currently a significant number of young women and men are finding employment and work related to a nearby jute mill to Modhupur in the town of Abhoynagar on Jashore-Khulna Road. The question is whether these industrial opportunities will continue to remain in these rural areas or if most industrial opportunities will also shift to growing urban areas along with rural migration. If more the latter, then rural Bangladesh including the villages will remain largely agricultural unless the upazila towns diversify their economic activities to expand out to nearby villages. With the

possibility of long-term agricultural growth including from cross border trade there could be renewed emphasis on the diversifying of the Monirampur upazila economy beginning with simple agriculture, seed, and poultry feed operations as well as fertilizers. There will also be the accompanying need for skilled labor and shops with increased electric, plumbing, construction, and agricultural implements.

Watch the Jashore-Khulna Road as it seems to be becoming a new industrial thoroughfare with towns like Abhoynagar growing into cities and with the industry, services, and population that will result in more economic growth. Fortunately, the village of Modhupur is located midway between Monirampur and Abhoynagar strategically located for Modhupurans to take advantage of economic development in both upazila centers, looking west in terms of agricultural goods to West Bengal and Kolkata and east also to agriculture but also industry in Abhoynagar, Jashore and beyond Khulna. Modhupur is already experiencing jobs and business opportunities just in terms of transportation to and from in these networks.

In interviewing high school students from my research village in 2016, only one student, a young man, expected to stay to live in the village. The other students in a class of about 25, both young men and women, expected to live in the growing city of Jashore about 25 km to the north or Khulna some 40 kms to the southeast. And perhaps even there might be some shorter migration to Monirampur and Abhoynagar or longer migration to Dhaka. This suggests continued significant urban migration with the next generation already to nearby cities like Jashore at least. It remains to be seen whether Modhupur becomes further integrated into Monirampur and Abhoynagar, thus perhaps diminishing the urban migration a bit.

However, listening to what the younger generation of Modhupurans is saying, it is likely urban migration will be significant. And this is especially the case with the significant numbers of young women migrating for work as well as young men, in some cases newly married. It is likely that the bulk of this urban migration will be regional with ties being maintained back to Modhupur with perhaps increased investment in the land and agriculture surrounding Modhupur as well as homes and nearby businesses.

I am particularly interested in the transformation of the rural landscape and villages. Because of the urban migration, villages over the next 50 years are likely to dramatically decrease in population density with many absentee family members maintaining households and extended families in the village while financing their improvement.

At the same time, I've observed divorced young women returning to their natal villages, some with young children and some remarrying after they've returned, to settle back home village. What these examples suggest more widely is that the villages of the future may be maintained by caretaker couples with children who, because of unfortunate circumstances, find themselves home in villages while many other members of their family have permanently relocated to urban areas for employment but dependent on these caretaker families be their anchor back home.

It will be fascinating over the next fifty years to see how Bangladeshi society handles its deep connections to the rural *bari* with some members of rural families remaining in the village, others returning to raise children in or near their ancestral village with still others becoming more permanent urban migrants. Care must be taken, however in terms of government policies to ensure

the viability of smaller landholdings, although growing larger than today, unlike in the United States where we may be witnessing the widespread takeover of agribusiness on the land of what was previously small farmers. I remain intrigued, however, at the possibility of divorced women bringing their children and perhaps new spouses back with them to provide steady and long-term anchors to their family village as well as some stability and continuity in Modhupur until it is subsumed by a growing, sprawling town around it.

The anecdotally small sample of divorced women returning to live in their natal village and then going on to have their families serve as sustainable village anchors for their extended families given the frequent mobility from the village was an unexpected finding during my sabbatical research. While it may not represent a widespread trend in Bangladesh, it is an observation to be watched given the question of the long-term stability of rural areas and family ties given the rapid migration from rural to urban in Monirampur upazila and elsewhere in Bangladesh.

As we are talking about a span of fifty years into the future, my expectation is that Modhupur will change significantly over that period with perhaps a highway running near it linking it to both Monirampur and Abhoynagar. The question again will become whether Modhupur in the next 50 years becomes an agricultural town or a suburb of either Monirampur or Abhoynagar or perhaps both. This is a far cry from the work of my late friend and colleague, Helaluddin K. S. Arefeen (1983), who in the 1980s conducted research and wrote about the periurban village, which is defined as a village being gradually subsumed by a nearby town. In the case of Modhupur, we would be talking about a village growing into a town and perhaps a suburb, if you can think of that in Bangladeshi geographical perspective, situated between two upazila towns growing into cities with a mix of agricultural/urban areas in between.

### **Conclusions for the Next 50!**

The obvious threat to steady progress of the next 50 years depends upon the escalating march of climate change as well as the global rise and now march of authoritarian nationalism. Increasingly this research village and many other rural areas located within 50 miles of the coast will see sea level rise as well as floods and hurricanes much further inland. Rising temperatures will make village life and agricultural prospects increasingly challenging which may in turn accelerate the exodus to urban areas. And let's hope the combination of drying and waterlogging at the same time does not prematurely halt Modhupur's agro economic potential. At some point soon climate change is likely to also cause a decline in the rising quality of life, significantly increase the cost of living, and even the survivability of village and town life. Authoritarian governments and politics might further encroach on what had been the improving quality of life. At least Bangladesh for the moment in 2025 may have turned away from authoritarian government. Beyond stabilizing the situation and democracy, the new government needs to support the enormous potential for economic growth, particularly in the Khula division.

Thus, we have moved far away from the extensive BRAC and other NGO programs of the 1990s. They did make a positive different in contributing the economic benefit for the poor, but as Sir Fazle Abed and Mushtaque Chowdhury always suspected, the primary credit for the economic progress of the poor is due to their own hard work and being able to take advantage of opportunities presented (MacMillan, 2020). This does not mean that poverty will not remain a persistent problem

in Modhupur and other villages in Bangladesh. However, many of these families have used education and economic opportunities to lift themselves out of poverty to some level of growing prosperity. Still, medical problems can still endanger families as was the case for a Hindu widow-headed families I studied. The family accrued benefits from their land and pottery business only to have much of their income diverted to special needs services and education for their first-born grandson born with developmental disability. While we still need the Rapid Rural Appraisal that my colleague, Michael Howes developed with Robert Chambers (1994), we now need focused research into where and why acute poverty in rural areas persists as well as more long-term research into how poverty in now periurban villages/towns can be overcome through the early childhood education initiatives of BRAC and assistance in finding training and employment.

The hope of progress and economic dynamism may well continue to propel development in rural Bangladesh particularly if it involves sustainable growth. However, it becomes difficult to be optimistic about the long-term future of Bangladesh despite the progress unless climate change can at least be slowed if not reversed along with a democratic movement away from authoritarian nationalism, which hopefully, perhaps optimistically, is being overcome at least for a significant period into the future.

That we can only know the trends in rural Bangladesh and not the likelihoods speak to the necessary ingenuity and creativity that will determine what the next 50 years of life in rural Bangladesh will become despite both opportunities and challenges. Nevertheless, I remain optimistic that the next 50 years can be productive and beneficial with the huge caveat of us together making significant changes in alleviating climate change, developing sustainable development assistance and opening the borders for cross-border and international trade and employment opportunities.

### **Acknowledgement**

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# **Bangladesh at a Critical Juncture: Alternative Pathways to Address the Triple Challenges**

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## **Abstract**

Bangladesh's economic transformation over the past few decades has been widely recognized, with remarkable poverty reduction, rapid economic growth, and human development improvements. The country's attainment of lower-middle-income (LMI) status in 2015 was seen as a steppingstone toward upper-middle-income (UMI) status by 2031. However, deep-seated governance failures, widening inequality, environmental degradation, and increasing global economic pressures have created a precarious situation, putting its long-term trajectory at risk. The 2024 Monsoon Revolution, triggered by systemic governance failures, underscores the fragility of political stability. Economic challenges, including rising inflation, inequality, and financial sector vulnerabilities, further complicate the picture. At the same time, climate change, industrial pollution, and energy shortages pose significant environmental risks. While the interim government has provided temporary stability, the country remains at a crossroads, where political instability, economic uncertainty, and environmental degradation threaten long-term progress. This research will use an integrated assessment model to explore how Bangladesh can navigate these three critical challenges—political instability, economic uncertainty, and environmental degradation—while striving for well-being and shared prosperity without harming the planet. Adopting a scenario-based approach, we will analyze policy pathways that balance governance stability, economic resilience, and environmental sustainability. The goal is to develop comprehensive policy recommendations that enable Bangladesh to pursue sustainable growth, ensure social equity, and enhance resilience against future crises.

## **Keywords**

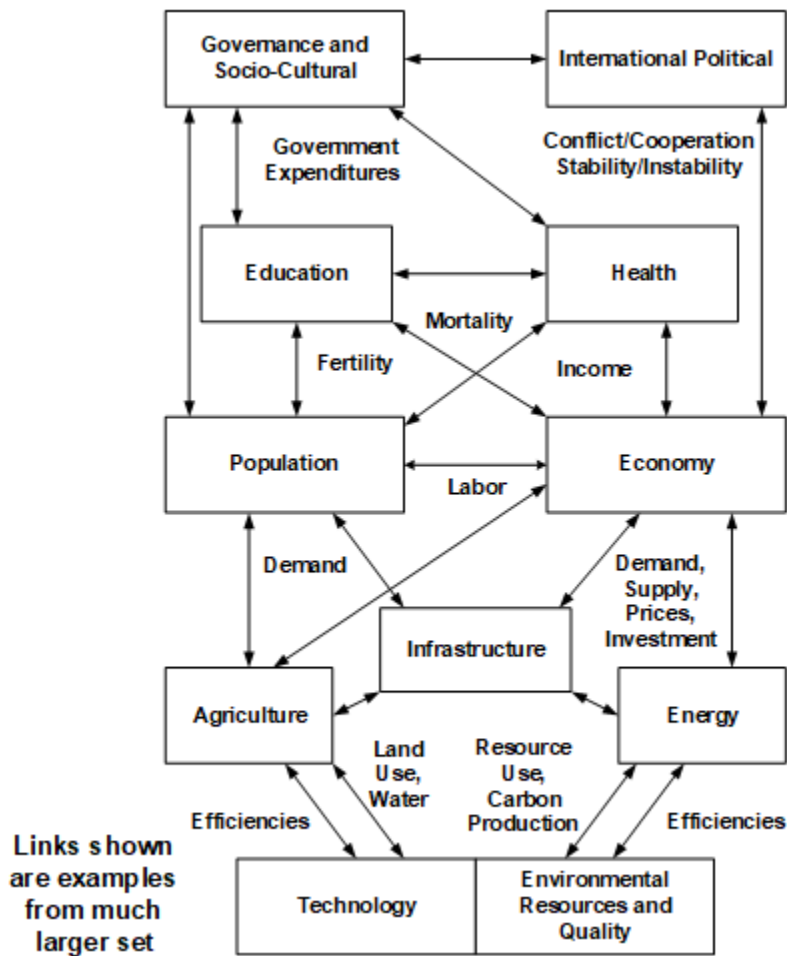
Bangladesh economic development, Long-range forecast, Sustainability and economic growth, Human Development Index

## **Model**

We use International Futures system (IFs) global modeling platform for our scenario development and analysis. IFs is an integrated assessment model, a comprehensive, long-term forecasting system designed to analyze interactions across multiple development domains, including economy, demographics, governance, energy, and the environment. The economic model uses a recursive dynamic computable general equilibrium (CGE) framework, incorporating six economic sectors, government finance, trade, and investment flows to simulate growth, inequality, and financial stability. The demographic model is based on a cohort-component structure, with endogenous fertility and mortality rates to project population trends, labor force dynamics, and migration patterns. The political model captures governance quality, democracy levels, conflict

risks, and institutional stability, making it ideal for assessing political uncertainty and its economic consequences. The energy model tracks production, consumption, and energy transitions, while the environmental model integrates climate impacts, resource depletion, land use, and pollution trends. The illustrative linkages of the International Futures system (IFs) model are shown in Figure 1.

**Figure 1: International Futures System (IFs) Model with Illustrative Linkages**



### Scenario Development

Given the interconnected nature of economic prosperity, political stability, and environmental sustainability, this research develops alternative scenarios to explore Bangladesh’s future pathways in addressing these three critical challenges. Using the International Futures (IFs) model, we will evaluate how policy decisions—both domestic and global—can shape Bangladesh’s trajectory toward long-term well-being and shared prosperity without compromising environmental sustainability. We develop five scenarios in IFs for our analysis - a base case, three

policy intervention scenarios representing three areas of challenge, and a combined scenario. The scenarios are run till mid-century (2050).

### Scenario Narratives

- **Base case** is a long-term, integrated projection of global development trends based on historical data, current policies, and expected trajectories. It is a data-driven guess about how the world might evolve if no major policy changes, shocks, or unforeseen disruptions occur.
- **Sustainability** explores pathways for climate change mitigation, energy transitions, and environmental protection;
- **Stability** examines how institutional reforms, anti-corruption measures, thriving democracy, stable state and improved governance impact economic and social outcomes;
- **Prosperity** focuses on enhancing growth and productivity, improving macroeconomic conditions, expanding access to health, education, and infrastructure, and fostering inclusive growth.
- **Combined scenario** integrates policies from all three of the policy intervention scenarios.

The comprehensive list of interventions for the three policy scenarios will be included as an annex in the final paper. Table 1 lists the areas of intervention for the prosperity scenario.

**Table 1: Prosperity Scenario: Areas of Intervention**

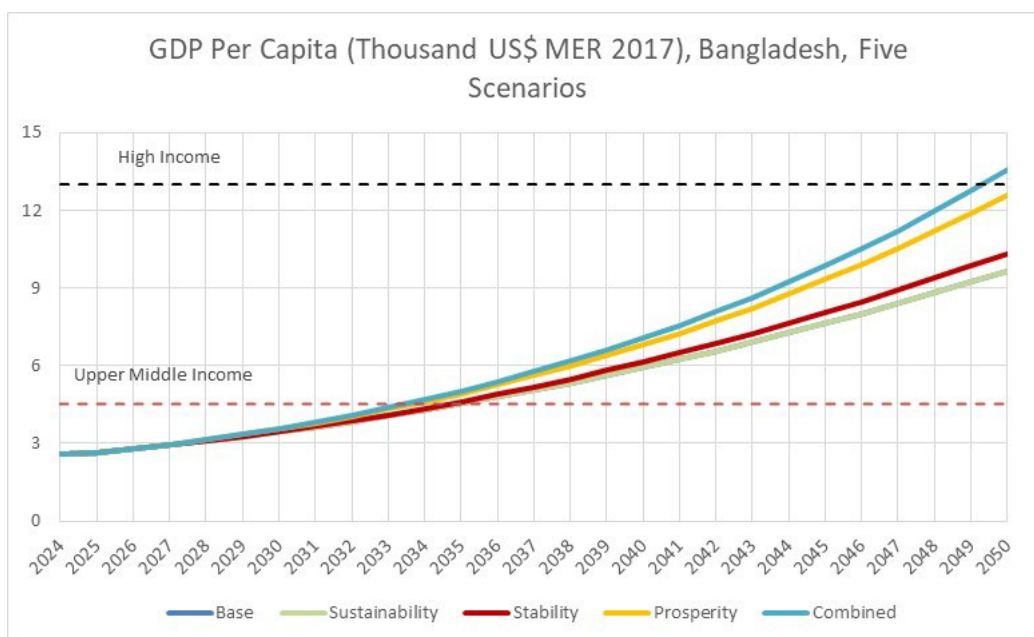
Agriculture	Yield, irrigated area, rural road network, agricultural wastage
Education	Entrance, persistence and graduation rates at primary, lower secondary, upper secondary and tertiary levels; learning quality; science and technology education
Demography and health	Mortality, contraception use, malnutrition, maternal mortality, gender empowerment measure
Infrastructure	Access to electricity, road, water, sanitation and ICT services
Macroeconomy	Productivity, economic freedom, public expenditure, FDI, remittances, welfare spending, investment, revenue

## Results from the Five Scenarios

With well-coordinated and efficient governance in a stable political environment—focused on economic diversification, human capital development, and infrastructure expansion—Bangladesh could achieve high-income status by mid-century. Strategic investments in green technology, forest land management, and social inclusion will also ensure that this growth is sustainable and benefits all segments of society. We begin by examining income and then incorporate other components of the Human Development Index (HDI), namely education and health. Finally, we present projections for the overall HDI.

Bangladesh is currently a lower-middle-income country and has set a goal to achieve upper-middle-income status by 2031. Figure 2 presents GDP per capita in constant 2017 dollars, the monetary unit used in IFs. For simplicity, we use round figures: \$4,500 as the income threshold for upper-middle-income status and \$13,000 for high-income status. The plot indicates that Bangladesh is projected to reach upper-middle-income status around 2034 or 2035, depending on the scenario. The combined scenario is the only one in which the country is expected to attain high-income status by 2050.

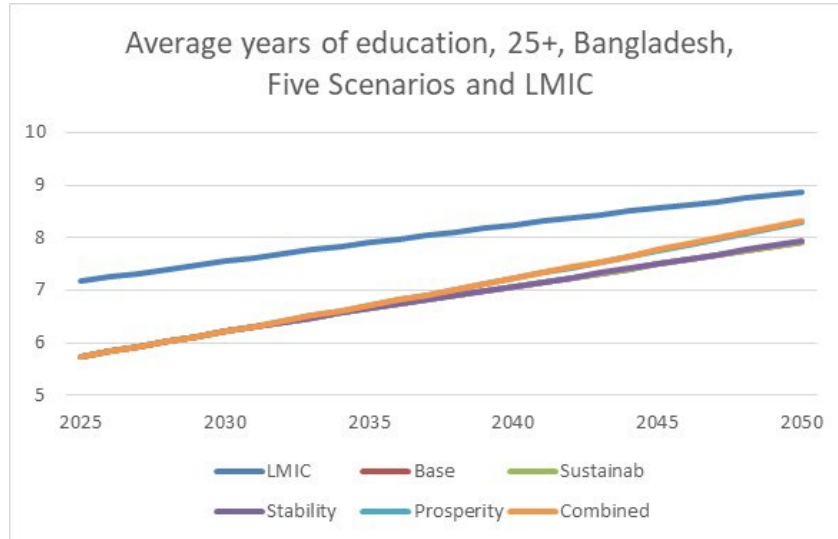
**Figure 2: GDP Per Capita of Bangladesh Across Five Scenarios**



While Bangladesh has recently made impressive progress in increasing school enrollment, it takes time for these gains to be reflected in adult educational attainment, shown in Figure 3. Between 2025 and 2050, the average years of schooling for Bangladeshis aged 25 and older is projected to increase by two years, reaching approximately eight years by mid-century. The combined scenario adds another 0.3 years to that. However, the country will remain below the LMIC average of 8.9 years in 2050. To bridge this gap, Bangladesh can focus on improving education quality, which

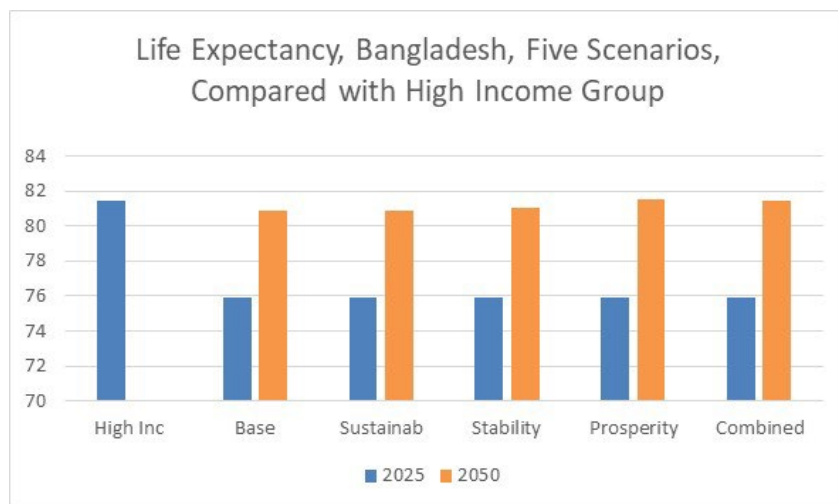
are also scenario drivers, to ensure that younger generations entering the workforce receive a high-quality education.

**Figure 3: Educational Attainment of Adults in Bangladesh Across Five Scenarios**



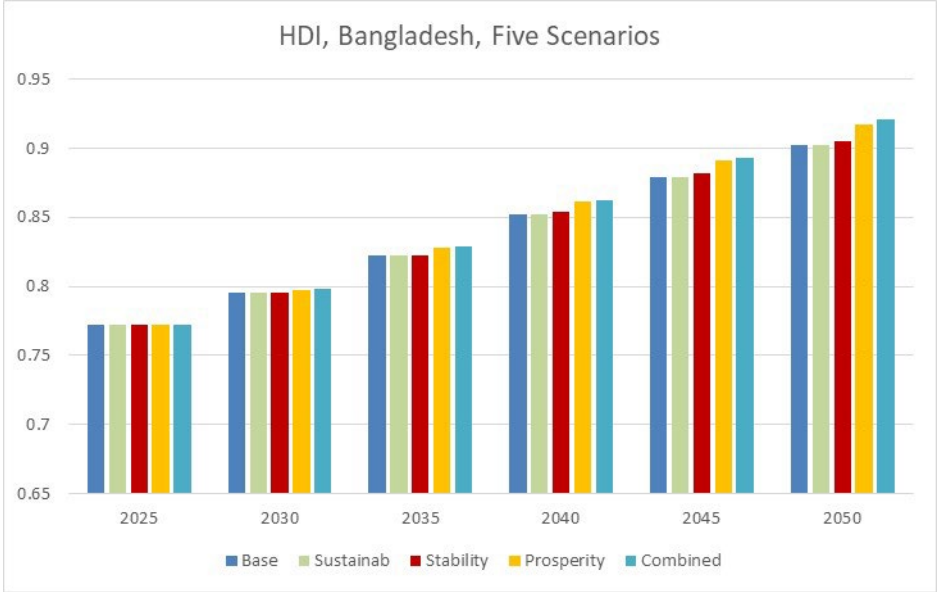
By the mid-century, life expectancy in all scenarios (shown in Figure 4) exceeds 80 years. In the combined scenario, the projected mid-century life expectancy of an average Bangladeshi is 81.47 years, which is equivalent to the current life expectancy average in the high-income country-group.

**Figure 4: Life Expectancy of Bangladesh across Five Scenarios**



Bangladesh’s HDI (shown in Figure 5) can exceed 0.92, an increase of nearly 14 basis points in the combined scenario. This is equivalent to Japan's current HDI level.

**Figure 5: Human Development Index of Bangladesh Across Five Scenarios**



**Conclusion**

Bangladesh stands at a critical juncture, with the potential to transition from a lower-middle-income country to a high-income economy by mid-century. However, achieving this goal depends on addressing three key challenges: stability, sustainability, and shared prosperity. Stability requires efficient governance and a conducive political environment to maintain consistent economic growth. Sustainability necessitates investments in green technology, climate resilience, and responsible resource management to ensure long-term progress. Shared prosperity demands improvements in education quality, healthcare, and infrastructure to create inclusive growth that benefits all segments of society. While each of these factors is important on its own, the scenarios show that only a combined and coordinated approach—one that integrates political stability, environmental sustainability, and equitable development—will enable Bangladesh to reach high-income status in a sustainable and inclusive manner.

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# **Bangladeshi Immigrant Women in New York: World-Making Through Domains of Care**

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## **Abstract**

This writing investigates the activities of Bangladeshi immigrant women inside and outside their dwellings as part of their resettlement process in New York. Through their everyday actions, they assert their identities as Bangladeshi immigrant women and demonstrate their agency by adapting the activity patterns they were familiar with in Bangladesh. The article discusses how dwellings influence temporal understandings of self from the perspective of immigrant Bangladeshi women in New York. Both participants featured in this writing reclaimed and redefined their identities by utilizing their dwelling spaces in nuanced ways under varying socio-spatial conditions. Through ethnographic observation, oral histories, photo-elicitation, and documentation through photographs and drawings, this research explores the domains of care established by Bangladeshi immigrant women along with family members or housemates in their living environments. Through their expressions of care and protection, they transform their dwellings into spaces that assist them in navigating the challenges of living in a foreign setting. In this process, their daily chores define their activities within their dwellings, subtly establishing their territories and highlighting their transcultural identities as Bangladeshi immigrant women in New York.

## **Keywords**

Immigrant, Women, New York, Activity, Dwelling

## **Introduction**

In this writing, I discuss the activities of Bangladeshi immigrant women inside and outside their dwellings as part of their resettlement process in New York. Through their everyday actions, they assert their identities as Bangladeshi immigrant women and demonstrate their agency by readapting the routines they were used to in Bangladesh. As Bangladeshi immigrant women, their social and cultural contributions often blur the boundaries between their personal spaces within their dwellings and the broader community in neighborhoods predominantly inhabited by Bangladeshi immigrants, showcasing their agency in resettling in New York. Time plays a crucial role in this process as their place-making evolved during their resettlement periods, leading to greater social and economic security. I also discuss the role of dwellings in temporal understandings of the self from the perspective of aging immigrant Bangladeshi women in New York. Based on the narratives of two research participants over sixty, I argue that they reorganize their living spaces according to unspoken cultural codes rooted in ethnic Bangladeshi values as part of their resettlement process. The histories of Bangladeshi immigrant women in New York date back about fifty years, while the history of men from the Bengal region goes back even further.



Most of these women came to New York with their husbands in search of a better life, and their main focus was on their family's well-being during resettlement. The acculturation process for Bangladeshi immigrant women in New York varies by social class, with access to public spaces and educational institutions playing a crucial role. Despite facing challenges in accessing public resources in New York due to their family values and as visibly identified Muslim-majority immigrant women, these first-generation Bangladeshi women work hard to obtain resources for better resettlement. In this context, I examine how these Bangladeshi immigrant women establish territories within their dwellings through their activities and the physical arrangement of their spaces. Finally, discuss how these activities reflect their agency in seeking better resettlement experience in New York. Through these inquiries, I explore the cultural landscapes of Bangladeshi immigrants in New York from a gendered perspective, particularly within their households.

## **Literature Review**

Carl Sauer (1925) coined the concept of cultural landscapes, stating that a cultural landscape is a combination of natural and human-made elements that represent, at any given time, the core character of a place. Sauer's view of the cultural landscape as a collection of visible, material forms shifted over the years. Scholars from diverse academic disciplines have emphasized the landscape as a common and ordinary part of everyday life (Jackson, 1984; Meinig, 1979a; Stilgoe, 1982), as a representation (Cosgrove and Daniels, 1988; Duncan and Ley, 1993; Schein, 1993), as gendered, class-based, politicized, and central to the (re)production of social life (e.g., Duncan, 1990; Mitchell, 1994; Anderson and Gale, 1992; Zukin, 1991).

Amos Rapoport (1992) describes the cultural landscape as a collection of various systems of settings within which activities occur in space and time. According to Rapoport (1990), a setting is a milieu that defines a situation and reminds occupants of the appropriate rules and ongoing behaviors relevant to conditions characterized by the setting, thereby facilitating co-action. He often views settings as highly culture-specific, where semi-fixed elements, such as furnishings, can change more readily and co-vary with activities, guiding and reflecting them. He also views dwellings as part of a larger system and a specific subsystem of settings.

Rapoport (2005) refers to the term “dwelling” as referring to the physical aspects of a living place and suggests that “home” is often defined in terms of “meanings of home.” Rapoport (1977) defines territory as a specific area, or an area that is owned and defended—either physically or through rules and symbols. This process entails identifying a space that belongs to an individual or a community group.

## **Overview**

In this research, I apply Rapoport's spatial theories due to their engagement with environment-behavior studies and cultural landscape studies to understand the activities within Bangladeshi immigrant dwellings. I also discuss how the territory of power and care among the people living in the household reflects their activities inside their dwellings, particularly for women. For example, for research participant Nazma, her kitchen space serves as her territory for expressing

power and care for her family, where each object and its organization systems play a significant role in establishing her territory. In contrast, the other participant, Hashi, had been a domestic worker in her employers' households for years, where she lived and cared for their family members. In this process, she failed to establish her dwelling. She currently lives in one of the bedroom spaces of a shared dwelling, where she appropriates her private space by shutting down the bedroom door and creating her territory within her bedroom space. This form of personalization of space is an assertion of identity and a means of ensuring both psychic and physical security inside the household (Porteous, 1976). Both participants discussed here reclaimed their identities by using dwelling spaces in nuanced ways under different socio-spatial conditions. They exercised their agency by intentionally organizing the public and private areas of their households according to their preferences through their activities. Their narratives clearly show that they utilize their dwelling spaces as tools to practice their cultural norms from Bangladesh, particularly regarding food preparation activities and social engagement with people near and far. Their personalization of dwellings through objects and activities represents acts of claiming and defending their territories, as termed territoriality by Stuart Hall (1991).

## **Methods**

I examined the activities of Bangladeshi immigrant women through semi-structured interviews. I inquired about their daily routines in both their current and previous dwellings in New York and Bangladesh in detail. I employed thick descriptions (Geertz, 1973) to enhance the understanding of their contexts and illustrate their activities when they were alone in their dwellings or with family members or housemates. For these case studies, I closely observed the material conditions of dwellings by taking photographs and making drawings. I also asked them specific questions about their activities in the spaces they frequently visited and lived in, especially their sensory and emotional experiences inside their dwellings. The architectural analysis of their dwellings combines detailed descriptions of their activities to enhance the anthropological understanding of their resettlement experiences within these residential environments. By focusing on activities, I examine the actions these women engage in inside and outside their dwellings, particularly the transcultural practices they incorporate within their residential environments and their impact on their family members and fellow residents.

## **Nazma**

Nazma arrived in New York in 2013 with her daughter, son, and husband from Ruhia village in the Dinajpur district of Bangladesh. They came to the United States on family immigrant visas sponsored by Nazma's brother, who lives in Austin, Texas. He suggested they settle in New York, as it would be easier for them to get around using public transportation and find jobs more quickly, and they followed his advice. Like Nazma, many Bangladeshi immigrant families choose New York as their initial destination during the resettlement process in the United States. The beginning of the Diversity Visa program in 1990 brought many Bangladeshis with families to the United States. New York City's multicultural environment drew these new immigrants, with easier access to jobs, public transportation, and inclusive education for young people. After arriving in New

York, Nazma decided to focus on her household activities while all her family members went outside each day for work and school. In 2021, she had heart pacemaker surgery, and since then, she doesn't prefer going out regularly for walks or grocery shopping. During my fifteen-day stay as a guest in her household, I observed her consistently working to ensure the well-being of her family by preparing meals and cleaning the spaces despite her health issues. Sixty-year-old Nazma moves around these spaces all day to prepare food for her family and their guests from the kitchen, which is her way of showing care for others.

As the primary caregiver for her "big, happy family," Nazma is most active in and around the kitchen throughout the day, which is next to the common area, including the living and dining spaces. Other family members also gather in this shared space at various times during the day, serving as their main area for interaction within the dwelling. Nazma notes that in all her past dwellings, she firmly established her territory in and around the kitchen by taking charge of food preparation and cooking activities, a typical practice for Bangladeshi women in their households.

In this process, the kitchen items that serve her play a unique role in her life. The spice containers are important to her as she considers them essential for her family's food preparations. The cupboards, utensils, and food items in her kitchen are arranged according to her preferences, and any disruption to this organizational system upsets her. She mentions that the kitchen is spacious enough for two people to work together. However, Nazma prefers to be alone because she has specific ways of working and organizing things, including arranging items inside the refrigerators. She inhabits and manages the activities and objects in the kitchen and dining area, which reflects her approach to exerting power by taking control of the food practices in the dwelling.

In all her New York dwellings, she cooks in enclosed spaces, and the smell of her cooking wafts through the living areas. The aromas and textures of Nazma's cooked Bangladeshi delicacies create a sensory atmosphere around the living and dining spaces, reflecting her territory of care through cooking. Nazma's concept of this territory of care aligns with Alejandro Nieto's (2021) assertion that within diasporic communities, such as the Bangladeshis in New York, world-making is less about finding a home in a particular place and more about cultivating a sense of home through a network of relationships that often include various places.

## **Hashi**

Hashi arrived in New York on a tourist visa in 1994. She left her husband and son in Bangladesh, came alone, and knew no one except for a distant relative. She called that relative from the airport's phone, only to realize she had been deliberately given the wrong phone number. Hashi spent eight hours in the airport, unsure of where to go, until she found someone who resembled a Bangladeshi immigrant. The Bangladeshi immigrant named Shah Alam learned of her distress and took her into his dwelling in the Brooklyn borough as a guest. She spent three weeks with his family before finding a job as a domestic worker in a Bangladeshi immigrant dwelling in the Queens borough.

When we met in 2022, Hashi was sixty-seven years old, a throat cancer survivor, and a survivor of domestic worker abuse. Her perception of dwelling as a personal space changed on her first day in New York when she began living in other people's dwellings as a guest or domestic worker. Hashi's displacement over the last 30 years in New York involved moving from one dwelling to

another, where she primarily worked as a live-in domestic worker. Her jobs often included responsibilities as a nanny, cook, and housekeeper in the households of other Bangladeshi immigrants, where language was not a barrier for her. Compared to the mid-1990s when Hashi arrived, today's New York is home to the largest Bangladeshi population in the United States. It has tripled over the past two decades, with more than 100,000 Bangladeshis living across the five boroughs, particularly in Queens, Brooklyn, and the Bronx (Asian American Federation, 2019). As a result, women like Hashi, who do not speak English well enough, can also thrive in New York by residing in Bangladeshi and South Asian neighborhood enclaves, such as Jackson Heights and Hillside.

In a two-bedroom apartment in the duplex attic of a woodside neighborhood, Hashi occupies an eight-by-ten-foot bedroom where she compiles all her belongings. When I met Hashi in the summer of 2022, she shared the space with two Bangladeshi men whom she had known for only two months. The common area of the dwelling features a combined dining and living space connected to the kitchen. Every resident in the dwelling knows the boundaries of their territory in the shared space, which is marked by their personal belongings. Jane Khatib-Chahidi's (2021) research on Muslim Iranian dwellings examines how the socio-religious norm of prohibiting interaction with non-mahram individuals for Muslim women influences the spatial layouts to uphold the strict public/private divide within the dwelling territories. The Arabic word *na-mahram* refers to any person of the opposite sex whose kinship impedes marriage. Hashi lives in a shared dwelling unit co-inhabited by two *na-mahram* men, and she appropriates her private space by keeping the bedroom door locked and creating her territory within her bedroom space.

## Remarks and Conclusion

Nazma and Hashi immigrated to New York at different points in their lives and came from diverse socio-economic backgrounds. As a result, their spatial practices and engagements varied based on their living environments and the people around them. Nonetheless, both reside in or near neighborhoods primarily populated by Bangladeshi immigrants, frequently visiting their commercial establishments. The prevalence of the Bengali language in these neighborhoods and New York public institutions positively impacts the lives of Nazma and Hashi, who spent significant time in Bangladesh before resettling in New York and are not proficient in English. They noted that the accessibility of public transportation systems within the city is a key reason for living here, despite the soaring housing rents and prices.

Nazma and Hashi illustrate how aging becomes a significant factor for Bangladeshi immigrant women as they reorganize their activities and spaces throughout their resettlement years. Both participants shared their needs in their home environments as aging women with specific cultural practices integrated into their lives, such as consuming betel roots daily and following particular cooking techniques of Bangladeshi foods. Both highlight the benefits of their daily activities, such as living in or near Bangladeshi-dominated neighborhoods in New York City. As they age, their movements to the outside of their dwellings have become more limited. They discuss the accessibility of hospitals and doctors in the Queens borough of New York, where Bangladeshi translators are available, and their health issues are addressed with specific cultural sensitivities, such as assigning female nurses for their care. It's worth mentioning that Queens is the most

multicultural neighborhood in New York City, home to the largest group of Bangladeshi immigrants (Asian American Federation, 2019). Four percent of the Bangladeshi immigrant population in New York is aged sixty-five or older, representing a significant number of older adults living in Queens borough (Asian American Federation, 2019).

I claim that through their daily chores in their dwellings and living environments, Bangladeshi immigrant women create their sense of place of being “at home.” Upon arriving in New York, the re-homing of their everyday practices from Bangladesh, like cooking and enjoying Bangladeshi cuisines, starts in their dwelling spaces. The placement of most of these dwellings in neighborhoods dominated by Bangladeshi immigrants enhances their transnational diasporic practices within their residential settings. These neighborhoods provide a diverse array of resources vital for resettlement in New York, including Bangladeshi groceries, driving schools, immigration services, community organizations, and mosques operated by the Bangladeshi community.

These women move between their dwellings and neighborhoods and continue to create a blurred territory through their transnational practices of making “home” in New York. Ultimately, while restructuring their lives in New York, Bangladeshi immigrant women often create their domains of care alongside family members or housemates in ways that reflect their transnational cultural practices. Through their expressions of affection and protection, they transform their dwellings into spaces that help them navigate the challenges of living in a foreign land. In fact, the definitions of care and experiences of informal caregiving are deeply cultural (Tronto, 1993; Chee and Leykoff, 2001; McDaid and Sassi, 2001). Their daily chores define their activities within their dwellings and extend into their neighborhoods, subtly establishing their territories and highlighting their transcultural identities as Bangladeshi immigrant women in New York.

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# Changing Lives of Women in Rural Bangladesh: A Feminist Perspective

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## Abstract

Bangladesh's last few decades have been crucial as it emerged as the fastest-growing economy in South Asia. During this time, rural society across the country has undergone significant changes due to globalization and the proliferation of new media, which has enabled the creation of borderless markets and access to multiple sources of information. As a result, the rural culture and social system in Bangladesh have undergone a drastic transformation (Ahmed, 2024).

Rural societies and economies are connected to the global market economy, and women are now a vital part of the Bangladeshi workforce. Gender plays a crucial role in various areas of social life, including family, kinship, and marriage as well as in the economic, political, and cultural spheres which are now influenced by new employment opportunities and the commercialization of production systems, which has presented new benefits and challenges for women due to the diversification of rural livelihoods, increased labor mobility, climate change, and food insecurity.

Furthermore, the development parameters in Bangladesh have improved, as evidenced by the Global Economic Forum's 2020 Global Gender Gap Report. Development agencies, such as non-governmental organizations (NGOs), international development agencies, and the government actively seek to promote gender roles within the framework of the Sustainable Development Goals (SDGs). This endeavor is aimed at improving the lives of rural women in developing countries, including Bangladesh.

The author revisited the same villages in Bangladesh that she initially studied 22 years ago to document any changes in socioeconomic and social systems, particularly gender roles, as a result of globalization.

## Keywords

Gender, Rural Society, Globalization

## Theoretical Framework

Ulrich Beck argued in 1992 that modern society has faced multiple challenges, such as environmental and health risks, and a series of interconnected changes in social life. These changes include shifts in livelihood patterns, a decline in the influence of traditional values and customs, changes in traditional kinship and family structure, and the democratization of personal relationships. (Beck, 1992).

Feminist debates on development and gender roles respectively, are divided into two schools of thought. The liberal school believes that women's job market participation increases their autonomy, while Marxist and socialist feminists argue that the patriarchal capitalist structure



further perpetuates gender inequality. Additionally, cultural and religious beliefs promote the idea of a “good woman,” as someone exclusively dedicated to being a mother, wife, sister, or daughter, leading to discrimination and unequal resource distribution (Mitchell, 1966; Giddens, 2006).

The author employs the socialist feminist approach and Berk's concept of *risk society* to investigate the transformative changes affecting both the public and personal lives of rural women in Bangladesh. The study uses Sylvia Walby's analytical framework, which defines patriarchy as “a system of social structures and practices in which men dominate, oppress and exploit women.” (Wallaby, 1990; Giddens and Griffiths, 2006)

This study examines the impact of the new market-oriented economy on women's development in rural areas to understand the changing dynamics of their lives; specifically, how the market-oriented economy has impacted the socio-economic development of women in rural areas with a view towards understanding the changes in their lives over the past two decades, in selected villages in Bangladesh.

This study aims to answer the question of what caused socioeconomic changes in rural areas over the past 22 years and how the global era reshaped social institutions and social life in general and women's lives in particular.

The study was conducted in four villages in Faridpur, Bangladesh. Qualitative methods were used to analyze the data collected from 20 in-depth interviews, 5 key informant interviews, and participant observation. The study revealed that there were infrastructure developments, migration, and cultural changes. The experiences of women in the study reflected both hope and despair due to the transformation of economic and cultural factors in their personal and public lives.

## **Research Findings**

Breaking the public-private dichotomy is not necessarily a sign of progress for women, particularly in rural areas of Bangladesh. In fact, women are becoming increasingly vulnerable economically and socially due to their lack of power to negotiate within patriarchal systems (Kabeer, 1998, 2024) which perpetuate domestic and sexual violence, low wages, deteriorating family relations, emotional insecurity, and a double burden of work.

Likewise, rural development in Bangladesh continues to be impacted by globalization, and the role of NGOs as a parallel development agent alongside the government is declining. This change may reflect a shift in donor interests towards empowering women within a market-based paradigm. The features of this new paradigm are intertwined with various aspects of society such as gender, class, sexuality, religion, and patriarchy, and have emerged as a “new culture” with complex novel trends in rural Bangladesh.

Bangladesh has policies in place to promote gender equality. However, some laws, particularly inheritance laws, discriminate against women, making it difficult for them to access resources and achieve equal social, economic, and political status. To overcome this, both the state and news media must challenge the patriarchy and its hegemonic masculine culture that hinders gender mainstreaming in every sphere of life. This is especially consequential for rural women who face additional barriers to attaining gender equality in their everyday lives.

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# **Digital Platform Usage Intention of the Young Female Urban Netizens in Bangladesh for Sustainable Management of Surplus Household Food**

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## **Abstract**

Food waste is a pressing concern in Bangladesh due to people's changing eating habits. Globally digital platforms such as social media platforms and mobile applications are used for surplus food sharing, aiming to reduce edible food waste and facilitate food sharing among users. This study emphasizes the critical role of urban young female netizens in Bangladesh in addressing household food insecurity, given their multifaceted roles as food producers, processors, providers, and managers. It used purposive sampling to collect survey-based quantitative data from Dhaka city. The outcome complies with The Dhaka Food Agenda 2041 developed by the Government of Bangladesh to combat food insecurity and aligns with the UN SDGs such as zero hunger and responsible consumption and production.

## **Keywords**

Digital food sharing platforms, Household surplus food management, Sustainable Development Goals, Young females

## **Introduction**

By 2050, the global population is projected to grow by 18.5-46.9 percent, reaching between 8.71 and 10.80 billion people from 7.35 billion in 2015 (UN, 2015). Over 70 percent of the population will live in urban areas, and global per capita income is expected to triple from 2009 levels (FAO, 2009). Most of the population increase will occur in sub-Saharan Africa and Southern Asia, where extreme poverty is prevalent, with many living on less than \$1.90 per day (UN, 2017). However, several developing countries in these regions are experiencing rapid economic growth, such as Bangladesh, Ethiopia, and India, whose GDPs are projected to grow by 6.1, 7.7, and 7.4 percent, respectively, by 2030 (USDA, 2015).

These changes in income, urbanization, and demographics will significantly impact food consumption patterns and food security in developing countries. Rising incomes may lead to shifts in diets toward more diverse and higher-quality foods, while rapid urbanization could strain food supply systems. Additionally, population growth in poverty-stricken areas may exacerbate food insecurity, making it crucial to address the challenges of meeting increasing food demand. The FAO (2011) cautioned that due to rapid population growth in developing countries, food demand in 2050 will be 100 percent higher than in 2009. Research shows that as income and urbanization rise, people's diets shift from cereal-based to higher-value food items (Huang and David, 1993; Huang and Bouis, 1996; Pingali, 2007; Timsina et al., 2016). However, some studies suggest that as economies develop, households not only replace cereals with higher-value foods but also switch

between different types of cereals (Gandhi et al., 2004; Mittal, 2007). For instance, in India, wheat consumption is expected to grow by 4 percent annually in the future (Gandhi et al., 2004).

Bangladesh, a rapidly developing and densely populated country in South Asia, has a population of nearly 161 million people (UN, 2015). Since 2000, its economy has experienced significant growth, with annual growth rates ranging from 3.8 to 7.1 percent (World Bank, 2016). The country's per capita nominal GDP rose from \$363 in 2000 (World Bank, 2016) to \$1,115 in 2014 (Government of Bangladesh, 2015). Urbanization has also progressed rapidly; in 2001, 19.8 percent of the 134 million people lived in urban areas, while by 2012, 32 percent of the 155 million population resided in cities (World Bank, 2017). By 2050, it is projected that 56 percent of the estimated 202 million people will live in urban areas (World Bank, 2017). This rapid economic growth and urbanization provide a unique opportunity to explore the evolving relationship between food consumption patterns and shifts in disposable income, urbanization, and demographic changes in Bangladesh (Mottaleb, 2017).

Despite advancements in food processing and production, global hunger and undernourishment remain critical issues. Around 820 million people face hunger daily, with projections suggesting that over 840 million could be undernourished by 2030 if current trends continue. Simultaneously, approximately one-third of the world's food is lost or wasted each year, averaging 121 kg per person globally. In 2019, Asia had about 381 million undernourished people, representing over 50% of the global undernourished population. In Southeast Asia, 9.8% of the population is undernourished (Hua, Shannon, Haider and Moschis, 2023).

As Monika et al. (2021) highlight, participating in surplus food redistribution initiatives can challenge traditional views on food waste and encourage citizens to engage in creating alternative solutions. Digital technologies have become an integral part of modern life, deeply woven into the fabric of consumers' daily activities. Almost every aspect of our lives is now influenced by technology. Over the past few decades, there has been a significant shift from the physical, or "brick-and-mortar," world to a digital, or "clicks," environment. Advancements in technology, lifestyle changes, and increasing consumer demands are driving the global expansion of online businesses, particularly since the COVID-19 pandemic. Bangladesh is no exception. On its path toward becoming a "Digital Bangladesh," the country had 66.44 million internet users, 36 million social media users, and 163 million mobile connections as of January 2020 (Kemp, 2020). The number of internet users has more than doubled in the last five years (BTRC, 2020).

As smartphones, internet access, personalized mobile apps, and electronic payment systems have become more accessible, reliable, and convenient, consumers in Bangladesh are increasingly adopting online services. Online transactions have surged in recent years. In 2016, e-commerce investment in Bangladesh was valued at \$50 million, and by 2017, the market had grown to \$115 million. The E-Commerce Association of Bangladesh predicts that the market will surpass \$70 billion in the coming years (Neger and Uddin, 2020). Ordering food online has also become a growing trend, allowing consumers to use apps on their phones to have meals from their favorite restaurants delivered right to their doorsteps (Kader, 2020; Muntasir, 2019). Food delivery apps have transformed Bangladesh's food industry, allowing consumers to conveniently order from a variety of restaurants. In 2019, the online food delivery market reached \$10 million, with over 25,000 daily orders. However, the COVID-19 pandemic in early 2020 caused a significant decline,

with orders dropping by 75-80% during the initial lockdown. As people adjusted to the new normal, trust in safety measures led to a resurgence in online food orders. Companies like Foodpanda introduced contactless delivery and electronic payments to adapt to the changing consumer behavior (Akter and Disha, 2021). Therefore, it is worthwhile to analyze the factors that influence consumers' intention to use digital platforms such as social media and mobile apps to share surplus household food in Bangladesh.

According to the United Nations Environment Program's 2021 Food Waste Index Report, around 931 million metric tons of food are discarded annually, enough to fill 23 million 40-ton trucks, which could circle the Earth seven times, as noted by Richard Swannell, International Director at WRAP. Of this waste, 61 percent—or 569 million tons—comes from households. Dana Gunders, Executive Director of ReFED, emphasizes that reducing food waste significantly impacts climate emissions. Seventeen percent of global food production—around 1.03 billion tons—is wasted annually, equivalent to the weight of 2,823 Empire State Buildings. If food waste were a country, it would be the third-largest emitter of greenhouse gases, following the U.S. and China. This wasted food could feed 1.26 billion hungry people each year. If food waste were a country, it would rank as the third largest source of greenhouse gas emissions globally. Fortunately, many mobile apps and websites now help consumers track food purchases and repurpose ingredients, reducing waste, protecting the environment, and saving money. To mark the International Day of Awareness on Food Loss and Waste Reduction, Food Tank highlights 12 global tools offering creative, practical ways to cut household food waste (Varela, 2024).

The United Nations' Sustainable Development Goals, which are supposed to be achieved by 2030, aim to eradicate hunger and improve access to fresh food and nutritional education. Thankfully, reducing food waste is achievable if consumers, businesses, farmers, and governments unite and proceed to implement it. Emerging technologies offer creative solutions to this issue. The United Nations predicts that global food production will need to double by 2050 due to rising demand, particularly for meat. This challenge must be met without further land degradation. Reducing food waste, especially at the household level—where 70% of post-farm waste occurs—presents an easy and impactful solution. Tech innovations now give us the tools to significantly cut food waste and optimize consumption (Mouysset, 2024).

The digital revolution has recently created new business opportunities and transformed how companies generate value (Scuotto et al., 2017; Scuotto et al., 2020). Simultaneously, the rise of the sharing economy and sustainable, collaborative consumption has driven disruptive business model innovation powered by digital technologies (Martin, 2016; Michelini et al., 2018). Innovative companies have responded by introducing new business models that leverage digital technologies while addressing environmental, social, and economic challenges (Franceschelli et al., 2018). This transformation is evident in the food industry, where efforts to reduce food loss and waste have taken root (Alfiero et al., 2019; Stangherlin et al., 2019).

One of the most innovative developments is the rise of food-sharing platforms and mobile apps that help minimize edible food waste (Harvey et al., 2019). Globally, around one-third of food production—approximately 1.3 billion tons—is lost or wasted each year (Gustavsson et al., 2011; Michelini et al., 2018). To tackle this surplus and address related environmental, social, and economic issues, food-sharing platforms have become central to promoting sustainability by

reducing waste, fostering social inclusion, and encouraging community engagement (Schanes and Stagl, 2019). These platforms create secondary markets for surplus food, streamline the sharing, gifting, and selling process, and advocate for sustainable food consumption (Bachnik and Szumniak Samolej, 2018).

With this backdrop in mind, this study has set the following two objectives.

- To identify and analyze the factors that influence young female urban netizens in Bangladesh to use social media and a fictitious mobile app BDHomeFoodSavers for sustainable management of surplus household food.
- To provide recommendations for policymakers to outline strategies to motivate the use of digital media among young female urban netizens and the community beyond.

## Literature Review

The mobile connections in Bangladesh surpassed the population size, with 188.6 million active connections. At the start of 2024, women made up 50.5% of Bangladesh's population (Kemon, 2024). Besides, urban youth in Bangladesh have widespread digital access, primarily using smartphones and 3G data. Facebook and Messenger dominate platform use, though traditional phone calls are preferred for communication (Varghese, 2017). Among social media users, only 34.2% were female, despite overall increases in social media usage in the country. Specifically, women accounted for 34.2% of Facebook's ad audience, 30.9% of Instagram's, and 31.9% of Facebook Messenger's users (Kemon, 2024). Among urban women in Bangladesh, technology use is growing, but it is still facing challenges. While 57% of urban women own smartphones, only 13% have used a computer. The pandemic saw a rise in online businesses run by urban women, showcasing their potential in the digital space (Moyeen, 2023).

To maintain a competitive edge, food-sharing platforms must actively engage and empower consumers, rely on community support, and generate social, environmental, and economic value (Martin, 2016). As a result, food sharing represents a new sustainable business model within the sharing economy (Michelini et al., 2019). Consumers, who co-create value with organizations and with each other, are the key players in this economy (Nadeem et al., 2020), making peer-to-peer (P2P) platforms particularly popular. These platforms connect individuals and strengthen social networks within communities (Michelini et al., 2018; Mazzucchelli, 2021). However, empirical research on this topic remains limited, especially in the context of Bangladesh.

Despite the increasing use of digital platforms for various purposes, there is limited research on how urban female netizens in Bangladesh utilize these platforms to manage surplus food at the household level. While studies such as that by Jia et al. (2023) have explored changing food consumption patterns and influencing factors in Bangladesh, the role of digital technology in addressing food surplus management remains largely unexamined. Additionally, Akter and Disha (2021) investigated consumer behavior regarding app-based food delivery during the COVID-19 pandemic, revealing trust as a key factor influencing usage. However, their study primarily focused on food ordering rather than surplus food management. Furthermore, research on urban food waste in low- and middle-income countries, such as the work by Pedrotti et al. (2023), highlights food

waste challenges in urban supply chains but does not delve into the potential of digital solutions to mitigate household-level food waste among urban women in Bangladesh. The existing literature suggests a significant gap in understanding how digital platforms can be leveraged to support sustainable food management practices among this demographic.

### Defining Food Waste and Surplus Food

This study defines food waste as avoidable (or edible) food waste, which includes “Any substance – whether processed, semi-processed, or raw – that is intended for human consumption” and food “that has spoiled and is therefore no longer fit for human consumption” (Food Loss and Waste Protocol, 2016). While there are different interpretations of what would be considered edible based on cultural norms, this study used a more open definition and included items such as carrot and apple peels as edible even though some people prefer not to eat these parts of food. To address the large proportion of food waste originating from households, policies, strategies and education campaigns have been developed by numerous organizations and governments. The United Nations’ Sustainable Development Goals (SDGs) include a target for halving per capita food waste at the retail and consumer levels, which includes households (UNDP, 2020).

The ‘Love Food Hate Waste’ campaign, initiated by the Waste and Resources Action Programme (WRAP) in the United Kingdom to raise awareness and inspire action by consumers to reduce household food waste (WRAP, 2020), has been adopted by other countries including Canada (Love Food Hate Waste Canada, 2020), Australia (State of New South Wales, 2020) and New Zealand (Love Food Hate Waste NZ, 2020). Marketing promotions at the food retail level are for the most part outside of the consumers’ control but can lead to unplanned purchases that may in turn lead to wasted food (Lee, 2018; Li, et al., 2021).

**Figure 1: Food loss and food waste at different stages**

Figure 1 Food Loss and Food Waste occurs at different stages and places in the food value chain.

Food loss	Food waste
On farms losses can occur due to infected or diseased crops and poor harvesting techniques	In restaurants food can be wasted when excess food is not eaten by customers, or when too much is prepared that goes uneaten
On farms additional losses can occur due to exposure to direct sunlight, rough handling, etc.	In superstores food can be wasted if it goes unsold and expires
In storage facilities losses can occur due to humidity or inadequate temperature control	In households food waste can occur when left-over food is discarded
In factories processing losses can occur due to improper sorting, grading and packaging	In fresh markets food waste can occur when food spoils due to lack of refrigeration, rough handling and inadequate storage facilities

Source: Vernooij et al. (2021).

Food surplus covers a narrower scope than food waste. Papargyropoulou et al. (2014) define the amount of food produced exceeding human needs as food surplus. UNEP (2021) refers to food surplus as “food that is redistributed for consumption by people, used for animal feed or used for bio-based materials/biochemical processing”. Facchini et al. (2018) describe food surplus as food that is completely edible and reusable but is discarded by producers and retailers due to aesthetic reasons or low demand. Teigiserova et al. (2020) offer a narrower scope of the term that only includes the nutritional surplus of food that is fit for human consumption. In this research, food surplus is defined as food that can be redistributed for human consumption from the human food supply chain at the household level. In the literature, food surplus and surplus food are used interchangeably, so this research will use food surplus as a term representing both.

## **Theoretical Framework**

Analyzing how alternative distribution systems change in the digital world helps to highlight some core aspects of the sharing economy so as to see how the evolution of social media usage and mobile apps can be understood in the context of this phenomenon. The literature on the sharing economy is relatively recent, with significant developments beginning in the early 2000s. A notable boost in the concept came from Belk (2007, 2010). The emergence of the sharing economy can be attributed to several factors, including the rise of the Internet, which has enabled greater connectivity and access, the global economic crisis, increasing urbanization, and a growing emphasis on sustainable consumption (Bardhi and Eckhardt, 2012; Möhlmann, 2015).

Despite these developments, academics have struggled to agree on a precise definition of the sharing economy that encompasses its various forms. This lack of consensus can lead to confusion (Codagnone et al., 2016). Within the academic literature, the sharing economy is often defined as “an alternative to private ownership emphasized in both marketplace exchange and gift-giving, where two or more people can enjoy the benefits (or costs) that come from possessing a thing” (Belk, 2007, p. 127).

The sharing economy has been associated with two primary consumption models: access-based consumption and collaborative consumption. Access-based consumption involves shifting from selling products to selling access to them, meaning consumers pay for the use of goods rather than owning them (Bardhi and Eckhardt, 2012). Collaborative consumption includes practices such as bartering, trading, and swapping (Botsman and Rogers, 2010). Belk, however, critiques this definition by distinguishing “true-sharing,” which involves temporary access without compensation, facilitated through digital platforms. He argues that commercial platforms with revenue objectives do not fit his definition of the sharing economy (Belk, 2014).

To address the various definitions and clarify the concept, the UK Office for National Statistics defines the sharing economy as any “activity facilitated by digital platforms that enable people or businesses to share property, resources, time, or skills, unlocking previously unused or under-used assets” (ONS, 2016, p. 5). For our study, we adopt the more comprehensive definition proposed by Codagnone et al. (2016, p. 22), which highlights the role of digitalization: “The sharing economy refers to a broad range of digital commercial or non-profit platforms that facilitate exchanges among various players through multiple interaction modalities (P2P, P2B, B2P, B2B,



and G2G), enabling consumption or productive activities leveraging capital assets (money, real estate, equipment, cars, etc.), goods, skills, or time.”

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Fred Davis introduced the Technology Acceptance Model (TAM) in 1985 with the intention of both improving the understanding of user acceptance processes of information systems and helping in the evaluation of new systems before their implementation (Davis, 1985). TAM was established using as a conceptual framework the Stimulus-Organism-Response model (S-O-R), a concept proposed by the psychologist Robert Woodworth in 1954 as a functionalist extension of the behavioral formulation called Stimulus-Response (S-R) (Buxbaum, 2016). Functionalism refers to a psychological philosophy that considers mental life and behavior in terms of active adaptation to the person's environment (Leahey, 2017). Particularly, TAM proposes that system usage is determined by the behavior intention of system usage, and this intention is jointly determined by the person's attitude towards using the system and perceived usefulness. Moreover, the attitude is cooperatively determined by perceived usefulness and perceived ease of use, and the latter determines perceived usefulness. Finally, both perceived usefulness and perceived ease of use are determined by external variables.

TAM has been the predominant model for understanding user acceptance processes of information systems in many diverse settings in the last decades. Viswanathan Venkatesh and colleagues formulated the Unified Theory of Acceptance and Use of Technology (UTAUT), this model unified conceptual and empirical similarities from existing theories about the user acceptance processes of information systems (Venkatesh et al., 2012). Precisely, UTAUT emerged from the empirical comparison of seven models: the technology acceptance model, the theory of reasoned action, the motivational model, the theory of planned behavior, the model of PC utilization, the innovation diffusion theory, and the social cognitive theory. The empirical results indicated that UTAUT can explain approximately 70% of the variance in behavior intention to use a new system. This score significantly exceeds the results delivered by the other models analyzed, which ranged

between 17% and 53%. By encompassing the combined exploratory power of individual models and key moderating influences, the UTAUT model progresses in cumulative theory while maintaining a parsimonious structure (Rondan-Cataluña et al., 2015).

In order to adapt UTAUT to a consumption context, instead of its professional framework, Venkatesh et al. proposed UTAUT 2 (Venkatesh et al., 2012). UTAUT 2 attempts to explain on an aggregate basis why individuals use information technology that they have at their disposal. In particular, UTAUT 2 proposes that use behavior (USE), defined as the frequency of information technology usage, is jointly determined by behavioral intention (BI), defined as the degree to which a person has formulated conscious plans to perform or not perform some specified future behavior (Patricio et al., 2019).

## **Hypotheses and the Conceptual Framework**

### ***Food Waste Awareness***

In Schwartz's norm activation theory and Stern's value-belief-norm theory, awareness of environmental issues is a key factor influencing pro-environmental behavior. Schwartz (1977) defines awareness of consequences as understanding how one's actions impact others, while Chen describes food waste awareness as recognizing the harmful effects of food waste. Food waste awareness plays a significant role in sustainable food consumption, as it positively affects the intention to purchase suboptimal products, oddly shaped food, and value-added surplus products. Some researchers have found that food waste awareness indirectly affects the intention to purchase suboptimal food, though not all studies confirmed this link. In this study, food waste awareness is expected to influence consumers' willingness to buy surplus food as a means to reduce waste. The hypothesis is postulated as follows:

**H1:** Food Waste Awareness is positively related to behavioral intention in the adoption of social media such as Facebook, Instagram and a fictitious App such as *BDHomeFoodSavers* among the young urban female netizens.

### ***Environmentalism***

Environmentalism, as explained in the given context, refers to the awareness and concern for environmental issues that motivate individuals to engage in pro-environmental behaviors. Traditionally, promoting environmentalism has focused on highlighting benefits to others or nature, often driven by altruism, as seen in seminal literature. This behavior stems from the desire to act responsibly for the greater good, as well as personal exposure to green products, which can further encourage environmentally conscious actions. However, environmentalism can also be linked to self-interest, where individuals engage in green consumption not only out of concern for the environment but also to signal their social status. Status consumption orientation explains how individuals seek to improve their social standing through conspicuous consumption of environmentally friendly products, often to be seen by others as pro-environmental or "green consumers." This suggests that, in addition to altruism, environmentalism can serve as a tool for

social differentiation, where individuals use sustainable consumption as a way to showcase their environmental values and elevate their social status.

Environmentalism encompasses individuals' overall attitudes and behaviors toward protecting the environment, including their perceptions, emotions, knowledge, and values. It reflects how people engage in environmental behavior based on their beliefs about the impact of their actions. In the context of food consumption, environmental concern drives positive behavior toward food waste prevention, such as purchasing surplus food from food-sharing platforms. Previous studies show that environmental concern enhances purchase intentions for suboptimal food and food surplus, and influences the use of applications designed to reduce food waste. Thus, consumers with strong environmental concerns are more likely to choose food products that offer environmental benefits and support food-sharing initiatives (Hua, Shannon, Haider and Moschis, 2023).

**H2:** Environmentalism is positively related to behavioral intention in the adoption of social media such as Facebook, Instagram and a fictitious App such as *BDHomeFoodSavers* among the young urban female netizens.

### ***Trust***

Trust manifests itself in various business relationships. Researchers constantly explore the intended conceptualization of trust across research disciplines in the offline context (Li, Bai, and Xi, 2012), online environment, and sharing economy (Szabo and Gupta, 2020). Early IT research conceptualizes trust as the extent to which an individual believes that the use of technology is reliable and credible (McKnight and Chervany, 2001). Further research suggests a complex and multidimensional concept of trust (Kim et al., 2005). Particularly, IT researchers recognize trust as combining both cognitive and affective elements considering that trust decisions commonly involve reasoning and feeling (Komiak and Benbasat, 2004). These decisions become less cognitive (or more affective) when they are away from the service providers, as in the case of the sharing economy (Hawlitschek, Notheisen, and Teubner, 2018).

Trust-related concerns in transactions involve privacy (e.g., anonymity, opt-in, and opt-out), security, and other associated risks per se. Furthermore, trust in the food-sharing context is a perception of the honesty, integrity and reliability of others—a “faith in a human being.” For example, some people seem to have a huge lack of trust in unknown others, thinking that leftovers would be unhealthy or even polluted. To accept uneaten food, people need to trust that strangers will not do something malicious to hurt others! Building on Earle and Siegrist’s (2006) definition of generalized trust and extending Hawlitschek et al.’s (2016) definition of trust in the sharing economy, this study thus conceptualizes trust in the present context as “the affective belief that allows consumers to willingly become vulnerable to uneaten food providers via P2P platforms after having taken surplus home food characteristics into consideration.” Accordingly, the following hypothesis is postulated.

**H3:** Trust is positively related to behavioral intention in the adoption of social media such as Facebook, Instagram and a fictitious App such as *BDHomeFoodSavers* among the young urban female netizens.

## ***Habit***

Habit is defined as the extent to which people tend to perform a behavior automatically because of learning and as an antecedent of behavioral intention. Similarly, the Habit variable is also directly related to the use of a particular technology. So, the hypothesis is postulated as follows.

**H4:** Habit is positively related to behavioral intention in the adoption of social media such as Facebook, Instagram and a fictitious App such as *BDHomeFoodSavers* among the young urban female netizens.

## ***Community Social Support from Digital Media***

Social support, a concept rooted in sociology, involves actions like offering advice, sharing emotional concerns, and providing information that fosters feelings of love, support, respect, appreciation, and group belonging (Cobb, 1976; Crocker and Canevello, 2008; Rozzell et al., 2014). Online interactions are also capable of delivering social support (Turner, Grube, and Meyers, 2001; Wang, Zhang, and Zeng, 2019) with considerable social benefits (Liang et al., 2011; Obst and Stafurik, 2010). These connections fulfill psychological and social needs, helping individuals feel supported and encouraging mutual relationships (Laurenceau, Barrett, and Pietromonaco, 1998).

The literature recognizes social support as a multidimensional construct (Cohen and Hoberman, 1983; Nadeem et al., 2020; Wang et al., 2019), with emotional and informational support being the most relevant in online settings (Liang et al., 2011; Xie, 2008). Emotional support refers to expressing empathy and concern, which enhances users' sense of belonging and commitment to a community (Lin and Lu, 2015). Informational support involves sharing advice, knowledge, and insights that help others address problems, fostering trust and a sense of community (Liang et al., 2011; Chen and Shen, 2015).

Previous research has explored the impact of social support in online communities on member behavior (Lin, 2011; Oh, Ozkaya, and LaRose, 2014; Sheikh et al., 2017, 2019; Zhang et al., 2014; Zhou, 2019). Findings indicate that social support positively influences relationship quality, trust, and engagement, encouraging members to participate, share ideas, and assist others. In the sharing economy, social support plays a pivotal role (Nadeem et al., 2020), with community involvement shaping the consumer sharing experience and the platform's success (Mohlmann, 2015; Abrate and Viglia, 2019; Barnes and Mattsson, 2016). Some studies suggest that platforms should be designed with social support in mind to create a supportive environment, establish social influence, and motivate users to remain engaged (Meedya et al., 2020; Zhou, 2019). On food-sharing platforms, which often involve interactions among strangers (Harvey et al., 2019), social support is crucial for encouraging participation, sharing, and fostering lasting relationships (Ter Huurne et al., 2017). The following hypothesis has been formulated.

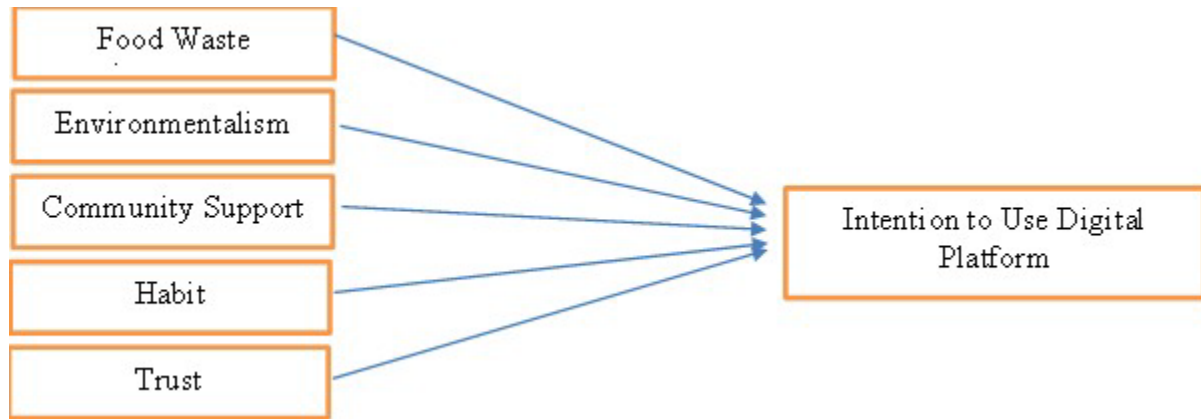
**H5:** Community social support has a significant and positive effect on behavioral intention in the adoption of social media such as Facebook, Instagram and a fictitious App such as *BD FoodSavers* among the young urban female netizens.

## Intention to Use Digital Platforms

Individual intention reflects the level of effort people are prepared to invest in performing a behavior. Generally, higher intention correlates with a greater likelihood of carrying out the behavior (Hua, Shannon, Haider and Moschis, 2023). In this regard, UTAUT 2 helps to explain on an aggregate basis why individuals use information technology that they have at their disposal. In particular, UTAUT 2 proposes that use behavior (USE), defined as the frequency of information technology usage, is jointly determined by behavioral intention (BI), defined as the degree to which a person has formulated conscious plans to perform or not perform some specified future behavior.

Based on the developed hypotheses above and according to the objectives of the study, the conceptual framework has been formulated as in Figure 2.

**Figure 2: Conceptual Framework**



## Research Method

This study collected data from 115 urban young females from various locations in the capital city Dhaka such as Gulshan, Dhanmondi, Uttara and Gazipur areas as this segment has more access to technology compared to rural areas. A bilingual questionnaire (English and Bengali) was used. Each participant was asked to provide their consent before participating in the survey. This study opted for purposive sampling (non-probability sampling procedure) to select the respondents for this research. Five responses were discarded due to the straight-lining issue.

## Instruments

Data was collected using a structured questionnaire comprising items adapted from reliable and validated instruments based on existing literature. To ensure the readability, validity, clarity, and relevance of the instrument, the questionnaire was pre-tested with a sample of 2 academicians. The survey was conducted during May 2024. Items measuring consumers' perceptions regarding environmental, social and economic responsibilities were adapted from Alvarado-Herrera et al.

(2017). Food waste Awareness items were adapted from Hua (2023), community support items from Liang et al. (2011), environmentalism items from Dunlap and Van Liere (1978), items of habit from Ramirez-Correa (2019), items of trust Hsieh et al. (2021), and items of intention to use digital platforms from Lu, Zhao, and Wang (2010). Based on a 5-point Likert Scale, the respondents were asked to indicate their degree of agreement or disagreement with each statement.

### Data Analysis and Findings

The majority (49.1%) of the respondents were 21-25 years old and 59.1% had an income of less than 10,000 Tk. Detailed demographics of the sample including the breakdown of the respondents' distribution based in public and private universities is presented in Table 1.

**Table 1: Demographic Profile of the Respondents**

<b>Age</b>	<b>N</b>	<b>%</b>
15-20 years	2	1.8
21-25 years	54	49.1
26-30 years	40	36.4
31-35 years	2	1.8
36-40 years	4	3.6
41-45 years	8	7.3
<b>Total</b>	<b>110</b>	<b>100</b>

<b>Income</b>	<b>N</b>	<b>%</b>
<10,000 Tk	65	59.1
11,000-20,000 Tk	17	15.5
21,000-30,000 Tk	14	12.7
31,000-40,000 Tk	8	7.3
>50,000 Tk	6	5.5
<b>Total</b>	<b>110</b>	<b>100</b>

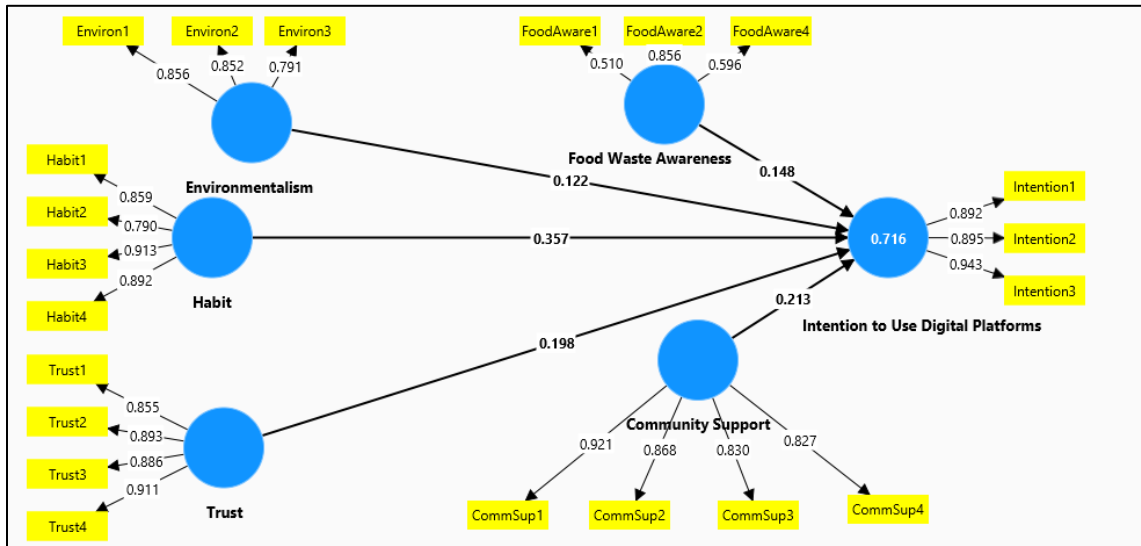
<b>Occupation</b>	<b>N</b>	<b>%</b>
Student	68	61.8
Self-employed	12	10.9
Teacher	15	13.6
Business Person	1	9
Other (Banker, lawyer, housewife, etc.)	14	12.7
<b>Total</b>	<b>110</b>	<b>100</b>

<b>Marital Status</b>	<b>N</b>	<b>%</b>
Single	71	64.5
Married	36	32.7
Divorced	2	1.8
Other	1	0.9
<b>Total</b>	<b>110</b>	<b>100</b>

To assess the model, the researcher has used SmartPLS4 to estimate the parameters in the outer and inner models. PLS tries to maximize the variance explained by the dependent variables. It offers many benefits with respect to distribution requirements, type of variables, sample size and the complexity of the model to be tested. The researcher has applied PLS path modeling with a path-weighting scheme for the inside approximation (Chin, 1998; Tenenhaus et al., 2005; Wetzels et al., 2009). Then, the researcher applied the nonparametric bootstrapping approximation (Chin, 1998; Tenenhaus et al., 2005; Wetzels et al., 2009) with 5000 resampling to obtain the standard errors of the estimates. The measurement model from SmartPLS output is shown in Figure 3.

**Figure 3: Measurement Model from SmartPLS Output**



**Construct Reliability and Validity**

Based on the results of the structured equation modeling (Table 2), all the constructs have met the satisfactory level (as suggested by Hair et al., 2017) of Average Variance Extracted (AVE) result of >0.5 (Hair et al., 2010). In addition, all the constructs have also met the satisfactory level of Convergent Reliability (CR) result of >0.7 (Hair et al., 2010). The loadings of the model for this study are equal to and greater than 0.708, indicating a latent variable, which can explain at least 50 percent of the indicator’s variance which exceeded the recommended value of 0.5 (Hair et al., 2010). Indicators with loading less than 0.5 such as FoodAware3, CommSup5, CommSup6 were removed to enhance the construct reliability.

**Table 2: Result of the Measurement Model**

Constructs	Cronbach’s alpha	Composite reliability (rho a)	Composite reliability (rho c)	Average Variance Extracted
Food Waste Awareness	0.810	0.821	0.811	0.562
Environmentalism	0.781	0.790	0.872	0.695
Trust	0.909	0.913	0.936	0.786
Habit	0.887	0.901	0.922	0.748
Community Support	0.885	0.903	0.921	0.744
Intention to use Digital Platforms	0.896	0.897	0.936	0.786

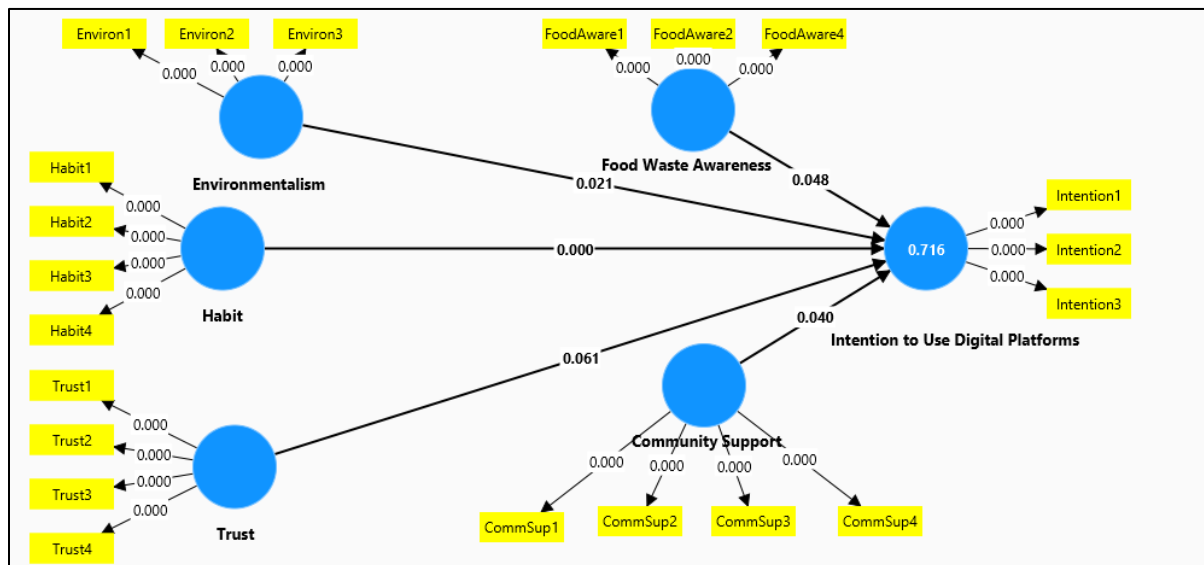
## Assessment of the Structural Model

Researchers evaluate the structural model to test the hypotheses. As shown in Figure 2 and Table 3, four out of the five hypotheses were supported. Food waste awareness ( $\beta = .148, p < 0.05$ ), Environmentalism ( $\beta = .122, p < 0.05$ ), Habit ( $\beta = .357, p < 0.01$ ) and Community Support ( $\beta = .213, p < 0.05$ ) were positively related to intention to use digital platforms among the urban female netizen in Bangladesh. Thus H1, H2, H4 and H5 were supported while H3 was not supported. The main outputs of the structural model (SmartPLS) are shown in Figure 4.

## Discussion

Food waste awareness was hypothesized to be positively related to the intention to use digital platforms to manage surplus home food among the female urban netizens in Bangladesh. This finding is also supported by previous researchers (e.g. Hua et al., 2023; Sestino et al., 2023). However, the relationship between trust and intention to use digital platforms (H3) in this study was not supported. The R-Squared for intention to use a digital platform (0.716) indicates a substantial predictive power of the model. It also indicates that 71.6 percent of the variance for intention to use digital platforms such as Facebook, Instagram, and a fictitious App (*BDHomeFoodSaver*) accounted for by factors such as Environmentalism, Food Waste Awareness, community support, trust and habit of the urban young female netizens in Bangladesh.

Figure 4: Structural Model (SmartPLS Output)





**Table 3: Path Coefficients and Hypothesis Testing**

<b>Hypothesis (H) and Path</b>	<b>Standard</b>	<b>t-Statistics</b>	<b>P Value</b>	<b>Decision</b>
H1: Food Waste Awareness → Intention to Use Digital Platforms	0.148	1.667	0.048	Supported
H2: Environmentalism → Intention to Use Digital Platforms	0.122	2.041	0.021	Supported
H3: Trust → Intention to Use Digital Platforms	0.198	1.550	0.061	Not Supported
H4: Habit → Intention to Use Digital Platforms	0.357	3.845	0.000	Supported
H5: Community Support → Intention to Use Digital Platforms	0.213	1.749	0.040	Supported

### Conclusion and Recommendations

The study highlights the critical role of digital platforms and mobile applications in addressing food waste and promoting sustainable consumption practices, particularly in urban areas of Bangladesh. With rapid urbanization, economic growth, and increasing smartphone penetration, the country's youth, especially young female netizens, are well-positioned to lead this shift toward more sustainable household food management practices. However, despite their digital presence, women are still underrepresented on social media and digital platforms, indicating barriers that need to be addressed.

Food-sharing platforms such as the fictitious *BDHomeFoodSavers* app can provide an innovative solution for reducing food waste at the household level. The study found that 71.6% of the variance in the intention to use such platforms can be explained by factors including environmentalism, food waste awareness, trust, habit, and community support. Digital technologies have transformed consumer behavior globally, and the rise of e-commerce and online services in Bangladesh presents a unique opportunity to extend these benefits to sustainable food practices.

Despite challenges such as poverty and undernourishment in some regions, there are promising signs of growth and improvement, particularly in Bangladesh's urban areas. The increasing digital literacy among urban youth, particularly women, presents an opportunity for targeted interventions. To capitalize on these opportunities, the government and private sectors must work together to promote sustainable food practices, raise awareness, and provide platforms for reducing food waste.

This study has outlined several recommendations to enhance the intention to use digital platforms such as Facebook, Instagram, and a fictitious App (*BDHomeFoodSaver*) among the urban female netizens in Bangladesh. Firstly, to promote the use of digital platforms like *BDHomeFoodSavers*, efforts should be made to improve digital literacy among women, particularly in urban areas. This can be done through government programs, NGOs, and community-driven initiatives that provide

training on how to use mobile apps and engage with digital platforms effectively.

Secondly, government policymakers should outline strategies to encourage the use of digital platforms for sustainable food management. This includes offering incentives for companies developing food-sharing apps, creating public awareness campaigns about food waste, and incorporating digital tools into national strategies for reducing food waste and hunger. Government regulations should clearly define and forbid food waste; additionally, they should be applied across retail to households. Both edible and inedible food should be included in the law's definition of "food waste," along with the various points in the food supply chain where waste can happen.

Thirdly, given the underrepresentation of women on social media platforms in Bangladesh, targeted campaigns should aim to raise awareness about the environmental, social, and economic benefits of reducing food waste through digital platforms. Campaigns should emphasize community support and social responsibility to engage young female netizens.

Fourthly, sustainable consumption through education should be promoted. Schools and universities can incorporate sustainability and food waste reduction into their curricula. Public awareness campaigns, workshops, and community events should be organized to educate urban youth on the importance of sustainable food consumption and how digital platforms can help.

Fifthly, collaboration should be encouraged among stakeholders. Cooperation between governments, businesses, and local communities is essential for the success of digital food-sharing platforms. Stakeholders should work together to create a supportive ecosystem that encourages the reduction of food waste while promoting environmental and economic sustainability.

Lastly, participation in food-sharing platforms should be incentivized. Offering rewards or benefits, such as discounts or coupons for food-sharing app users, can motivate greater participation. Incentives can be provided by partnering with food retailers, local businesses, and restaurants to encourage users to engage with these platforms regularly.

By focusing on these areas, Bangladesh can leverage its growing digital infrastructure to reduce household food waste, foster sustainable consumption practices, and create a more inclusive and environmentally conscious society and thus align with its mission with the United Nations's SDGs 2030, intending to eradicate hunger and provide basic nutritional education and access to fresh food. The study's outcome will help align with the Dhaka Food Agenda 2041, promoting food security, equitable access to nutritious food, and reducing the environmental impact of food production. Future studies can incorporate the intention to use digital platforms for surplus home food management among rural female consumers, and conducting a comparison between the urban and rural female netizens could produce further insights for the policymakers.

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# **In-Vitro Fertilization (IVF) Tourism from Bangladesh's Perspective**

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## **Abstract**

Based on a qualitative study of twenty Muslim infertile Bangladeshi couples of diverse socio-economic backgrounds at two IVF institutions in India, the current study aims to determine the extent to which couples go outside of Bangladesh for IVF tourism and what motivates individuals to pursue reproductive therapy abroad despite its significant economic expense.

## **Keywords**

In-Vitro fertilization tourism, Infertility, Reproductive therapy

## **Summary**

Fertility tourism is a global phenomenon that originated in the 1970s, although it continues to expand in terms of individual wellness and economic benefits for service providers. Furthermore, what sets reproductive tourism apart from other forms of tourism is its emphasis on fertility therapies as the primary driving force behind overseas travel (Hall, 2011). Strickland and Latten's (2023) research identifies various terms for fertility tourism, such as procreative tourism, reproductive tourism, reproductive travel, cross-border reproductive care (CBRC), fertility holidays, and in vitro fertilization (IVF) tourism. Primary and secondary infertility impact approximately 48.5 million and 185 million couples globally, respectively (Nahar, 2022), and the number of infertile patients in Bangladesh has also increased over the past decade (Hossain et al., 2016).

Following the birth of the first IVF baby in the United Kingdom in 1978, Bangladesh welcomed its inaugural IVF baby in 2001 at a private hospital, and later in 2023 at a government hospital, both of which made headlines in the media. However, it is evident that many IVF babies have been born to infertile couples to date. Despite the lack of precise statistics on the number of IVF babies born in Bangladesh, the treatment is experiencing greater success than in other countries where IVF is not even available. There is also no exact statistics on the number of IVF-outbound patients in Bangladesh. Although there is an increasing body of literature on medical tourism as well as reproductive tourism globally (Bergmann, 2011; Deomampo, 2013; Hall, 2011; Inhorn, 2010; Inhorn, 2011; Nahman, 2011; and Whittaker and Speier 2010), certain articles by Bangladeshi authors like Hossain (2016) and Nahar (2022) examine the motivations behind medical tourism and reproductive tourism as well.

This study examines the experiences and attitudes of Bangladeshi Muslim patients regarding IVF, comparing findings within Bangladesh and internationally. Purposive and snowball sampling methods selected twenty Sunni Muslim IVF patients, ten females and ten males from various professional groups. Subsequent interviews were conducted. The researcher employed a semi-

structured questionnaire for the interviews, which spanned between 45 minutes and 1 hour. In India, the researcher conducted interviews with eighteen participants in their local vicinity and with others at the researcher's residence. All participants live in rented flats within a mile of the clinics, including the researcher. The researcher selected certain themes from the interview guide and derived others from the perspectives of the participants. The data were then transcribed for analysis. All of the participants sought therapy in India, while fourteen of them sought treatment internationally, traveling to the USA, UK, Singapore, or Thailand. Participants were inquired about the treatment facilities in Bangladesh and India. The age range for female participants is 25 to 45, while for male participants it is 30 to 55. Two IVF institutions in India were selected as research sites. None of the participants were identified as beneficiaries of donor eggs, embryos, sperm, or surrogacy services.

The study reveals that the most common cause of outbound IVF tourism is word-of-mouth referrals, such as those from friends, family, and coworkers; lack of good embryologists; presence of good equipment abroad, expeditious service and collaboration; doctor and staff misbehavior; to mitigate stigma; lack of information on IVF facilities in Bangladesh; to avoid bodily harm; and lack of IVF doctors and nurses. Participants selected outbound tourism irrespective of varying economic statuses, based on the findings of this study. The government should take some steps to adopt and implement policies for a better future for Bangladesh IVF. Therefore, it is crucial to integrate IVF facilities into all health service sectors, hire IVF tourism agents once the treatment becomes available, and enhance the marketing of healthcare institutions. The factors contributing to the increase in outbound IVF tourism are analyzed through a critical medical anthropology lens.

In discussion, this research seeks to comprehend the perspectives and experiences of Bangladeshi patients who pursue outbound tourism for IVF treatment. The results of this paper also exhibit similarities and differences with other studies in certain aspects. Firstly, participants in Bangladesh and overseas countries, where they have received or are receiving treatment, anticipate expeditious service. In addition to ensuring secrecy, it is also demanded from hospital personnel. Bangladesh and India have observed physical discomfort during therapy. This type of soreness is certainly a normal aspect of this treatment. Thirdly, participants indicate that misconduct among doctors and nurses occurs in Bangladesh and India. They suggested that the staff in both countries might behave poorly, potentially because of the overwhelming number of patients. Fourthly, the costs of IVF therapy are roughly the same between Bangladesh and India; however, supplementary charges such as lodging and airfare must be considered. Frequent travelers face markedly elevated expenses, often doubling or tripling.

The researcher of this study advocates for increased research on various regions of India and Bangladesh, as well as other nations where IVF tourism is well-established, to comprehend the effective implementation of this treatment in Bangladesh. Non-English sources of literature may contain important information about IVF globally, which this paper lacks. Expanding this study to encompass issues like surrogacy and embryo donation could provide a comprehensive understanding of IVF in Bangladesh.

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# **Prospects and Challenges of Adopting Zero Liquid Discharge Technology for Textile Dyeing Process Industry in Bangladesh and Policymaking Based on Financial Analysis**

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## **Abstract**

The textile dyeing processing industry in Bangladesh is a major contributor to the nation's economy but also a significant source of industrial pollution, primarily water pollution. Zero Liquid Discharge (ZLD) technology, which recycles all generated wastewater, offers a promising solution to mitigate these environmental impacts. This paper examines the prospects of implementing ZLD in the Bangladeshi textile industry, identifies the challenges hindering its adoption, and explores how financial analysis can guide effective policymaking.

## **Keywords**

Environmental degradation, Zero Liquid Discharge Technology, Textile dyeing process, Policymaking based on financial analysis

## **Summary**

The textile dyeing process industry is a crucial segment of the broader textile sector, significantly impacting the nation's economy and employment landscape. This industry, vital for adding value to fabrics by enhancing aesthetic appeal and functionality, plays a key role in fulfilling the global demand for finished textiles. Economically, it contributes substantially to Bangladesh's export revenues, reinforcing the textile sector's position as a top export earner. The industry also generates a significant number of jobs, supporting over a million workers directly and millions more indirectly through its extensive supply chains. These jobs are critical in urban and peri-urban areas, where large dyeing factories and related services are concentrated. Additionally, the sector's demand for skilled and unskilled labor helps reduce unemployment, drives technological advancement, and promotes workforce skill development. Thus, the textile dyeing process industry is not only pivotal in maintaining economic growth but also in fostering socio-economic development across various community levels in Bangladesh.

The textile dyeing process industry, despite its economic significance, is notorious for its adverse environmental impact causing groundwater depletion and surface water pollution. The process of dyeing one ton of fabric requires approximately 140 tons of water and 300 to 400 kilograms of



sodium salt. This industry is one of the largest contributors to water pollution in the country, largely due to the discharge of untreated or inadequately treated dye wastewater into local water bodies. Such effluents, laden with harmful chemicals, salts, and dyes, lower oxygen levels in water bodies, adversely affecting aquatic life and ecosystems, and increase the salinity of nearby ground and water bodies. The industry's substantial use of groundwater also intensifies water scarcity challenges in many regions. To mitigate these environmental issues, there is an urgent need for strict regulatory oversight, the implementation of cleaner production methods, and a commitment to sustainable practices within the industry.

ZLD technology is an advanced wastewater treatment process designed to eliminate liquid waste discharge from industrial operations. By recycling and purifying wastewater, ZLD systems recover and reuse virtually all the water used, leaving behind only solid waste. This process typically involves a combination of sedimentation, biodegradation, sludge separation, multi-stage filtration, evaporation, and crystallization techniques to remove contaminants, allowing industries to achieve near-total water sustainability. Adopting ZLD technology significantly reduces environmental impact by preventing the release of pollutants into water bodies, making it an essential solution for industries aiming to minimize their ecological footprint and comply with stringent environmental regulations.

The adoption of ZLD technology in Bangladesh's textile processing industry represents a significant opportunity and challenge in the pursuit of environmental sustainability. This paper examines the prospects and obstacles of implementing ZLD technology and the role of financial analysis in shaping effective policymaking. The potential benefits of ZLD are substantial: it can drastically reduce water pollution, enable the recycling and reuse of wastewater, and ensure compliance with stringent environmental regulations, thus enhancing the industry's sustainability profile. However, the challenges are equally formidable, including high capital and operational costs, complex technical requirements, and the need for specialized skills and infrastructure.

To examine the economic feasibility of Zero Liquid Discharge (ZLD), a ZLD system was configured for a factory processing up to 40 tons of fabric daily, which produces around 4800 cubic meters of wastewater. This system features a multi-stage filtration process, achieving water recovery rates of approximately 70% after the first stage, 92% after the second, 96% after the third, and 98% following the fourth stage. Additionally, the system recovers about 70% of the salt used, enabling its reuse.

A comprehensive cost analysis, including capital investment, operational, and maintenance expenses, has been conducted for each stage. Additionally, the amortization costs at various interest rates have been calculated to provide a clearer financial overview. The marginal cost of the ZLD over a conventional wastewater treatment system, its amortization cost, and the return-on-investment period have been calculated assuming the basic value of water and the market value of recovered salt. The marginal costs of ZLD over traditional wastewater treatment, the amortization expenses, and the return-on-investment (ROI) period were calculated based on the assumed values of water and the market value of the recovered salt.

This study performs a thorough financial analysis to evaluate the cost-effectiveness and long-term economic feasibility of implementing ZLD technology. It aims to determine the level of water recovery that is financially viable for the manufacturers. The analysis highlights the necessity of

supportive government policies, such as financial incentives, subsidies, and technical assistance, to reduce the financial burden on textile manufacturers. Additionally, it proposes considering water pricing as a strategy to encourage water conservation and economically justify the adoption of ZLD technology. If water is priced at only 10 paisa per liter, the return on investment is only 3 to 5 years, and the system becomes financially viable for the manufacturer.

# Testing User-Segmentation Model in Determining Digital Communication Usage Guidelines for Children in Bangladesh

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## Abstract

In this techno-centric age, the use of digital communication devices (mobile, tablets, i-pod, etc.) has become a part and parcel of the daily life of almost all heterogeneous groups of people. The fact that the young people of Generation Alpha become quite habituated to technology-embedded activities from such an early stage when even their basic learning has not got a proper shape might affect their well-being in the long run. What's more, the emergence of global technological icons in the Bangladeshi market has made access even easier and available to every house. Therefore, children of today unknowingly get habituated with such digital communication devices that can ruin their actual learning and socialization process. Unfortunately, none of the companies provides any categorized usage guidelines for the consumers. Hence, there is a need to prepare a usage guideline particularly focused on children from the social well-being perspective. This study aims to segment the child users of digital communication devices demographically and usage-wise and to propose usage guidelines as per these segments from the social well-being perspective in Bangladesh. The study will use demographic (age, gender, education) and behavioral (i.e. usage rate, occasion, buyer readiness stage) factors to segment the young generations before developing the user guidelines for the electronics companies in Bangladesh. The target population will be the country's children attending kindergarten, primary and secondary schools. Based on the demographic and behavioral factors, the Generation Alpha population will be grouped into *Effective User*, *General User*, *Intense User*, *Mild User*, and *Amateur User*. Both observation and survey questions will be used to gather primary information. The recommendation will be made accordingly to ensure effective learning and protect children from technological addiction.

## Keywords

Bangladesh, Digital communication, Societal well-being, User-Segmentation

## Introduction

In this techno-centric age, the use of digital communication devices has become a part and parcel of daily life for almost all heterogeneous groups of people. In this study, we will consider mobile, tablets, i-pod, etc. to find out their usage pattern among the children (or Generation Alpha) of Bangladesh who exceed Generation Z in being 'hyper-connected' and living a high-tech lifestyle with prolific use of social media. According to a handsome book by Diana Oblinger and James Oblinger (2005), among children aged 8 to 18, 96 percent have gone online, seventy-four percent have access at home, and 61 percent use the Internet on a typical day. Children aged six or younger spend an average of two hours each day using screen media (TV, videos, computers, video games).

Half of the children in this age group have used a computer; among 4-to-6-year-olds, 27 percent spend over an hour a day at the keyboard. What's noteworthy, "It's not just teenagers who are wired up and tuned in, it's babies in diapers as well." (Diana and James, 2005)

While earlier generations were introduced to information through print, this generation takes a digital path. Thirteen-to-seventeen-year-olds spend on average 3.1 hours a day watching TV and 3.5 hours with digital media. Consistent with the multitasking found in older students, it is the norm for children and teenagers to be online while simultaneously watching TV, talking on the phone, or listening to the radio. A sizable percentage of kids are reported to be visiting a site mentioned by someone on the phone, seen on TV, or mentioned on the radio. Children may be developing greater digital literacy than siblings who are just a few years older. For example, over two million American children (ages 6–17) have their own Web site. Girls are more likely to have a Web site than boys (12.2 percent versus 8.6 percent), and the ability to use non-text expression—audio, video, graphics—appears stronger in each successive cohort. Digital technology is thus displacing other traditional activities such as outside play, exercise, socialization and physical risk-taking (Bassiouni and Hackley, 2014)

### **Children's Importance as Consumers in the Digital Industry**

Earlier research has suggested that children spend up to six and a half hours per day in front of an electronic screen (Woodward and Grindina, 2000) although one study reported in the press suggested that children access far more internet time than their parents realize and do so from the age of three (Ward, 2013). This access to digital technology has the effect of exposing children to brand communications and internet marketing on an unprecedented scale. There is a high order of personal ownership of and engagement with mobile devices amongst children, including access to the internet and exposure to a wide range of information from online and offline adult media (Gunter et al., 2004).

There is, then, a sense that profound cultural shifts are being seen around the conduct and experience of children and teenagers. For example, unlike earlier generations, they are considered by the marketing industry to have a high degree of autonomy as consumers (Ekström, 2010), and they are regarded as having considerable influence in family consumer decision-making (Thomson et al., 2007; Tinson and Nancarrow, 2005; Marshall, 2010), with regard to not only toys and games but also collective decisions on the purchase of groceries, clothes, holidays, and even cars. However, their autonomy as consumers who have access to extensive marketing and consumer information online may not be matched by their control over when, where and how much they engage with digital technology in the absence of parental supervision (Weir et al., 2006).

### **Erosion of Childhood**

Researchers have noted that children are able to play video games that were designed for adults (e.g. Cross, 1997) although today it seems generally assumed that age ratings on computer games appear to be widely ignored by many parents, and by many children (Tufte and Rasmussen, 2010). Children have access via the internet to services and websites that are not age-categorized and may

have adult themes. It has been suggested that, in some respects, this might be contributing to the erosion of childhood itself (Postman, 1994).

Bounded as their autonomy may be, many children spend considerable time in their homes playing video and computer games, watching TV or communicating with friends via mobile devices (Burdette and Whitaker, 2005). As a consequence of this radical shift in childhood activity, there is a fear that children's physiological development, psychology and socialization may be different from that of previous generations. Researchers have suggested that today's children are seen as 'less' social and more impatient than previous generations since they may be more likely to spend their free time alone in their room rather than playing outside unsupervised or interacting with their parents (Weir et al., 2006; McNeal, 1999).

## Literature Review

The number of internet users in Bangladesh now stands at a minimum of 125 million (Jabbar, 2023). According to a country-wide survey (Anchal Foundation, 2024), some 67.5% of Bangladeshi children and youth spend their leisure time, 42.9% on communication needs, 24.9% playing online games or watching videos, 12.6% on online shopping, and 8% on financial requirements. The survey reveals that a significant portion of young students spend more time on non-productive activities on the internet. They chat with friends and dear ones for around 80 minutes a day on average (Prothom Alo, 2017).

Generation Alpha or Gen Alpha is the demographic cohort succeeding Generation Z. Their birth years fall in the years between the early 2010s and the mid-2020s. Named after alpha, the first letter in the Greek alphabet, Gen Alpha is the first to be born entirely in the 21st century and the third millennium. Most members of Gen Alpha are the children of Millennials. Recently an assessment was made in Bangladesh to understand the country's Gen Alpha. The assessment shows that most of the reviewed children have developed a sense of independent consciousness at a very early age. Having been exposed to vast resources, they are less dependent on their parents for basic queries (Sifat, 2022).

As the continuation of Gen Z, understanding their features can be useful in evaluating Gen Alpha too. A survey based in Malaysia on South and Southeast Asia's Gen Z reveals the following key features that apply to Gen Alpha too perhaps with a higher rate.

- ***Digitally popular, physically awkward:*** They enjoy staying at home with family and simply just being online. They also feel more comfortable talking to their friends via chat apps than face-to-face.
- ***Mobile is their lifeline:*** Almost all own a mobile phone, including 79% of those aged 13-15. The mobile has become an extension of the person like a body part of them and a gateway to the rest of the world.
- ***Discerning online:*** Being so exposed to social networks and seeing their predecessors fall for false news and rumors, they (Gen Z and Gen Alpha) are more cynical about information disguised as news on social networks; causing them to be more skeptical of news and information on the internet world.

- ***Digitally responsible:*** Most of them feel uncomfortable sharing their personal issues online. It is likely that they have taken lessons from their predecessors and learned not to become the victims of cybercrime.
- ***Socially conscious:*** Thanks to access to information and increasing awareness of social issues, they are concerned about social issues and wish to make a difference! The top concerns are “recycling and the environment”, “online privacy” and “freedom of speech”. “Social policing”, i.e. standing up for injustice or supporting a cause on social media.
- ***Smart and in the know:*** Undoubtedly, Gen Z and Gen Alpha have been well-equipped with knowledge from the internet and technology. Despite being young, their opinions are trusted by the family when it comes to decision-making for household purchases.

### **Children as Consumers in the Digital Economy**

Children’s consumption has steadily grown as a focus of research since the 1960s (Cook, 2012). Beastall (2008) notes that Gen Z (and well presumably Gen Alpha) children have an advanced relationship with technology which they hone from a very early age. The proportion of children between the ages of 5 and 16 who have bought or researched products online was estimated at 37% in 2004 (Greenfield, 2004). Today, this figure is likely to be a great deal higher. A 2008 industry study suggested that 70% of UK children knew the sites their parents used to shop online (Skinner, 2008), and a McAfee study (2012) suggested that 70% of teenagers hide most of their online activity from their parents or carers, so estimates of children’s online activity including consumption may be on the low side. An industry study found that American children spend 35 hours a week in media consumption, a rapid rate of growth since 2009, of which about a quarter consists of video gaming on computers, tablets and smartphones (Viacom, 2013).

The assumption that children are ‘getting older and younger’ is widespread, and, as we noted above, it is regarded as a truism in a marketing industry that now targets children as an autonomous, and quasi-adult, market segment. Given that much adult marketing is based on appeals to identity, it is relevant to explore the role of digital communication in children’s evolving sense of identity.

### **From Children to Kidults?**

Thus, digital media offer opportunities for identity play which formerly were not available to children. There is much concern that this is dangerous since children are enjoying autonomy online before they have either the social or economic skills to understand the risks or to evaluate their possible exploitation.

Engagement with digital media does not necessarily replace face-to-face interaction for children but can actively enrich it by creating spaces for expressing mutual interests and forming identification strategies. At the same time, there is an exposure to risk that must be negotiated as children lack adults’ experience in economic or social encounters. The internet can be a dangerous place, and more so for children. Nonetheless, while the questions of the ethics and morality of

children and the internet are pressing, it seems clear from our review that there is evidence from research to support the assumption that not only does access to digital communication technology mean that children today have a qualitatively different experience of growing up to previous generations, it is one that in many ways enables them to access the adult world prematurely, for good or ill.

### **Children's Influence on Family Purchase: From 'Pester Power' to 'Expert Power'**

Online communication once lacked the element of body language when it was confined to typed interfaces or voice-only technologies, but the development of social and video websites and technologies such as Skype or iPhone's 'FaceTime' is heightening the visual element of such communication. Children's use of digital communication may be fuelling a change in family dynamics, giving children more power because of their technical skills and ability to access online information. In many households, the children are more comfortable with digital technology than the parents, giving them a source of expert power (Tufte and Rasmussen, 2010; Tinson and Nancarrow, 2005; McDermott et al., 2006; Ekström, 2007; Sutherland and Thomson, 2003).

This power has had the effect of further lowering the age at which children seek and exercise autonomy in decisions that affect them (Sutherland and Thomson, 2003). They may demand equal right to adults to have their opinions heard (Thomson et al., 2007). Like adults, they exercise this right freely on social networking and mobile media, building confidence in certain forms of self-expression within peer environments. Ekström (2007) found that children are continuously socializing with their parents, not only prior to a purchase but also during and post the purchase incident. The process of children being socialized by peers and media and then influencing their parents has been defined as "retroactive socialization" by Riesman and Roseborough (1955 in Ekström, 2007).

Research done on previous generations has referred to children's influence on family purchases by "pester power" (McDermott et al., 2006). Pester power is defined as the effect of children nagging their parents to buy what they want. It has been argued that Generation Z children have moved from having "pester power" to having "expert power", with the result that children are regarded as "equal" to adults because of their confidence in digital communication technology (Ekström, 2007; Quortrup, 1994; Lee, 2001). Evidence for such a shift in the power of children within the family must be considered alongside evidence for a broader shift towards a Western model in which female family members have economic power through independent working and family matters are debated and discussed rather than simply being dictated by the older males based on traditional authority (McDermott et al., 2006; Tinson and Nancarrow, 2005; Stueve and Pleck, 2001; Moschis and Moore, 1979).

### **Socio-economic Effects of these Dynamics**

Underwriting this shift in the dynamic of family socialization and economic decision-making is an increase in children's financial resources. This arises partly from rising general affluence, and partly from shifting family models in which grandparents and parents are more willing to give

children money (Foot and Stoffman, 1998; Sutherland and Thomson, 2003). A further factor is the trend toward both parents working longer hours and spending less time with children, or divorced families in which single parents work long hours, leaving children with both the time and the emotional need to further exercise their autonomy through engagement with digital communications (Lee and Beatty, 2002; Tinson and Nancarrow, 2005; Sutherland and Thomson, 2003).

It has been argued that this change in family dynamics is the reason for the increase in children's media consumption as the screens have become more like "electronic babysitters" (Thomas, 2011) compensating for the absence of or lack of attention from parents or carers. Marketing agencies have noted these trends and increasingly treat children as a defined market segment to be targeted, magnifying the effects of children's economic empowerment and giving them a constitutive power that may undermine the structural power of parents (McDermott et al. 2006; Ekström, 2007). The rising incidence of dual-income families, single-parent families and 'blended' families has encouraged many parents to treat children more as adults, partly to compensate for a sense of parental guilt at a degree of perceived emotional neglect (Acuff, 1997). Children are, of course, astute at using this parental guilt to negotiate additional freedoms and resources (McDermott et al., 2006), thus further increasing children's autonomy as consumers.

### **Children's Diminishing Physical and Intellectual Development**

There is some evidence that the rise of video games and digital technology in children's lives has been accompanied by a fall in rates of physical activity, although it is difficult to establish a causal link. Children spending too much time indoors do not get enough vitamin D from sunlight exposure (Harrison, 2010), making them vulnerable to rickets. Finally, there is a well-reported obesity epidemic among children in many developed countries, and this is partly attributed to reductions in levels of outdoor play (Burdette and Whitaker, 2005; O'Donovan et al., 2013). There is no doubt that health problems due to physical inactivity have increased at the same time as children's use of video games has increased.

The possibility that children do not sleep enough because they are playing video games late at night may not affect only their physical health. There have been suggestions that increased cases of ADHD, associated behavioral issues and shortened attention spans in school may be connected to computer games (Hill, 2006; Chan and Rabinowitz, 2006). Some researchers have suggested that high exposure to digital communications such as games actively harms academic performance in children (Roberts et al., 2005; Bacigalupa, 2005).

### **User Segmentation Factors and Models**

All markets are heterogeneous. This is evident from observation and from the proliferation of popular books describing the heterogeneity of local and global markets. When reflecting on the nature of markets, consumer behavior and competitive activities, it is obvious that no product or service appeals to all consumers and even those who purchase the same product may do so for diverse reasons.



Thus, focusing on segments is at the core of organizations' efforts to become customer-driven; it is also the key to effective resource allocation and deployment. The level of segment aggregation is an increasingly important issue. In today's global economy, the ability to customize products and services often calls for the most micro of segments.

The determination of which set of variables or basis to use for segmentation of the market is critical. Conceptually, the guiding principle is fairly obvious. A good segmentation variable is one that explains variation in the use of the firm's products and services. If a proposed segmentation variable has no correlation to the choice or other important behaviors, it is clearly of little value. Practically, the approach is quite involved and requires consideration of the following issues. Should we segment on product usage patterns (e.g. users versus non-users or heavy versus light users)? Should we segment based on benefits sought (e.g. product performance versus convenience versus price sensitivity)? Should we use some other measure of consumer response to marketing variables (e.g. likelihood of buying a new product concept, response to price promotion, participation in a loyalty program)?

Approaches such as macro and micro-segmentation (Wind and Cardozo, 1974) and sequential clustering (Peterson, 1974) are often used in practice. Sequential clustering, for example, clusters on some market-based demographics followed by attitude (or benefit) clustering within each demographic segment. In both cluster-based design and hybrid design, the size and other characteristics (demographics, socioeconomic, purchase, etc.) of the segments are estimated. Classification procedures based on cluster analysis and variants thereof are especially useful in providing management with a data-driven view of segmentation.

Over the past fifty years, in Bangladesh, development and progression in economic growth have brought tremendous social changes in many aspects from its demographic profile to the shifting of workforce population. As demonstrated by Strauss and Howe (1992), similarities within a generation are attributed to social change. According to their generational theory, there is a recurrent cycle of same-aged groups with specific behavior patterns that change every 20 years, and thus each generation experiences a unique transition.

There are two behavioral segmentation variables according to Judy, Adel, and Raymond (2003). The first one forms groups of consumers based on the benefits they desire from the product. Seventy percent of online shoppers are found this way and can be segmented into two sub-groups:

- Bargain hunters, which include Hooked, Online and Single (16%), and Hunter-Gatherers (20%).
- Convenience shoppers, which include Time-Sensitive Materialists (17%), Brand Loyalists (19%), E-Bivalent Newbies (5%), and Clicks and Mortars (23%).

The second one forms groups based on the usage of products whose sub-groups are (1) light, medium and heavy product users and (2) brand loyal users (those loyal to the competitive product), switchers (who don't care which brand they use), and nonusers of the product.

Another segmentation of the young netizens can be based on 'six user segments' that are based on the active user's time online, pages, domains accessed, and the amount of time spent per webpage (McKinsey & Company, 2012). They are *Simplifiers* (who want end-to-end convenience), *Surfers*

(who want what's new), *Connectors* (who are novelty seekers), *Bargainers* (who look for a deal), *Routiners* (who want something special), and *Sportsters* (who desire highly interactive content).

There are four key variables for defining discrete clusters of online behavior that can help the segmentation of digital communication device users. These are (1) *session length* or the time a user stays online, (2) *time per page* or the average time a user spends on each page during a session, (3) *category concentration* or the percentage of time a user spends at sites belonging to the most frequented category, and (4) *site familiarity* or the percentage of total session time a user spends at familiar sites, defined as those previously visited four or more times. Then again, based on the duration, there can be occasionalization segments. For instance, some users ("Just the Fact") look for specific information from related sites (with a typical duration of 9 minutes), some users ("Quickies") concentrate on visits to two or fewer familiar sites extracting specific bits of information or sending e-mail (with a typical duration of 1 minute), some users ("Single Mission") want to complete a certain task or gather specific information (with a typical duration of 10 minutes), some users ("Loitering") go on leisure visits to familiar *sticky sites*, such as news, gaming, and entertainment sites (with a typical duration of 33 minutes), and some other users ("Surfing") with a typical duration of 70 minutes visit familiar sites with wide, but not deep, exploration and gravitate to sites that grab their attention immediately, such as shopping, online communities, and news.

## **Objectives and Methodology**

With the goal of testing a user-segmentation model in determining digital communication usage guidelines for children in Bangladesh, this study has set the following objectives:

1. To segment the child users of digital communication devices demographically
2. To segment the child users of digital communication devices according to usage
3. To propose usage guidelines as per segments of child users from social well-being in Bangladesh

The study will use demographic (age, gender, education) and behavioral (i.e. usage rate, occasion, buyer readiness stage) factors to segment the young generations before developing the user guidelines for the electronics companies in Bangladesh. The target population will be the country's kindergarten, primary and secondary schoolgoers. Based on the demographic and behavioral factors, the Gen Alpha population will be grouped into *Effective User*, *General User*, *Intense User*, *Mild User*, and *Amateur User*. Both observation and survey questions will be used to gather primary information.

The study is quantitative in nature, whereby a questionnaire will be used as the main data collection tool. Multi-stage cluster sampling will be used to randomly select respondents from Dhaka the capital city of Bangladesh. At least a hundred and fifty responses will be used for analysis. This matches the minimum requirement for statistical and factorial analyses (Tabachnick and Fidell, 1996). The data collection process will be carried out by trained and experienced enumerators and monitored by the researcher. The collected data will be then analyzed using SPSS, whereby descriptive analyses such as frequency, percentage and mean score will be performed to describe

the general findings of the study. Further analysis will use an independent T-test and Pearson product-moment correlation to find any differences or relationships that might occur.

## **Findings and Conclusion**

The findings should focus on the type, purpose, frequency, and duration of the use of digital communication technologies among children and teenagers in Bangladesh which would ultimately help to determine the usage guidelines for them. The recommendation will be made based on the different groups in Gen Alpha and the time, frequency, and use-purpose of digital communication devices to ensure effective learning and protect the young generation from technological addiction. The usage guidelines are meant to be distributed to Bangladesh Electrical Association (BEA) and Electronics Traders Association of Bangladesh (ETAB) to incorporate this guideline for all the digital communication device distributors, retailers, and dealers during their selling process to the final customers. Such guidelines can help to create awareness among the primary buyers who belong to millennials (Gen Alpha's parent generation) and also instigate the primary and secondary school level users to effectively use digital communication devices without affecting their learning process, quality time and productive use. The ultimate aim is to build a healthier and happier society from the societal well-being perspective.

The experiment will conclude by suggesting that research supports the contention that children's experience of growing up in a digital environment is qualitatively different from that of previous generations. Video games and digital communication play a major part in the lives of many children, although there is an economic divide between rich and poor in terms of access to digital technology in Bangladesh. What can be said is that moral panics and conventional wisdom that claim that digital technology is uniformly negative for children can be reduced and alternated by proper usage techniques for children's development. As digital communication technology is an unavoidable reality, hence the customer-segmented usage guidelines for digital communication technologies can help the association members, distributors and retailers to disseminate the parameters of appropriate type, frequency and purpose of the devices to the parents and adults to ensure their constructive use for children and teenagers.

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# **Reinventing Economic Institutions and Policies for a New Bangladesh**

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## **Abstract**

Pervasive institutional crises in Bangladesh led to the mass movement of July-August that toppled the authoritarian regime of the Awami League. Bangladesh is now in the process of overhauling its institutional landscape. The objective of this paper is two-fold. First, it discusses various conceptual issues concerning institutions and institutional reforms. Second, it concentrates on institutional reforms from a long-term perspective. Specifically, it calls for building an effective social state and developing community institutions and organizations. It also highlights the fact that successful institutional reforms require the participation of all stakeholders in Bangladesh including political parties, various levels of government, civil society organizations, the media, and activists.

## **Keywords**

Social capital, Social state, Community institutions

## **Introduction**

During the last 15 years of authoritarian rule of the Awami League, Bangladesh experienced institutional atrophy and regress. The White Paper on the State of Bangladesh Economy, released a few weeks ago, presents a realistic diagnosis of the health of the Bangladesh economy left behind by the Awami League regime led by Sheikh Hasina. The regime provides a classic example of an extractive state ( Acemoglu and Robinson, 2012). The White Paper covers five broad issues in its 23 chapters such as macroeconomic issues, structural challenges, social dimensions, institutional issues, and policy outlook. It exposes various institutional ailments of almost all sectors of Bangladesh.

Chapter I of the White Paper focuses on the state of the macroeconomy of Bangladesh. It exposes the hollowness of the so-called Bangladesh paradox or the fastest growth paradox. It argues that the Awami League regime peddled a false narrative of high growth in Bangladesh by hyping-up and cooking-up GDP data and by ignoring other relevant metrics of economic growth or development. Furthermore, according to the White Paper, economic growth began to slow down since the mid-2010s. The White paper, however, doesn't adequately encapsulate reforms that are needed for sustained and inclusive development. The current Interim government of Bangladesh has set up several commissions to undertake comprehensive reforms concerning economic and political institutions.

The main objectives of this paper are a) to discuss conceptual issues concerning institutional reforms and b) to highlight institutional reforms from a long run perspective.

## **Institutions and Institutional Reforms: Conceptual Issues**

There is now a large literature on institutions and their relevance to economic performance. Many scholars, for example, Ibne Khaldun (2020), Adam Smith (1759), Karl Marx (1859), and Karl Polanyi (2001), from different perspectives, emphasized that the economic sphere and other non-economic spheres are intertwined. Khaldun highlighted the role of *asabiyyah* which referred to social cohesion. With a nuanced view of the human nature that involves self-interest and empathy, Adam Smith called for designing social institutions to promote public welfare (Muller, 1993). With a materialist view of history, Marx considered the base comprising the mode of production and production relations as the determinant of the superstructure which includes political, cultural, and social institutions. Polanyi argued that markets were embedded in social and political relations.

North (1990) provides theories of institutions and institutional changes and their implications for economic performance. According to North, institutions provide the rules of the game while organizations are the players. Institutions can be formal such as the constitution and the legal system and informal such as social norms, culture, and ideologies. While formal institutions can be changed through reforms, changes in informal institutions are evolutionary in nature. According to North, changes in institutions are often “path dependent” implying that initial set of institutions has significant influences on current and future institutions. Furthermore, because of historical factors and transaction costs, inefficient institutions may continue to persist. North (2005) emphasizes transaction costs and relative price changes as drivers of institutional changes. However, North (2005) under-emphasizes the importance of the unequal power structure and ideology in institutional stasis and inefficiency.

Granovetter (2017) explores the interplay between institutions including trust, social capital, and power and human purposive actions. Finally, a recent book edited by Faghih and Samadi (2024) contains 14 chapters that discuss various types of institutional inertia in society.

## **Institutional Reforms for Building a Social State**

Neoclassical economics and neo-liberal philosophy call for a minimalist role of the state in a market economy ignoring pervasive market imperfections and market failures. However, for sustained and inclusive development the social role of the state is critical in the presence of social and economic externalities. The social role of the state is important in education, social housing, healthcare, welfare of the children, and social support for the extremely poor and people with disabilities. Institutional reforms are needed to build the social state for several reasons. Social problems such as crime, child marriage, lack of trust, drug addiction, lack of moral and ethical values, and family breakdowns have negative economic outcomes. Second, as mentioned by economist Emanuel Saez (2021), the social state has emerged in advanced countries to make the socio-economic system more inclusive and more equitable.

The myopic nature of the state in Bangladesh is most egregious in the lack of investment in our children. Millions of children still lack access to quality education, food, healthcare, and shelter. Many of these children in their adulthood remain trapped in poverty. Some of them join the groups of “Kishore gangs” or organized criminal gangs. As emphasized by the Nobel laureate James Heckman, social returns from investment in children are higher than realized by policy makers.

The Interim Government can be a catalyst in promoting in early childhood education and healthcare.

While mainstream economists are preoccupied with accumulation of physical capital for economic development, some social scientists such as Robert Putnam (1993, 2001, 2002), Pierre Bourdieu (2024), and Granovetter (2017) highlight the importance of social capital such as social networks, voluntary activities, trust, and ethical values for sustainable development. Social capital can mitigate the negative consequences of class divides in society and promote intergenerational mobility. Growing privatization of education in Bangladesh acts as a drag on social capital. Reforms are essential to provide quality education through public schools, colleges, and universities. High schools can make voluntary activities mandatory for students. Singapore provides a good example of how the state can promote social capital through public housing and excellent public education in an ethnically diverse society (Chua, et al., 2021).

### **Building Community Institutions and Organizations**

Throughout its history, especially during the last 15 years, Bangladesh remained a hyper-centralized state, which cannot ensure sustainable economic development. Community institutions and organizations are the weakest links in Bangladesh, especially in rural areas. While the discourse on development in Bangladesh highlight market failures and government failures, the stark reality of community failures remains in the blind spot. A real word example can illuminate the pervasiveness of community failures. More than six decades ago, when I was a student in the primary school in my village, our village had a library, and a big playground. We used to regularly play soccer in the playground. The playground witnessed lively inter-village competitions in soccer and athletics. The primary school used to organize vigorous competitions in sports and cultural activities. Over the years, the library disappeared as the rural elite migrated to urban areas. An emerging bazaar completely devoured the playground. Another three primary schools have been built, but out of four schools, only our school had a playground. At one time local *Mustans* tried to grab the school field. With strong protests from the local community, the field was restored to the school. Currently, none of the schools nor the village has any library. Furthermore, the village has no community hall where community events can be held. School committees are largely dysfunctional. A private elementary school has been established which attracts students from neighboring villages including our village. While visiting the school located in the poorest neighborhood, I learned that no local politicians, nor any official from the Upazilla office ever visited the school. None of the schools has any policy of conducting basic health checkups of students. Furthermore, rote learning from prescribed textbooks remained the dominant pedagogical tool. The quality of education deteriorates as the distance of a school increases from the Zilla, Upazilla, and Union headquarters.

Institutional reforms are essential to reinvent community values, institutions and organizations involving all stakeholders including all levels of government, non-governmental organizations, parents by building not only tangible infrastructure such as playgrounds and community halls but also social capital such as social networks, effective school committees, health, sports, literary and cultural clubs and voluntary associations (Islam, 2010). The current policy stance should be

reversed. Schools and health care facilities in disadvantaged areas should be allocated more resources compared to those in advantaged areas near Upazilla and Zilla centers.

In the long run, administrative powers and functions should be decentralized. Furthermore, local governments should have enough autonomy and independence rather than creatures of the central government or the parliament as laid out in articles 59 and 60 of the current constitution.

### **Institutional Reforms to Prevent Toxic Political Recidivism**

Over the last five decades, Bangladesh has had a checkered history with democratic, quasi-democratic, military, and fascist political regimes. Following the collapse of the authoritarian, Bakshal regime of Mujib, the authoritarian regime of Ershad, there was a temporary euphoria of pro-democratic institutional reforms. However, these reforms remained cosmetic, and several toxic traits of political recidivism continued to plague Bangladesh: pervasive corruption, hyper-centralization of administration, subjugation of the judiciary, the bureaucracy, and the police through patronage and political partisanship.

During the last 15 years, the gap between rhetoric and reality peaked generating a new form of cognitive dissonance in Bangladesh politics. As mentioned by social psychologist Festinger (1957), cognitive dissonance is the discomfort people feel when their behavior does not align with their values or beliefs. The klepto-fascist regime proclaimed a zero-tolerance policy concerning corruption while corruption metastasized throughout society. Driven by self-serving delusion, the regime felt no moral tensions to resolve the cognitive dissonance; sometimes it tried to resolve it by arguing that corruption was also high during the BNP regime or by misleadingly referring to the fact that corruption exists in all countries. Politics continued to remain a profitable business for thousands of political cadres. Ruling political parties, to use a sports metaphor, tried to be framers of rules, referees, and players concurrently.

What institutional reforms can be initiated to prevent toxic political recidivism? In this context it needs to emphasize that an interim government alone cannot guarantee that toxic political culture will not emerge again. Political parties must be “persuaded” to make commitments concerning prevention of corruption, partisanship involving the judiciary, the police, and the bureaucracy. The political parties also need to recruit members for the parliament based on integrity, education and knowledge in legislative matters. These members also should be transformational leaders in their own localities. The interim government can take initiatives to make the anticorruption commission more independent and make declaration of assets of political leaders, top bureaucrats, and judges mandatory. The media and civil society organizations should have greater freedom in performing their oversight functions while monitoring the activities of political parties and other organs of the state and in exposing the nexus involving politicians, bureaucrats, and business elites.

### **Concluding Remarks**

Formal institutions such as the constitution and laws can be reformed somewhat easily. However, implementation of formal institutions may remain incomplete and weak. More importantly, informal institutions such as social norms and values can't be reformed overnight. Institutional



reforms encompass economic, political, social, and legal realms. Success of reforms depends on how reforms are designed, framed, and implemented. In building inclusive development, reform processes must be consultative involving all stakeholders. Furthermore, from a long-term perspective, reforms should be viewed as a “ long-term therapy,” rather than a onetime “institutional inoculation.” Democracy must be a part of successful development. However, as recent developments in many countries demonstrate democracies may die in a variety of ways ( Levitsky and Ziblatt, 2018). Toxic political recidivism must be prevented through constant monitoring by civil society organizations and activists.

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## **Appendix 1: Transcript of Virtual Remarks by Deputy Assistant Secretary Nicole Chulick**

Good morning, everyone.

I'm Nicole Chulick, Deputy Assistant Secretary in the Bureau of South and Central Asian Affairs at the State Department.

Thank you to the Bangladesh Development Initiative for the kind invitation. I wish I could be with you in person in Berkeley, but connecting virtually is the next best thing.

This is obviously a time of great change and great hope for Bangladesh, and it has been led largely by the youth. I understand you'll hear from several youth activists later this morning.

While I think we can all agree there is huge potential at this moment for Bangladesh to make positive economic, social, and governance changes, this opportunity has come at a cost.

I want to acknowledge the hundreds of Bangladeshis who were injured or killed. We're also aware of deeply concerning reports of instances of violence against religious minorities and political groups.

It is vital to have full and transparent investigations to ensure accountability for recent acts of violence.

We welcome the Interim Government's decision to work with the United Nations Human Rights Office to investigate alleged human rights violations, and we encourage a fair and transparent legal process for all individuals.

### **So where are we now, and where do we go from here?**

The United States values our partnership with Bangladesh, which has endured for more than 50 years, since Bangladesh's independence.

Our cooperation on economic development, security partnership, and climate crisis response demonstrates the breadth of U.S.-Bangladeshi relations and the potential for broader engagement in the future.

During this time of transition and change for Bangladesh, the United States is actively engaging with the Interim Government, led by Chief Advisor Dr. Mohamed Yunus, as it charts an inclusive, equitable and democratic future for the people of Bangladesh.

### **So how are we engaging?**

We recognize that stabilizing the economy is an urgent priority.

In September, an interagency group led by the Treasury Department, including officials from the State Department, USAID and USTR, met with key advisors to the Bangladeshi Interim

Government to discuss how the United States can support Bangladesh's economic growth, financial stability, and development needs.

During the visit, USAID signed a development agreement worth over \$200 million with the Interim Government to support Bangladesh in advancing development, strengthening governance, expanding trade, and creating greater opportunities for the Bangladeshi people to build a brighter and more prosperous future.

We were also pleased to welcome Chief Advisor Dr. Yunus to the United Nations General Assembly in October, where Bangladesh and the United States held key discussions on partnerships, human rights, fair elections, climate change, and digital rights. President Biden, Secretary of State Blinken, U.S officials and congressional leaders also held numerous meetings with Chief Advisor Yunus to emphasize collaboration on democratic values and shared goals for a prosperous Bangladesh. These high-level meetings are important, and they will continue.

But it is also important for everyday Americans and Bangladeshis – whether they work in education, government, or the private sector – to meet, engage, and learn from one another through professional exchanges and people and people engagements. These are the building blocks of our bilateral relationship.

We've recently organized several events to engage members of the diaspora, including a virtual event with the Wilson Center at which our Assistant Secretary Don Lu, as well as Congressman Tom Suozzi, spoke to more than 180 participants about our work with the Interim Government and the future of Bangladesh.

I'm pleased that we've been able to welcome several International Visitor Leadership Program participants from Bangladesh this fall. They participated in substantive professional development programming across the United States and meetings at the State Department here in Washington. We've also welcomed students participating in the Kennedy-Lugar Youth Exchange and Study (YES) Program, the Global Undergraduate Exchange Program, and the Fulbright Program -- to name just a few.

It's also why we announced the launch of the Young South Asian Leaders Initiative on the sidelines of the UN General Assembly. This initiative will connect like-minded young leaders across the region to tackle shared challenges and advance the vision of a free and open, connected, prosperous, secure, and resilient region.

I will conclude by saying the U.S. Government is committed to partnering with and supporting Bangladesh. There is much work ahead to achieve a sustainable economic recovery, accountability for human rights violations, and political reforms that support the rule of law.

The Bangladeshi American community in the United States plays an important role in advancing each of these objectives. You bring your experience, your investment dollars, and your encouragement to the people of Bangladesh to pursue a more peaceful and stable future.

Thank you.

## Appendix 2: Detailed Conference Program

### Day 1: Friday, November 8, 2024

**1:00 pm–6:00 pm Registration**

**1:00 pm–2:00 pm Networking**

**2:00 pm–2:30 pm Welcome and Introductions**

- Dr. Munir Quddus (President, BDI; Professor and Dean, Prairie View A&M University)
- Dr. Elora Shehabuddin (Director, Chowdhury Center for Bangladesh Studies; Professor of Gender & Women's Studies, University of California, Berkeley)
- Dr. Rahim Quazi (Vice President, BDI; Professor and Assistant Vice Provost, Prairie View A&M University)

**2:35 pm–3:30 pm Keynote #1: The Liberation and Development of Bangladesh: The Giants We Have Lost (Moderator: Dr. Munir Quddus, Prairie View A&M University)**

- *The Life and Work of Prof. Nurul Islam*
  - Dr. Nazrul Islam (Professor, Asian Growth Research Institute (AGI) and former Chief of Development Research, United Nations) [20 minutes]
- *The Life and Work of Sir Fazle Abed*
  - Dr. Ahmed Mushtaque Raza Chowdhury (Trustee, BRAC University; Professor, Columbia University Mailman School of Public Health; formerly Vice Chair, BRAC) [20 minutes]
- Session Q&A [15 minutes]

**3:35 pm–4:35 pm Keynote #2: Ten Tasks for Future Bangladesh (Moderator: Dr. Farida Khan, University of Colorado at Colorado Springs)**

- *Ten Tasks for Future Bangladesh*
  - Dr. Nazrul Islam (Professor, Asian Growth Research Institute (AGI) and former Chief of Development Research, United Nations) [45 minutes]
- Session Q&A [15 minutes]

**4:40 pm–6:00 pm Keynote #3: Rebuilding Bangladesh: Economy, Governance and Politics (Moderator: Dr. Bernhard Gunter, American University)**

- *The Economy of Bangladesh: Crisis and Urgent Reforms*
  - Dr. Fahmida Khatun (Executive Director, CPD) [20 minutes]
- *The Crisis in the Banking Sector: An Agenda for Urgent Reforms*
  - Dr. Birupaksha Paul (Professor of Economics, SUNY at Cortland; former Chief Economist, Bangladesh Bank) [20 minutes]
- *Is the Bangladesh Paradox Sustainable?*
  - Dr. Selim Raihan (Professor of Economics, Dhaka University; Executive Director, SANEM)
- Session Q&A [20 minutes]

## Day 2: Saturday, November 9, 2024

**8:00 am–12:00 pm Registration**

**8:00 am–8:30 am Breakfast and Networking**

**8:30 am–9:00 am Conference Opening Session**

- Dr. Munir Quddus (BDI President; Professor and Dean, Prairie View A&M University)
- Dr. Elora Shehabuddin (Director, Chowdhury Center for Bangladesh Studies; Professor of Gender & Women's Studies, University of California, Berkeley)
- Dr. Raka Ray (Dean, Division of Social Sciences, University of California, Berkeley)
- Nicole Chulick (Deputy Assistant Secretary, U.S. State Department) [recording]

**9:00 am–9:50 am Plenary: *The July–August Pro-Democracy Movement in Bangladesh – Success, Challenges and Opportunities* (Virtual student panel moderated by Dr. Farhana Sultana, Syracuse University)**

- Sayeeda Meher Afrog
- Auroi Semonti Khan
- Taposhi Dey Prapti
- Meghmallar Bosu

**10:00 am–11:25 am Concurrent Sessions #1**

**Session 1.1: Film and Dance in Bangladesh**

**(Chair: Dr. Elora Shehabuddin, University of California, Berkeley)**

- *“Shompriti” and “Oshommoti” in Bangladeshi Dance*
  - Dr. Munjulika R. Tarah (Williams College)
- *Cinemas of Bangladesh: Challenges and Prospects in a Transnational Landscape*
  - Md. Hasan Ashik Rahman (State University of New York at Binghamton)
- *Racial or Post-racial Imagination? The Limit of Transcultural Adaptation in Bangladeshi Martial Arts Film Bojromusthi (1989)*
  - Mohammad Zaki Rezwani (BRAC University)

**Session 1.2: Politics and Legislation**

**(Chair: Dr. Mahmood Hussain, San Francisco State University)**

- *Institutional Variation, Legislative Questions and Representation: Evidence from Bangladesh*
  - Dipak Kumar Biswas (West Virginia University)
- *Access to Justice through Village Courts in Rural Bangladesh: A Study on its Problems and Prospects*
  - Dr. Amir Mohammad Nasrullah (University of Chittagong)
- *The rationality of walkouts and boycotts of opposition parties in Bangladesh: Exploring the governance of Parliament*
  - Dr. Md. Sultan Mahmud (University of Rajshahi)

**Session 1.3: Reimagining the Role of Private Universities in Bangladesh over the Next Few Decades: Panel of University Vice Chancellors  
(Chair: Dr. Munir Quddus, Prairie View A&M University)**

- Professor Imran Rahman, Vice Chancellor, University of Liberal Arts Bangladesh
- Professor Yousuf M. Islam, Vice Chancellor, Southeast University
- Professor Shams Rahman, Vice Chancellor, East West University

**Session 1.4: Bangladesh Environment Network (BEN) Roundtable with Invited Guests  
(Moderator: Dr. Ahmed Badruzzaman, UC Berkeley)**

**11:35 am–1:00 pm Concurrent Sessions #2**

**Session 2.1: Demographics and Migration  
(Chair: Dr. Fahmida Khatun, Centre for Policy Dialogue)**

- *Migration Dynamics: Exploring the Dual Impact of Remittances and Socio–Cultural Changes Among Bangladeshi Migrants in Malaysia*
  - Dr. A. S. A. Ferdous Alam (Universiti Utara Malaysia) and Halima Begum
- *53 Years of Bangladesh and 30 Years of ICPD: A Journey towards Population and Development*
  - Dr. Mohammad Mainul Islam (University of Dhaka)
- *Prevalence and determinants associated with unmet need for family planning in Bangladesh: An analysis of Bangladesh Demographic Health Survey*
  - Dr. Mohammad Mainul Islam (University of Dhaka), Md. Shahadat and Amimul Ehsan

**Session 2.2: Environment and Climate Change I  
(Chair: Dr. Farida Khan, University of Colorado at Colorado Springs)**

- *Bengal Delta Formation and Riparian Hazards: Why an Interdisciplinary Planning Approach is Needed for Bangladesh's Future Planning?*
  - Dr. C. Emdad Haque (University of Manitoba, Winnipeg, Canada)
- *Landscape Analysis of Community Resilience to Disasters by Addressing Sexual and Reproductive Health and Rights in Gaibandha and Satkhira Districts*
  - Dr. Md. Aminul Haque (University of Dhaka), Md. Rabiul Haque and Mohammad Mainul Islam
- *Prospects and Challenges of Adopting Zero Liquid Discharge (ZLD) Technology for Textile Dyeing Process Industry in Bangladesh and Policymaking Based on Financial Analysis*
  - Dr. Sukomal Modak (Computers and Structures, Inc., USA) and Partha Modak (Computer Aided Engineering Pvt. Ltd., Dhaka)

**Session 2.3: Panel on Rebuilding Bangladesh: Governance, Development, Migration  
(Chair: Dr. Ahmed Shafiqul Huque, McMaster University)**

- *Reinventing Economic Institutions and Policies for a New Bangladesh*
  - Dr. Sadequl Islam (Laurentian University, Canada)
- *The Interplay of shrinking democratic space and migration dynamics: A Bangladesh perspective*
  - Dr. Ahsan Ullah (Universiti Brunei Darussalam)
- *The Canadian Bangladeshi Diaspora: Acculturation Strategies in Toronto and Hamilton*
  - Dr. Mehnaaz Momen (Texas A&M International University)
- *Electoral irregularities, democratic decline and regime change in Bangladesh*
  - Dr. Ahmed Shafiqul Huque (McMaster University, Canada)

**12:30 pm–2:00 pm Vice Chancellors’ Corner and Authors’ Corner**

Vice Chancellors’ Corner

If you are interested in meeting one or more of the visiting Vice-Chancellors from private universities in Bangladesh, please take advantage of this opportunity. Prof. Imran Rahman (ULAB), Dr. Shams Rahman (East West University) and Prof. Yusuf Islam (Southeast University) plan to be available. They look forward to meeting you to discuss opportunities for visiting faculty positions (or permanent appointments) in their universities.

Book Authors’ Corner

If you have recently (co)authored or (co)edited a book related to Bangladesh, please feel free to bring a few copies of your book (or flyers about your books) and be present at the authors' corner during this time slot so that conference participants can stop by to chat and/or purchase an “autographed” copy of the book directly from you.

**1:05 pm–1:55 pm Lunch**

**2:00 pm–2:55 pm Keynote #4: The Seashore of Endless Worlds**

**Tarfia Faizullah (MFA; poet; University of North Texas)**

This hybrid talk/poetry recitation considers Bangladesh’s recent past, its tumultuous beginnings in 1971, the Bangladeshi presence in the broader global diaspora, as well as its potential future.

**Moderator: Dr. Nadine Shaanta Murshid (University at Buffalo)**

**3:00 pm–4:25 pm Concurrent Sessions #3**

**Session 3.1: Business and Economy**

**(Chair: Dr. Mustafizur Rahman, Centre for Policy Dialogue, Dhaka)**

- *Towards a High-income Country Status: Venture Capital as a Catalyst for Fueling Innovation for Bangladesh’s Economic Growth*
  - Dr. Maria Hossain Sochi (University of Alabama) and Md. Saimum Hossain
- *Bangladesh at a Critical Juncture: Alternative Pathways to Address the Triple Challenges*
  - Dr. Mohammad Irfan (University of Denver)
- *Harnessing the Potentials of Big Data to Assess Poverty Transformation in Bangladesh*
  - Dr. Rezaul Roni (Jahangirnagar University), Mohammad Nayeem Aziz Ansari and Md. Shahedur Rashid



### **Session 3.2: Health Concerns and Policy**

**(Chair: Dr. Akhlaque Haque, University of Alabama at Birmingham)**

- *Socio-demographic factors and reproductive health outcomes of child marriage in Bangladesh: a cross-sectional analysis*
  - Dr. Mohammad Mainul Islam (University of Dhaka), Md. Shahadat and Mst. Jannatun Nur Toli
- *Salinity Intrusion and Menstrual Hygiene: The Unseen Struggles of Coastal Women in Bangladesh*
  - Dr. Md. Mizanur Rahman (Jahangirnagar University) and Sumaiya Rokoni
- *Increasing Challenges of Aging in Bangladesh: Challenges for measurement and management*
  - Dr. Md. Aminul Haque (University of Dhaka) and Sadiya Afrin

### **Session 3.3: Communities in the Reimagined Bangladesh**

**(Chair: Dr. Farida Khan, University of Colorado at Colorado Springs)**

- *Retrotopian imaginaries and future-oriented practices of indigenous people in the Chittagong Hill Tracts, Bangladesh*
  - Dr. Eva Gerharz (Fulda University of Applied Sciences) and Dr. Bablu Chakma (Fulda University of Applied Sciences) [co-presenting]
- *Who is Left Behind in Bangladesh? Gender, Caste, and Class in the Dalit Community*
  - Dr. Fauzia Ahmed (Miami University)
- *Cartographies of Destruction: Demolition of Religioscape in Bangladesh*
  - Dr. Aanmona Priyadarshini (Southern Methodist University)
- *A microhistory of the anti-shrimp movement of Polder 22, Khulna: Karunamoyee Sarder, peasant politics and future imaginaries*
  - Moyukh Mahtab (University of Texas at Austin)

### **Session 3.4: Politics and Representation**

**(Chair: Dr. Mahbubur Rahman, North South University)**

- *Maulana Akram Khan and the Idea of a Political Community*
  - Dr. Md. Mizanur Rahman (University of California, Santa Cruz)
- *Bangladesh as a Prison State: A Chronopolitics of Fascist Desire for Time*
  - Maidul Islam (University of Pittsburgh)
- *An Exploratory Investigation of Mediatization through Globalization of Political Discourse in Bangladesh*
  - Dr. Afsan Chowdhury (San Francisco State University)
- *Ethical Practices in Bangladesh Journalism: Traditions and Transitions*
  - Dr. Md. Abu Naser (California State University, Bakersfield)

## 4:30 pm – 5:55 pm Concurrent Sessions #4

### Session 4.1: Technology, Media, and Communication

(Chair: Dr. Akhlaque Haque, University of Alabama at Birmingham)

- *Digital Transformation of Bangladesh through Digital Empowerment – Challenges to Overcome in the Next Half-Century*
  - Dr. Abureza M. Muzareba (University of Dhaka)
- *Building a Bangla Internet: A Technological History told through a Single Letter*
  - Dr. Anushah Hossain (University of California, Berkeley)
- *Digital platform usage intention of the young female urban netizens in Bangladesh for sustainable management of surplus household food*
  - Shamima Raihan Manzoor (York University, Canada)
- *Digital Usage Guidelines for Children from the Societal Well-being Perspectives for a Digital Bangladesh: Testing a User-Segmentation Model*
  - Shahida Raihan Manzoor (Multimedia University Malaysia) and Shamima Manzoor

### Session 4.2: Rohingyas in Bangladesh

(Chair: Dr. Amm Quamruzzaman, University of California, Berkeley)

- *Preventing radicalization in the Rohingya refugee camps of Cox's Bazar, Bangladesh: An investigation into the current situation and policy prescriptions for the future*
  - Dr. Mahbubur Rahman (North South University, Bangladesh)
- *Depictions of the Rohingya crisis in Bangladeshi print and social media since 2012*
  - Md. Firoz Hasnat (Northern Illinois University)
- *Gender and Crypto Surveillance Capitalism: Disrupting the Blockchained Humanitarian Aid Governance in Refugee Camps*
  - Rawshan E. Fatima (Rutgers University)

### Session 4.3: Gender and Rurality in Bangladesh

(Chair: Dr. Fauzia Ahmed, Miami University)

- *Contesting Rurality? Geographies of Transforming Rural Bangladesh*
  - Dr. Mohammad Nayeem Aziz Ansari (Jahangirnagar University) and Md. Mizanur Rahman
- *Changing Lives of Women in Rural Bangladesh: A Feminist Perspective*
  - Dr. Fouzia Mannan (East West University, Bangladesh)
- *The Dowry Dilemma in Bangladesh: Legal Inefficacy and Socio-cultural Impediments*
  - Sharif Abdul Based (Marmara University, Turkey)

### Session 4.4: Panel of Think Tanks from Bangladesh

(Chair: Dr. Fahmida Khatun, Centre for Policy Dialogue, Dhaka)

- Dr. Mustafizur Rahman (Centre for Policy Dialogue, Dhaka)
- Dr. Ahmad Ahsan (Policy Research Institute, Dhaka)
- Dr. Selim Raihan (Dhaka University and SANEM)

- 6:00 pm–6:15 pm Recognition & Award Ceremony**
- 6:15 pm–6:40 pm A Capella Group Dil Se**
- 6:40 pm–7:40 pm Dinner**
- 7:30 pm–8:30 pm Keynote #5: Dr. Farhana Sultana (Syracuse University):  
Confronting Climate Coloniality: Decolonizing Pathways for  
Climate Justice (Moderator: Dr. Farida Khan, University of  
Colorado at Colorado Springs)**
- 8:30 pm–9:30 pm Film: “No Ark” (A Documentary from Bangladesh on Faith and  
Environment and Discussion with Q&A led by Dr. Sudipta Roy  
(Georgetown University) (Moderator: Dr. Farida Khan, University  
of Colorado at Colorado Springs)**

### **Day 3: Sunday, November 10, 2024**

- 8:00 am–8:25 am Breakfast and Networking**
- 8:30 am–9:50 am Plenary: Environment in New Bangladesh?  
[organized by Bangladesh Environment Network (BEN)]  
(Moderator: Dr. Ahmed Badruzzaman, UC Berkeley)**
- *History of BD Environment Movement, Challenges and Opportunities - A Brief Recap*
    - Dr. Nazrul Islam (Asian Growth Research Institute (AGI))
  - *Air Pollution in Bangladesh-Its Unique Challenges and Likely Solutions*
    - Mahbubul Islam (U.S. Environmental Protection Agency)
  - *Industrial Pollution and Potential Homegrown Solutions?*
    - Dr. Sukomal Modak (Computers and Structures, Inc., USA)
  - *Energy-Climate Conundrum: World vs. Bangladesh*
    - Dr. Ahmed Badruzzaman (University of California, Berkeley)

### **10:00 am–11:20 am Concurrent Sessions #5**

#### **Session 5.1: Economic Development in Bangladesh: Prospects and Challenges (Chair: Dr. Shams Rahman, East West University)**

- *Bangladesh’s Emergent External Borrowing Scenario Reasons for Concern and Mitigating Actions*
  - Dr. Mustafizur Rahman (Centre for Policy Dialogue, Dhaka)
- *Is development performance a democracy premium or a miracle?*
  - Dr. A. B. M. Nasir (North Carolina Central University)
- *Urbanization Patterns and Economic Development - An Overview*
  - Dr. Ahmad Ahsan (Policy Research Institute, Bangladesh)
- *A Micro Look at the Next 50 Years in Bangladesh*
  - Dr. Michael Bowler (Winona State University)

**Session 5.2: Environment and Climate Change II**  
**(Chair: Dr. Rahim Quazi, Prairie View A&M University)**

- *Merging political ecology into a socio–ecological systems approach: What this reveals about water governance in Bangladesh’s coastal regions*
  - Dr. Deepa Joshi (International Water Management Institute), James Garrett, Bryce Gallant, Md. Nurul Amin, Mohamed Aheeyar, Mokhlesur Rahman and Mou Rani Sarker
- *Linkage of Urban Area Climate Fund Projects with National Plans and Policies of Bangladesh*
  - Dr. Nawshin Tabassum (Bangladesh University of Engineering and Technology) and Ishrat Islam

**Session 5.3: Bangladeshis in the City and Abroad**  
**(Chair: Dr. Nadine Shaanta Murshid, University at Buffalo)**

- *Bangladeshis as Sporting Diaspora in Canada: Playing Cricket for Identity Construction through Acceptance, Negotiation and Resistance*
  - Saidur Rahman (University of Toronto, Canada)
- *Folk with Coke: Serving a Neoliberal Agenda with a Decolonial Flavor in Bangladesh*
  - Dr. Nafisa Nipun Tanjeem (Worcester State University)
- *Spaces, Identities, and Activities: World–making of Aging Bangladeshi Immigrant Women in New York*
  - Mania Taher (University of Illinois at Urbana-Champaign)
- *In-Vitro Fertilization (IVF) Tourism from Bangladesh’s Perspective*
  - Tanjeem Afreen (University of Chittagong)

**Session 5.4: Panel of Silicon Valley Entrepreneurs (with on the ground experience and/or entities in Bangladesh)**  
**(Moderator: Dr. Ahmed Badruzzaman, UC Berkeley)**

- Luna Afroz (Founder of Luna Bags)
- Dr. S. Khalid Azim (Co-Founder and Executive Vice President of Engineering, echosonic)
- Dr. Yusuf Haque (Co-Founder of Exo, Chief Technology Officer and Executive Vice President of Engineering at Exo)
- Dr. Syed Faiyaz Hossiany (Senior Volwiler Research Fellow; Abbott Vascular; and Adjunct Professor, Bioengineering, University of California, Berkeley)
- Dr. Saif Islam (Director, Center for Information Technology Research in the Interest of Society (CITRIS) and the Banatao Institute; Professor, Department of Electrical and Computer Engineering, University of California, Davis)
- Mohammed Enayetur Rahman (Founder, CEO & President of ULKASEMI)
- Dr. Fuad Rahman (CEO of Apurba Technologies Inc.)

**11:30 am–12:30 pm BDI Panel: The *Biplob* of Summer 2024: Hopes, Expectations, Challenges (Moderator: Dr. Elora Shehabuddin, University of California, Berkeley)**

- Dr. Munir Quddus (Prairie View A&M University): corruption
- Dr. Nadine Shaanta Murshid (University at Buffalo): violence
- Dr. Nafisa Nipun Tanjeem (Worcester State University): gender
- Dr. Akhlaque Haque (University of Alabama at Birmingham): administrative reform
- Dr. Farida Khan (University of Colorado at Colorado Springs): economy

**12:30 pm–1:00 pm Conclusion**

**1:00 pm Lunch**

**Note:**

We apologize that we have not included the title and affiliation of co-authors of the paper presenters. This information was unavailable to us.

### **Appendix 3: List of Conference Participants**

#### **Last Name, First Name; Email; Professional Affiliation; Role in BDI Conference; Country of Residence**

Afreen, Tanjeem; tanjeem.afreen@cu.ac.bd; Associate Professor, Anthropology Department, University of Chittagong; Paper Presenter; Bangladesh

Afrog, Sayeeda Meher; sayeedameherafrog@gmail.com; Student leader during the Summer Biplob; Student Panel on Pro-Democracy Movement; Bangladesh

Ahmed, Fauzia; ahmedfe@MiamiOH.edu; Associate Professor, Sociology and Gerontology Department, Miami University; Paper Presenter and Chair of Paper Session; United States

Ahmed, Sharif, ahmedsha2004@yahoo.com; Associate Director, Bayer Pharmaceuticals LLC, Participant; United States

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Bowler, Michael; mbowler@winona.edu; Associate Professor, Global Studies and World Languages, Winona State University; Paper Presenter; United States

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Chowdhury, A. Mushtaque Raza; mushtaque.chowdhury@brac.net; Trustee, BRAC University; Professor, Columbia University Mailman School of Public Health; formerly Vice Chair, BRAC; Keynote Speaker; Bangladesh

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Chulick, Nicole; Inquiries to be addressed to: ChristensenED@state.gov; Deputy Assistant Secretary, U.S. Department of State; Welcome Speaker; United States

Eusufzai, Zaki; zeusufza@lmu.edu; Associate Professor of Economics, Loyola Marymount University; Participant; United States

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Islam, Sadequl; sislam@laurentian.ca; Professor, Economics Department, Laurentian University, Canada; Panelist; Canada

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