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- 2. The journal is dedicated to promoting the study, research and analysis of the issues related to society including social change and development from the perspective of different disciplines.
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Green Building Rating of High-rise Buildings in Sri Lanka

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Abstract

In an urban-setup, constructions of high-rise buildings are a great concern as it directly contributes to socio-economic and environmental purview of the country. Meantime, a wide range of sustainable practices can be applied indifferent stages of construction including planning, procurement and implementation. In order to pave the way to implement Sustainable Development Goals (SDGs), green building rating system was introduced by National Green Building Council of Sri Lanka in 2002. The rating system consist of total points of 100 and required minimum points for green building certification is 40%. Sustainable sites category includes 25% of total 100 points in green building rating system. The current practices related to sustainable site selection was investigated in five major high-rise buildings construction sites in Colombo. Two construction sites could not earn single point as it did not fulfill the prerequisites of the site section of the other three sites earned points 20, 19, 18 respectively out of 25 points. It was noted, that due to the negligence for the sustainable site selection, eligibility for obtaining the green building certification has been lowered. The minimum number of points required to obtain the green building certification is 40 points. Therefore, selected buildings which are on construction stage have higher chances of achieving the green certification by collecting points from the other criteria as well. Sustainable sites category of green building rating system supports to achieve silver, gold and platinum awards with a significant contribution. The contribution of sustainable construction and green building concept to sustainable development is identified throughout this research.

Keywords: Construction, High-Rise Buildings, Green Building, Sustainability, Sustainable Development, Sustainable Sites

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Introduction

Construction Industry in Sri Lanka

Construction is a major industry in Sri Lanka, expanding from small residential projects to high-rise buildings such as office buildings, shopping malls and apartments (Nandasena, Hanifaand, Zavahir & De Saram, 2021). In Sri Lanka, construction is regulated by government agencies such as SL Engineering Corporation and Mahaweli Authority and the private sector. Construction generally includes the stages of planning, design, procurement, implementation and completion. At the procurement stage, public sector procurement arrangements must comply with the Sri Lanka Procurement Guidelines for Goods and Works (UDA, 2006). It provides guidelines on permitting activities such as construction, repair, decoration, refurbishment, restoration and maintenance of buildings and other infrastructure. Private sector construction projects must comply with the procurement guidelines established in 1998 for private sector infrastructure projects. The main contractual document is the concession agreement (Nandasena et al., 2021). Construction activities are funded by both state-owned and private banks. Construction projects must comply with a variety of laws and regulations from the planning stage to completion.

The high-rise building concept began in the late 1960s as a significant turning point in the construction industry and urban development. Sri Lanka's first skyscraper was Ceylinco Tower Colombo built in 1960. Sri Lanka now has over 200 skyscrapers (Emporis, 2000). Buildings over 15 meters in height or over 5 stories are considered high-rise buildings under UDA regulations (Urban Development Authority, Sri Lanka, 2018).

Green Building Concept/GBCSL

The National Green Building Council of Sri Lanka (GBCSL) is a non-profit organization established in 2011. Sri Lanka's Ministry of Environment and Natural Resources (2007) has introduced a National Sustainable Development Strategy. Then, in 2010, the Green Building Council was established with Tsunami Guidelines for Sustainable Buildings in Southeast Asia to achieve significant environmental, safety and financial benefits (Karunasena & Thalpage, 2016). The Green Building Council ensures sustainability in construction. They conduct research to introduce new green concepts for construction and to verify green buildings (GBCSL, 2011). Furthermore, the construction sector consumes more than one-third of the world's energy consumption, so the Green Building Council was established with the aim of achieving zero emissions in the built environment (UNEP, 2007).

Role of the National Green Building Council

Green Building Certification or Green Building Assessment is conducted by the Green Building Council of Sri Lanka. There are two main services provided by GBCSL for green building verification. They are the Green Building Rating System and the Green Labeling System. Green Building Assessments are conducted by GBCSL when building manufacturers are interested in achieving green status for their buildings. The Green SL rating system has a points scale. Buildings that score 40 to 49 points out of 100 are certified as green buildings. Criteria of 50-59 points, 60-69 points, and 70+points are recognized as Silver, Gold, and Platinum categories respectively in the Green Building Rating System. GBCSL issues a valid certificate when evaluating a building.

The Green Labeling Scheme is also run by GBCSL. It is a multi-step process whereby products used in construction from start to completion are certified as environmentally friendly materials and processes. These steps include verifying constructed buildings as green buildings, registering the building and products used, submitting documentation to the GBCSL, evaluating the documentation, site visits and inspections, sample testing from laboratories, final assessment and awarding green building certification (GBCSL, 2011). GBCSL considers components such as Building and Site Management (MN), Sustainable Sites, Energy and Atmosphere, Materials and Resources, Indoor Quality, Innovation and Design Processes, Social and Cultural Awareness in the national green building rating system (GBCSL, 2011).

Study justification

Implementing green building concept has economic, social and environmental benefits. It ensures sustainability in construction. The economic benefits are the reduction in energy, fuel and electricity costs. Green building concept significantly reduce adverse environmental impacts (Zulu, Zulu, Chabala, & Chunda, 2022). Also, it increases resource efficiency; minimize natural resource wastage& pollution by downsizing supply chains. Moreover, it reduces wastewater treatment costs and water usage costs(Waidyasekara & Fernando, 2012).

The social benefits are reducing adverse health impacts, conservation of water, expanding green markets, ensuring occupational health and safety, increasing alternative transportation and increasing comfort of employees. As people spend more time indoors, their health depends on indoor environmental quality. Therefore, the green building concept is important for human existence too (Allen et al., 2015).

Despite the fact that the long-term benefits of adapting green building concept is higher than conventional construction methods (Pandithawatta, Zainudeen, and Perera, 2019). Green building concept is not popular among Sri Lankan investors due to high capital investment, high implementation cost and high material cost, lack of advanced technology, lengthy approval process in planning and implementation, lack of experience in using green technologies, higher time wastage and extreme communication among

construction stakeholders. Therefore, this study is aimed on analyzing the rating system of green buildings and the following study approach was proposed for the purpose of evaluating the applicability of the rating system to the selected construction industry.

Study Approach and Objectives

Sri Lanka's Green Building Rating System evaluates and certifies buildings according to points awarded in the Green Building Rating System. The maximum score is 100 points. These points can be grouped into seven categories. They are; building and site management [4 points], sustainable sites [site selection criteria – 25 points], water efficiency [14 points], energy and atmosphere [22 points], innovation and design processes [4 points], resources, materials, Waste management [14 points], indoor environmental quality [13 points] and social and cultural awareness [4 points]. Of these categories, the Sustainable sites category contains 25 points and accounts for 25% of the total score. This category has 12 criteria, including one prerequisite (GBCSL, 2011).

It was also pointed out that the sustainable site category of the green building rating system includes the most important aspects related to the environment such as reduction of environmental degradation, protection & restoration of environment, encourage environmentally friendly processes and controlling the damage on surrounding ecosystems. Construction activities alter existing natural environments. Components in sustainable sites category minimize this environmental alteration. Therefore, this study examines the current status of implementing these criteria and improvements which are possible. The improvements will ensure sustainability, protect the environment and achieve the global Sustainable Development Goals.

Specific Objectives of the Research

- Investigate the compatibility of site selection for high-rise building sunder green building rating criteria.
- Evaluate existing practices for the site selection of high-rise buildings under green building rating criteria
- Assessing the status of green building rating of selected high-rise buildings

Literature Review

Present Status of Green Buildings in SL

There are over hundred government and private green construction projects. Some of them have achieved very high green building ratings because their compliance with green standards. Due to variations of experience levels in the construction sector personnel, the green status of building changes. The

buildings mentioned below are best examples for adapting the green buildings in Sri Lanka.

- Logistics Park, Colombo awarded 73 points of 110 in LEED Rating system.
- Clear point Residencies, Rajagiriya has world's tallest residential vertical garden. It reduces energy consumption for cooling and mitigate heat island effect. The building is nominated for LEED certification. The entire building uses solar energy. Also, it has a drip irrigation system and a rain water harvesting system (Jayasinha, 2018).
- Cinnamon Bey, Beruwala the first hotel in Sri Lanka won a LEED Gold award. It has 100% energy-efficient lighting, recycled water mechanism, rainwater harvesting, and solar hot water and heat pump usage.
- MAS Intimates Thurulie, Thulhiriya won the LEED Platinum award.
- Brandix Eco Centre, Seeduwa transformed in 2008 to standards of green building. It was awarded Platinum status by LEED. Carbon footprint is reduced by 77%. (Jayasinha, 2018).

Policies and Laws Concerning Construction (UDA Law, Landfill Law)

Sri Lanka has two types of legislations related to the construction industry. They are planning laws and environmental laws. Planning laws include Design and Measurement, Built Environment, City and State Planning laws, and UDA and Government Codes. Environmental law relates to nuisance, environmental protection, EIA, IEEE, EPL, biodiversity conservation and forest management, coastal and marine environment.

Environmental Act No. 47 of 1980, Fauna & Flora protection Ordinance, Forest Ordinance No. 16 of 1901, the Coast Conservation Act are part of the Environmental laws (Abeynayake, 2012). Environmental act covers environmental modifications permitted during construction. However, there are certain prescribed projects that require an EIA or IEE to be performed, or an EPL to be obtained to perform construction work. Some high-rise buildings can be prescribed projects. In this case, an Initial Environmental Assessment or an Environmental Impact Assessment need to be carried out by the Central Environment Authority. Moreover, this process supports the green building concept. Construction of high-rise buildings as integrated multi-development activities covering a land area of more than 10 hectares or high-rise buildings within 100m of protected areas or ecologically sensitive areas are prescribed projects (CEA).

The Coast Conservation Act and the Marine pollution Act regulate construction work in coastal areas. These acts do not allow construction

activities that adversely affect the environment or biodiversity. Therefore, environmental sustainability in the construction sector is ensured by these laws.

Physical planning of construction projects must also be carried out within the framework of planning law. If the project meets the planning laws, it is approved for construction. There are various acts and policies, including planning laws. They are:

- Town and Country Planning Ordinance No. 13 of 1946
- Housing and town Improvement Ordinance No. 19 of 1915
- Urban Development Authority Act No. 41 of 1978
- Coastal Conservation Act No. 57 of 1981
- Urban Council Ordinance No. 61 of 1939
- Municipal Council Ordinance No. 29 of 1947
- Pradeshiya Sabha's Act No. 15 of 1987 does not have significant effect on green building concept. But house plan approval is done according to act.
- Nuisance Ordinance No. 15 of 1862 includes social problems with construction. (Abeynayake, 2012)

All these acts enable lesser negative impacts and more positive impacts in construction.

Sustainability of Construction Sector and Related SDGs

As the industry develops, the construction became an important global activity. As construction evolves from small and medium-sized buildings to large-scale buildings, the environmental, social and economic impacts became immense. The search for sustainable construction methods began to minimize negative environmental impacts and increase positive economic and social impacts. The concept of green building is based on sustainable construction. Sustainable construction consists of four pillars; Planet, People, Purpose, Benefits (Namian, Al-Bayati, Karji & Tafazzoli, 2021). Major purposes of sustainable construction are GHG emission reduction, climate change reduction, biodiversity conservation, economic development, improve life quality.

Sustainable development goals relate with many aspects of construction. The SDGs related to constructions are clean water & sanitization (SDG 06), affordable & clean energy (SDG 07), industry innovation & infrastructure (SDG 09), sustainable cities & communities (SDG 11), Responsible consumption & production (SDG 12), climate action (SDG 13), Life below water (SDG 14), life on land (SDG 15). A large amount of water is needed in the construction activities. and water pollution occurs in construction.

Therefore, techniques should be carried out to improve water quality & purification. Therefore, it is related to SDG 06. Usage of low emission energy clean energy to construction activities refers to SDG 07. Sustainable construction introduces cost-effective, low-emission and environmentally friendly green infrastructure. Also, new innovations are being developed in construction, such as efficient machines and material extractors. This refers to SDG 09. A sustainably developed city will improve quality of life. This meets SDG 11. In sustainable construction, environmental impacts are assessed and minimized. Therefore, it achieves SDG 14 & 15. With sustainable construction, emissions are reduced as much as possible. This refers to SDG 13 (Editor, 2020).

Verification of Green Buildings: Aspects Related to Site Selection

Green building validation has many aspects. Sustainable sites have been identified as a key component of green buildings (GBCSL, 2011). There are two main components in this category. These are "location and transportation" and "sustainable sites". The subcomponents under them are included in the International Building Rating System - "Leadership in Energy and Environmental Design" (LEED) (Ismaeel, 2019).

SL green building concept has few criteria used to assess sustainable sites. Mitigation of soil erosion and sedimentation within the site is a prerequisite to be checked and addressed before the project begins. Further points in the sector are achieved if the prerequisite is met (GBCSL, 2011).

Components relevant to sustainable site selection are Effect of Development Density and Community Connectivity on nature, Rehabilitation and restoration of green lands, green transportation towards a green construction, Rain water and storm water collection, Effective management of rain water, Heat Island mitigation, Reduction of light pollution and Effective use of light (GBCSL, 2011)

Controlling of Erosion and Sedimentation in Construction Sites

Soil erosion and sedimentation control are major aspects of the Green Building Validation Rating System. Soil erosion is the removal of the earth's surface due to various natural or anthropogenic causes. Construction activities alter the soil structure. It causes erosion. Sedimentation can also be generated by surface water runoff. The surface runoff is very high during rainy season.

Erosion damages housing. Sedimentation causes loss of aquatic fauna, eutrophication, flooding, water pollution, water supply disruptions& increasing treatment costs. Soil erosion and sedimentation affect ecosystems in site and surrounding areas (Sun, Cornish, Daniell, 2002).

Soil erosion mitigation structures are erected for erosion mitigation/ several factors should be considered in developing a soil erosion and sedimentation control plan. These are the site topography, soil type, best management

practices to be used, erosion management system, and status of site disturbance (GBCSL, 2011).

Site selection for construction purposes

Site selection and assessing sustainability practices must be conducted according to Green Building Council (GBCSL, 2011) verification criteria to achieve green building certification.

Site selection is an important task done in design stage. Some lands are not suitable for constructing buildings, roads or parks, etc. They are

- prime agricultural land
- Lands with lower elevation than 1.5m above the 50-year flood level,
- Coastal lands which are protected under Coast Conservation Department
- Lands identified as habitats of any threatened or endangered species by the Department of Wildlife Conservation
- Lands within specified distances of wetlands as defined by Central Environment Authority, or state law or the Ramsar Convention
- Lands in pre identified landslide-prone areas (GBCSL, 2011). (GBCSL, 2011).

Site Assessing in Green Buildings

After site selection identifying key components of the site will lead to find sustainable solutions to reduce or avoid natural damage. Components assessed are;

- Site topography includes aspects such as contour maps, unique topographical features, and slope stability risks (GBCSL, 2011). Assessing topography prevent risk of disasters such as landslides and floods.
- Site and surrounding hydrology includes flood risk areas, demarcated wetlands, lake and stream shorelines, rainwater collection and reuse opportunities, and the site's TR-55 initial water storage capacity (GBCSL, 2011).
- Local climate- Assessment of climatic conditions, insolation, heat island effect potential, seasonal sun angles, prevailing winds, monthly precipitation and temperature ranges are observed and reviewed (GBCSL, 2011).
- Vegetation includes identification of site's dominant vegetation types, calculation of grassland size, mapping of important trees, identifying endangered species, presence of unique habitats, and identifying invasive plant species. If the site has significant green

space, sustainable technology should be used to protect at least 40% of the site's green space.

- Soil type includes Natural Resources Conservation, Soil Delineation, USDA Quality Farmland, Soil Health Status, Past Development Activities Altering Soil, and Site Disturbed Soil.
- Human use, end outcome and human views of the project, adjacent transport infrastructure, adjacent land, and potential of building materials with potential for recycling or reuse are assessed (GBCSL, 2011).
- Adverse impacts to human (GBCSL, 2011)—consideration of adverse health effects, proximity to vulnerable populations, proximity to opportunities for physical activity, and proximity to major sources of air pollution.

Reducing Site Disturbance in High-Rise Buildings

Green building concept minimizes site disruption and damage. This includes conservation, providing green spaces and reduction of development footprint (GBCSL, 2011). Reducing site disturbance avoids biodiversity fragmentation. Downscaling construction projects reduce site disruptions (Goddard, Dougill, & Benton, 2010).

Various conservation strategies can be used to reduce site disturbance. Protecting the nature in construction sites is called site conservation. For urban sites, the environmental extent is low. In development, construction will expand to non-urban environmentally sensitive areas. EIAs or IEEs monitored by CEA are used to assess the environmental impacts of them (Hu, Shi, Xue, & Wang, 2020). Some construction activities result in pollution and destruction of vegetation (Hu et al., 2020). To mitigates this effect, most developers try to use brown fields which are abandoned lands polluted by construction pollutants. To redevelop Brown fields, rehabilitation techniques and reforestation are used.

Restoration of Damaged Areas in Construction Sites

Destroying of vegetation in construction is unavoidable sometimes. Sustainable techniques can be used to restore this destroyed vegetation. They are activities such as reforestation, leaving eco patches and creating landscapes. Restoration of damaged areas increases the green building validation score of a building.

There are different landscaping types which are used for restoration. They are;

Landscaped land patches – designing of land patch with trees or lawn which are easier to maintain because irrigation systems can be used to supply water & fertilizer (Thompson, W. J., & Sorvig, K. (2007).

Green Facades – a green wall system with climbing plants and cascading ground covers. Mostly plants with sucker roots are used to facades because they catch walls or fences.

Two types of green facades;

- a. Modular trellis panel system Blocks made out of galvanized steel; wires strong are used to grow vegetation.
- b. Cable and wire-rope net systems cables/wire ropes are used in this. Cables are acting as supporters to growing of climbing plants. To prepare the system high tensile wires and anchors are taken as material.

Living walls – vertically fixed pre-vegetated panels made of materials such as clay, coil or meshes used for both interior and exterior(Perini & Ottelé, 2012).

- a. Modular living wall Rectangular models with plant mediums. Water is supplied using drip irrigation systems.
- b. Vegetated mat wall plant grown medium made of two synthetic fiber layers fixed to the wall using a wooden frame. The fabric material retain water. Therefore, water and nutrients to the plants are allowed through it
- c. Landscape walls —sloped landscapes made using plastic or concrete structures. Medium of vegetation growth is kept as stacks in the slop

Roof top Gardens —a landscaping model used in high rise buildings with less space. These models are roof tops covered up with vegetation.

Green Transportation towards a Green Construction

Access to Green transportation is included in green building concept. To ensure sustainable development people should have effective green transportation techniques (Susnienė, 2012). Therefore, a green building must have access to green transportation.

In construction sector, there are two transportation stages. They are transportation while after the construction. In construction stage transportation is needed to transport material and debris. The transportation after completion is the transportation needed to the people which use the buildings. The transportation is done by using public or private transport. Using public transport is sustainable. Therefore, in selection of sites, access to public transport is considered. Also, efficient modes such as usage of electric vehicles can be encouraged (GBCSL, 2011). In green buildings there are stations available to charge electric vehicles in the parking spaces.

Storm Water Management

Storm water management is also an important aspect of sustainable sites. Different techniques are used to manage rainwater. Mostly high-rise buildings are constructed in urban areas. The effect of rainwater is higher in these areas since the other buildings, houses and complexes are situated nearby (Zeleňáková, Markovič, Kaposztásová, & Vranayová, 2014).

Some buildings use overhead rainwater collection tanks to manage rain water. But this method is not appropriate in continuous higher rain falls (Guo & Urbonas, 2002). In such occasions underground water tanks also should be used to collect the excess rainwater. And some uses underground storage tanks or basement deposition tanks. But these basements tanks can cause flooding in some extreme climatic situations. In deciding the capacity of rain water collection tanks and the placement of these tanks, the annual rain fall and flood index should be considered (Guo & Urbonas, 2002).

This collected rainwater is used for different purposes such as flushing, washing & drip irrigation systems. Some buildings install water purification systems to purify rain water to use rain water as drinking water. (Zeleňáková et al., 2014). In present computerized integrated software systems are also being developed for rain water management. (Chen, Samuelson, & Davila, 2015). In these practices rain water management systems are integrated with computer aided design software. This is used to design and effective storm water management system and estimate the collection of rain water (Chen et al., 2015).

Heat Island Mitigation

Heat island mitigation is important in green building validation. Heating occurs due to sunlight and angle of sunlight. Reflectance reduces the heat island effect. The reflectance changes according to used materials. The reflectance is determined by Solar Reflectance index value(GBCSL, 2011).

The major reason of urban heat island effect is absorption of solar radiation from the building materials instead of reflecting them(Kleerekoper, Van Esch, & Salcedo, 2012). Other causes are reduction of wind flow, increasing vehicle emissions, heat released in industrial combustions, air pollutants such as green-house gasses, inappropriate planning of cities and use of waterproofing materials which reduce evaporation by solar radiation (Kleerekoper et al., 2012).

Different countries undergo dramatic climatic changes in different seasons. Therefore, heat island mitigation techniques are not complied with the requirements of every climatic season. But Sri Lanka's sun light has an average intensity throughout the year. The climatic conditions of the construction sites are studied to identify suitable heat island mitigations techniques. In present, the major mitigation technique usage of solar panels to produce electricity. Green roofs and cool roofs are also used as

mitigation techniques. Cool roofs use material which absorb and reflect light. In green roofs, vegetation is grown to avoid heating and cooling is done due to evapotranspiration. (Li, Bou-Zeid, & Oppenheimer, 2014).

Methodology

This study was started with gathering information and a review literature on high-rise buildings in Sri Lanka, green building concept, green building rating system, sustainability & legislations. In considering high-rise buildings evolution & expansion of construction industry in Sri Lanka, involvement of green building council to certify them as green buildings were studied. Under green building rating system, achievement of SDGs in construction industry are studied.

Thereafter the components of green building rating system GBCSL were studied. Among them sustainable sites criteria which is responsible for 25% of score was selected. It has 11 criteria including one pre-requisite. They are erosion and sedimentation control as prerequisite, site selection(4points), site assessment and development(2points), development density and community connectivity(2points), Brownfield redevelopment and allowance for connectivity of green lands(1point), alternative transportation[3points] – [public transportation access (1point), parking capacity(1point encourage use of green modes of transport 1point] reduced site disturbance [6points] -[protect or restore habitat (2points), vertical greening (2points), development footprint (2points)], storm water design- quantity control (2points), storm water design, quality control (2points), heat island effect, non - roof (1point), heat island effect, roof (1point), light pollution reduction (1point). To study the sustainable sites criteria five buildings are selected. The selected sites are inspected and in sustainable sites criteria of each building were assessed. The criteria which were implemented in selected study sites, which are not implemented & improvements which can be done are studied.

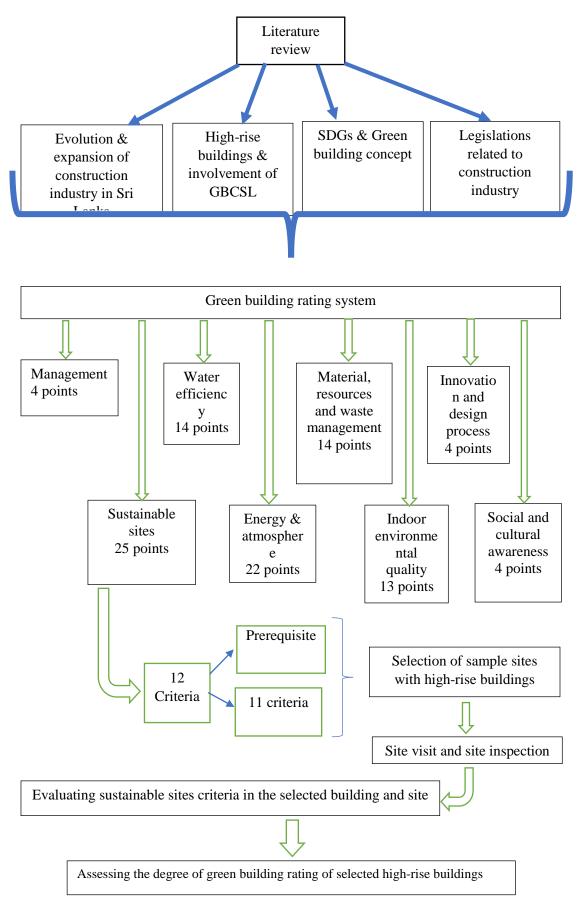


Figure 1. Methodology of Research

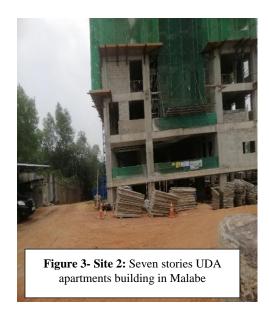
Green Building Rating of High-rise Buildings in Sri Lanka

ResultsPoints given to of green rating system in observed buildings

Criteria	Site 1	Site 2	Site 3	Site 4	Site 5
Soil erosion mitigation	Done	Done	No	Done	No
Site selection [4]	4	4	4	4	4
Site Assessment and development[2]	2	2	2	2	2
Development Density and Community Connectivity [2]	1	1	2	2	2
Brownfield Redevelopment and allowance for connectivity of Green Lands [1]	1	1	1	1	1
Alternative					
Transportation					
Public Transportation Access[1]	1	1	1	1	1
Parking Capacity[1]	1	1	-	1	-
Encourage use of green modes of transport[1]	1	1	-	1	-
Reduced Site					
Disturbance					
Protect or Restore Habitat [2]	2	1	2	2	2
Vertical greening [2]	1	-	2	2	1
Development footprint [2]	1	1	1	1	1
Storm Water Design, Quantity Control [2]	1	1	2	1	2
Storm Water Design, Quality Control [2]	-	-	-	-	-
Heat Island Effect, non – Roof [1]	1	1	1	-	1
Heat Island Effect, Roof [1]	-	-	1	-	-
Light Pollution Reduction [1]	1	1	1	1	1
Total points can be given	18	16	20	19	18

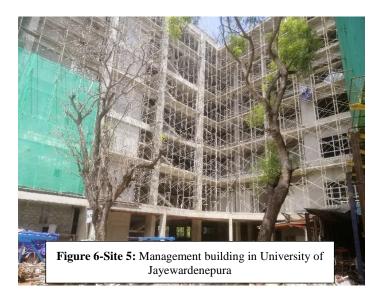
The above point table includes the points achieved by selected buildings, under sustainable sites criteria of green building rating system of green building council Sri Lanka (2011).











Discussion

The inspected high-rise buildings have some components of the of green building rating system (GBCSL, 2011). Even though, to obtain the points of each category, the prerequisite must be completed. As a result, some buildings cannot be rated under the Sustainable sites category. Therefore, they lose points even if other elements of the sustainable site category are present. Without consideration of prerequisite, each building received scores of 18, 16, 20, 19, and 18 respectively. Since 40 points is the minimum for green building certification, these buildings have a chance to get certified by earning least scores in other criteria of the Green Building Rating System.

If the score is low in the Sustainable Cities category, chances of getting green certification is very low because 62. 5% of 40 points can be achieved in the sustainable sites category. Also, sustainable sites category supports significantly to achieve of Silver, Gold and Platinum awards.

Sustainable sites category ensures environmental sustainability by protecting the environment, using green transportation, maximizing use of sunlight and rainwater. This reduces negative environmental impact significantly. As a result of environmental protection, ecosystems will remain undisturbed. This supports the society to full fill their needs sustainably and to build a sustainable economy.

In present most popular activity among the construction industry is the construction of high-rise buildings. In the process of constructing a high-rise building a large number of resources & extraction processes are included. Therefore, the triple bottom line of sustainability; environment, economy and society is affected significantly in construction. Since the green building concept significantly support the sustainable development strategies, usage of the maximum effort to achieve green building certification in a good degree must be done by the constructers.

Conclusion

In overall reserch it can be concluded that among the components of green building rating system(GBCSL), sustainable sites aspect is more important. Achieving sustainability by managing natural resources in an effective manner is more effective than finding newsustainable techniques in the construction industry, since some of the new techniques have massive drawbacks included in inner parts of them.

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Assessing the Multidimensional Approach to Poverty Reduction in Bangladesh: A Comparative Analysis from PRSP to 8th FYP

Masuda Kamal* Sabrina Afrin Tonny**

Abstract

This research article assesses the evolution and effectiveness of poverty reduction policies in Bangladesh from the Poverty Reduction Strategy Paper (PRSP) era to the 8th Five Year Plan (8FYP). Through a comparative analysis framework, the study examines how successive development plans address poverty's multifaceted nature, including both deprivation income-based measures social and indicators. Methodologically, the research integrates a comprehensive review of policy documents, supplemented by empirical data analysis where available. Key findings reveal shifts in policy emphasis towards a more holistic understanding of poverty, yet persistent challenges remain in effectively addressing social inclusion, human rights, and participatory development. The implications underscore the importance of continuous policy evaluation and adaptation to ensure a comprehensive approach to poverty reduction, offering recommendations for policymakers and stakeholders to enhance poverty reduction efforts in Bangladesh.

Keywords: Poverty, Bangladesh, Development Plans, Multi-dimensional approach

Introduction

Poverty has always loomed as a formidable threat to both global and national development, and Bangladesh is not an exception. In common parlance, poverty means a state of deprivation brought on by extreme economic circumstances that make it impossible for a person to sustain even the basic standard of existence. On the other hand formal definition of poverty denotes "the lack of, or the inability to achieve, a socially acceptable standard of living" (Bellù & Liberati, 2005). Despite having the definition of poverty, elimination often becomes difficult, according to Nyasulu (2010) eradication of poverty often fails because poverty is often wrongly defined. This statement was supported by David Gordon (2006, p. 1), as "Although poverty is a universal concept, its definition is often

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contested". Poverty comes in different shapes and sizes such as extreme poverty, absolute poverty and relative poverty(Decerf, 2021; Fritzell et al., 2015) each presenting unique challenges to human development.

Despite nuances in its manifestations, all development plans of every nation-state invariably prioritize poverty reduction as a fundamental objective. Since the emergence, even Bangladesh has been trying to address this issue and take necessary steps against it. As Hasnath (1987) says "The basic objectives of the First Five Year Plan were to reduce poverty, to minimize inequality of income and to get rid of dependency on foreign assistance" Unlike other countries, Bangladesh has been suffering from poverty-related issues from the inception because of its war-torn history(Jahan, 1973). Despite over five decades of independence, Bangladesh continues to confront significant challenges in addressing poverty. As of 2019, an alarming 20.5% of the population languished below the national poverty line, underscoring the enduring prevalence of economic deprivation (ADB, 2022). All these issues coupled with each other implies that the past development policies were failed to control the poverty. This failure caused overall fragility and touched all spheres of public life. The situation developed to such an extent that poverty was identified as a threat to the development process of Bangladesh(Salman, 2009). Along with fiveyear plans, many development plans' prime focus was poverty and poverty alone, still poverty of Bangladesh is a serious issue. While poverty can be defined from different dimensions such as political, social and economic, suggests recent scholarship that poverty by is nature multidimensional(Alkire et al., 2015; Thorbecke, 2013; Tsui, 2002). Poverty, by its very nature, defies simplistic categorization, encompassing a multitude of dimensions that extend beyond mere economic metrics. As a comprehensive poverty reduction strategy must adopt multidimensional approach, acknowledging the intricate web of social, economic, and political factors that underpin poverty. While successive five-year plans and development initiatives have ostensibly prioritized poverty alleviation, the persistence of poverty in Bangladesh prompts critical inquiry into the multidimensional nature of the country's development policies.

This research aims to assess the effectiveness of poverty reduction policies in Bangladesh, tracing their evolution from the Poverty Reduction Strategy Paper (PRSP) era to the implementation of the Sustainable Development Goals (SDGs). Through a comprehensive analysis of the progression of development plans and an evaluation of their strategies for poverty alleviation, this study seeks to assess how well these policies have addressed the multidimensional nature of poverty. The paper is structured to provide an introductory overview followed by an explanation of the analytical framework employed. Subsequently, it examines the evolution of poverty reduction policies, discussing key features and objectives. The

assessment of policy effectiveness entails a thorough analysis of their impact on multidimensional poverty reduction outcomes. Finally, the conclusion synthesizes the findings, offers insights, and recommends strategies for enhancing the multidimensional approach to poverty reduction in Bangladesh.

Analytical Framework

The analytical framework utilized in this study adopts a structured approach to assess the multidimensionality of poverty reduction strategies within the context of Bangladesh. Grounded in the recognition of poverty as a multifaceted phenomenon extending beyond mere economic deprivation, this framework delineates the key dimensions and variables essential for a comprehensive evaluation of poverty reduction efforts.

Definition and Measurement of Multidimensional Poverty

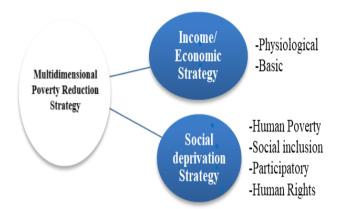
Multidimensional poverty is conceptualized as a state of deprivation encompassing diverse dimensions beyond income alone. These dimensions encompass various facets of individuals' well-being, including access to education, healthcare, housing, sanitation, nutrition, and opportunities for social and economic participation(Alkire et al., 2015). Measurement of multidimensional poverty necessitates the construction of composite indices that capture deprivation across multiple dimensions concurrently. Prominent among these indices is the Multidimensional Poverty Index (MPI), which integrates indicators spanning education, health, and living standards to provide a holistic assessment of poverty(Alkire et al., 2021).

Elements or Dimensions Considered in the Analysis

The analysis encompasses two primary dimensions: income poverty and social deprivation. Income poverty encapsulates individuals' lack of adequate financial resources to satisfy basic needs, typically gauged through indicators such as income or consumption levels relative to established poverty thresholds. Conversely, social deprivation pertains to the absence or limited access to essential services and opportunities, including education, healthcare, housing, sanitation, and social inclusion initiatives(Alkire & Foster, 2011).

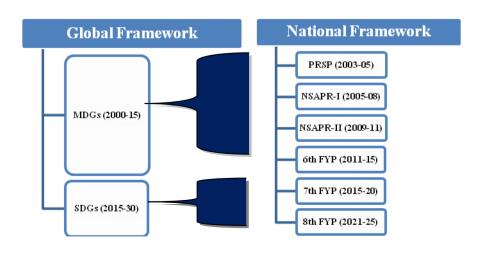
Dependent and Independent Variables

The dependent variable under scrutiny is the efficacy of poverty reduction strategies, operationalized as the degree to which development plans have succeeded in ameliorating multidimensional poverty in Bangladesh. Serving as independent variables are elements pertinent to both income/economic strategy and social deprivation strategy. These encompass various socioeconomic indicators, such as income/economic strategy consisting of physiological and basic indicators and social deprivation strategy consisting of indicators like human poverty, social inclusion, participatory, and human rights.



Assessment of Development Plans

The analysis entails a systematic evaluation of successive development plans, spanning from the inception of the Poverty Reduction Strategy Paper (PRSP) regime to the contemporary implementation of Sustainable Development Goals (SDGs). Each development plan is scrutinized to discern its approach to poverty reduction, with particular emphasis on its treatment of multidimensional poverty. Key aspects under review include the plan's strategies for mitigating income poverty, addressing social deprivation, and fostering inclusive development pathways. The study aims to find out whether the development plans, (from PRSP-SDGs) were multidimensional in terms of poverty reduction. Poverty multidimensional concept, and it consists of not only income-based poverty but rather social deprivation aspects as well. Here multidimensional poverty reduction strategy is a dependent variable, and elements of income as well as social deprecation are independent variables. In short; since poverty is multidimensional, and constitutes specific elements, hence poverty reduction strategy should also be multidimensional and is supposed to address all those issues. Each development policy will be explored based on the framework given below to find out whether they are multidimensional strategies or not.



By operationalizing this analytical framework, the study endeavours to furnish a rigorous appraisal of poverty reduction strategies in Bangladesh, illuminating their effectiveness in grappling with the intricate and multifaceted nature of poverty

Methodology

Research Approach

This study adopts a mixed-methods research approach, combining qualitative document analysis with quantitative data analysis to evaluate the effectiveness of poverty reduction policies in Bangladesh. By integrating both qualitative and quantitative methods, this approach allows for a comprehensive examination of poverty reduction efforts from multiple perspectives.

Data Collection

Data for this study will be primarily collected through document analysis, focusing on policy documents, government reports, development plans, and scholarly literature related to poverty reduction in Bangladesh. Secondary data from reputable sources such as international organizations and statistical databases will also be utilized to gather quantitative information on poverty indicators and economic variables.

Data Analysis

Qualitative data analysis will involve a thorough review and thematic analysis of the content obtained from policy documents and literature. Thematic analysis will help identify key themes, patterns, and narratives related to poverty reduction strategies, multidimensional poverty, and policy effectiveness. Quantitative data analysis will include descriptive statistics to assess trends in poverty indicators, economic variables, and social development outcomes.

Limitations

Limitations of the study may include constraints related to data availability, reliability, and completeness. Additionally, the inherent limitations of using secondary data, such as potential biases and inaccuracies, will be acknowledged. The study's scope may also be limited by factors such as time constraints and resource availability.

Overall, this research methodology aims to provide a robust analysis of poverty reduction policies in Bangladesh, leveraging both qualitative and quantitative approaches to gain insights into the multidimensional nature of poverty and the effectiveness of policy interventions. While expert interviews were not conducted, the mixed-methods approach ensures a comprehensive evaluation of poverty reduction efforts based on available data and literature.

Analysis

Bangladesh has implemented many development plans since its inception as an independent state. There were many varieties among them, these include 2-year plan, 5-year plan etc(Banglapedia, 2023). starting from PRSP, Bangladesh's development efforts have accelerated significantly over the past ten years. The nation has been motivated to set even greater goals by the signs of an unusually strong development track record. The nation's current goals are to become an upper-middle-income nation by 2031 and a developed nation by 2041(Byron & Mirdha, 2021). The country is now carrying out its 8th Five-Year Plan (FYP) to realize its Vision 2021, additionally, this is in line with the Bangladesh Delta Plan 2100, the Perspective Plan (2010-2021), and the Sustainable Development Goals (Alam, 2019).

The Poverty Reduction Strategy Paper (PRSP)

The Poverty Reduction Strategy Paper (PRSP) in Bangladesh provides an overview of both income- and human-based poverty trends (Ratho, 2020). Initially, the government sought support from development partners to draft the PRSP, but due to mismatched expectations, it decided to fund the preparation independently. Despite minor declines in income poverty between 1991/92 and 2000, human poverty persisted, encompassing factors like nutrition, education, and healthcare access, alongside gender inequality and child mortality(IMF, 2004; UNDP, 2002) (UNDP, 2002; IMF, 2004). The Poverty Reduction Strategy Papers (PRSP) predominantly prioritize income and economic strategies over social deprivation strategies. Throughout the document, the emphasis consistently lies on initiatives geared towards economic growth, income generation, and enhancing livelihood opportunities(IMF, 2003). For instance, the PRSP highlights strategies such as enhancing pro-poor growth, boosting critical sectors for pro-poor economic growth, and devising effective safety nets and targeted programs. These strategies primarily revolve around bolstering economic sectors, fostering entrepreneurship, and facilitating income-generating activities to uplift the socio-economic status of the population. Furthermore, while the PRSP acknowledges the importance of social development, it tends to approach it through an economic lens(CPD, 2005). The document mentions supporting strategies like ensuring participation, social inclusion, and empowerment, but the focus remains on how these aspects contribute to economic growth and poverty reduction. There is a lack of detailed discussion or concrete action plans regarding social deprivation indicators such as human poverty, social inclusion, participatory, and human rights.

Moreover, when discussing challenges such as food security and climate change, the PRSP primarily frames them within the context of their economic impact(*Poverty Reduction Strategy Papers - Banglapedia*, n.d.), such as rising food prices affecting household incomes and poverty levels.

While it recognizes the importance of addressing these issues, the proposed solutions often revolve around economic measures such as enhancing productivity and efficiency through technical upgrades rather than comprehensive social interventions.

National Strategy for Accelerated Poverty Reduction (NSAPR I)

The "Unlocking the Potential: National Strategy for Accelerated Poverty Reduction (NSAPR I)" was a Poverty Reduction Strategy Paper (PRSP) initiated in 2005, implemented from FY2005 to FY07, with an extension until June 2008. The transition from the Interim PRSP (I-PRSP) to the full PRSP involved extensive consultation processes. The final draft of the PRSP, titled "Unlocking the Potential: National Strategy for Accelerated Poverty Reduction," was completed in October 2005 after multiple consultation rounds(Planning Commission, 2005). The National Strategies for Accelerated Poverty Reduction I (NSAPR-I) predominantly centres on income and economic strategies, with a primary emphasis on bolstering the power sector to provide affordable and reliable electricity for all citizens of Bangladesh(Hafiz, 2012). This approach underscores the government's vision to enhance economic opportunities and promote sustainable development. NSAPR-I highlights initiatives aimed at improving infrastructure and increasing access to electricity, which are essential for economic growth and poverty reduction(Sultana, 2014). However, there is a limited discussion or explicit focus on addressing social deprivation indicators such as human poverty, social inclusion, participatory approaches, and human rights within the NSAPR-I framework(HaSina, 1985). While the initiatives outlined in NSAPR-I may indirectly contribute to social development, the primary focus remains on economic growth and income generation, highlighting a stronger orientation income/economic strategy rather than a comprehensive social deprivation strategy.

National Strategy for Accelerated Poverty Reduction(NSAPR II)

The new National Strategy for Accelerated Poverty Reduction (NSAPR II) is built upon a comprehensive framework that acknowledges the multifaceted nature of poverty in Bangladesh. It addresses socioeconomic factors that contribute to and sustain poverty within the nation(Ahead, 2008). The strategy consists of five strategic building components, including the macroeconomic environment for pro-poor growth, critical areas for pro-poor growth, essential infrastructure for prosocial protection for the vulnerable, and human development(Azad & Rahman, 2010). Additionally, supporting strategies are integrated, such as ensuring participation, social inclusion, and empowerment; promoting good governance; guaranteeing efficient delivery of public services; addressing environmental concerns and climate change; and enhancing productivity and efficiency through science and technology

(Planning Commission, 2005)This framework, implemented from fiscal year 2009 to 2011, is designed to tackle poverty through a holistic approach that considers various dimensions of poverty and emphasizes the importance of inclusive growth and sustainable development. The National Strategy for Accelerated Poverty Reduction (NSAPR-II) represents a pivotal step in development trajectory, aiming to tackle income/economic and social deprivation strategies comprehensively(P. Commission, 2008). While it is commendable for its ambition to address multiple dimensions of poverty, a closer examination suggests that the emphasis within NSAPR-II leans more heavily towards social deprivation strategy. This inclination might be attributed to several factors. Firstly, NSAPR-II was formulated in alignment with broader global development agendas, such as the Millennium Development Goals (MDGs) and later the Sustainable Development Goals (SDGs). These agendas prioritize social indicators like education, health, and gender equality, which might have influenced the emphasis on social deprivation within NSAPR-II(P. Commission, 2011). Secondly, Bangladesh's socio-economic landscape, characterized by high levels of inequality, gender disparities, and vulnerabilities to natural disasters, might have prompted policymakers to prioritize social interventions to address these pressing challenges. Issues such as access to education, healthcare, and social protection programs are critical in mitigating the impacts of poverty, especially among marginalized communities.(Azad & Rahman, 2010). Furthermore, the historical context of development planning in Bangladesh also played a role. Previous poverty reduction strategies, such as the Poverty Reduction Strategy Paper (PRSP) framework, often emphasized social development initiatives due to their immediate impact on poverty alleviation and human development outcomes.(General Economics Division, 2008). However, this emphasis on social deprivation strategy within NSAPR-II might have inadvertently overlooked the interconnectedness between income generation and social well-being. Economic empowerment, job creation, and access to productive resources are essential for sustainable poverty reduction, yet their prominence within NSAPR-II seems relatively subdued compared to social interventions. Moreover, the lack of customization of NSAPR-II to the specific context of Bangladesh might have contributed to disproportionate focus on social deprivation. Each country faces unique socio-economic challenges, and strategies need to be tailored accordingly to address local realities effectively. Failure to contextualize the strategy adequately might result in missed opportunities to address critical issues hindering poverty reduction efforts(P. Commission, 2008).

6th Five-Year Plan

The approval of the Sixth Five-Year Plan: Accelerating Growth and Reducing Poverty, covering the fiscal years 2011-2015, reflects the government's commitment to realizing the development objectives outlined

in Vision 2021 and the accompanying Perspective Plan 2010-2021(Alam, 2019; G. of B. P. Commission, 2011). This plan builds upon a series of development initiatives dating back to 1973, recognizing that in a marketoriented economy like Bangladesh, planning primarily serves as a strategic and advisory function. The emphasis of the Sixth Five-Year Plan lies in devising strategies, policies, and institutions to guide the private sector towards supporting Bangladesh in achieving the targets set forth in Vision 2021(Sawada et al., 2018). Notably, the plan places paramount importance on addressing both the economic and social rights of the people, alongside civil and political rights. Priority areas encompass poverty alleviation, human security, employment generation, food security, information and communication technology (ICT) advancement, infrastructure development, and human capital enhancement through education initiatives(Muzammil, 2020). This comprehensive approach underscores the government's commitment to fostering inclusive growth and sustainable development, thereby ensuring the well-being and prosperity of all citizens. The 6th Five-Year Plan (6th FYP) and the preceding National Strategy for Accelerated Poverty Reduction II (NSAPR-II) both aimed to tackle poverty through comprehensive strategies encompassing income/economic and social deprivation dimensions(General Economics Division, 2014). However, a closer examination reveals a nuanced shift in focus towards addressing social inequalities and promoting inclusive growth in the 6th FYP compared to NSAPR-II.In the 6th FYP, there was a deliberate emphasis on enhancing access to essential public services, such as education, healthcare, and social protection programs(G. of B. P. Commission, 2011). For instance, initiatives were introduced to strengthen education and healthcare infrastructure, expand social safety nets, and improve service delivery mechanisms, particularly targeting marginalized communities. These efforts were accompanied by policies aimed at reducing income inequality and ensuring that economic growth benefits all segments of society. Moreover, the plan underscored the importance of promoting equal opportunities for vulnerable groups, including women, the disabled, and ethnic minorities, thus addressing social inclusion comprehensively. Contrastingly, while NSAPR-II also recognized the significance of social deprivation strategies, its focus may have been relatively less pronounced compared to the 6th FYP(Alam, The emphasis in NSAPR-II might have been more macroeconomic policies and sectoral development, with less explicit attention given to social inclusion and equity. This observation is supported by the fact that the 6th FYP specifically prioritized social justice and inclusive growth as cornerstones of its development strategy, signalling a shift priorities towards addressing social disparities(Planning Commission, 2011). Additionally, contextual factors and evolving socioeconomic dynamics might have influenced the increased emphasis on social deprivation strategies in the 6th FYP. Bangladesh's socio-political landscape, demographic shifts, and emerging challenges such as climate change and urbanization could have contributed to a growing recognition of the importance of addressing social inequalities for sustainable development.

7th Five-Year Plan

The 7th Five-Year Plan (FYP) in Bangladesh aimed to increase job creation and poverty reduction while adhering to Sustainable Development Goal (SDG) targets, the plan focused on poverty reduction, sector development, macroeconomic development, urban development, human resource development, water and sanitation, infrastructure, and energy. Key aims included energy security, electricity coverage, and infrastructure like the Padma Multipurpose Bridge and the Deep Sea Port Project(Hasan et al., 2015). The plan aligns with the global agenda for higher growth in developing countries.

The 7th Five-Year Plan (7th FYP) of Bangladesh indeed encompasses strategies aimed at addressing both income/economic development and social deprivation(Bss, 2014). In terms of economic strategy, the plan sets ambitious targets for key economic indicators such as per capita income, GDP growth, and investment to GDP ratio. For instance, the plan aimed to achieve a per capita income of \$2009 by the deadline, and by June 30, it had surpassed this target, reaching \$2064. Additionally, the plan aimed for a GDP growth rate of 8%, and in FY19, the country recorded a growth rate of 8.15%, exceeding the target. Moreover, the plan included strategies to enhance infrastructure, boost investment, and promote exports to strengthen the economic base of the country(Sen & Ali, 2015). On the other hand, the 7th FYP also prioritized addressing social deprivation through various strategies. It aimed to reduce the poverty rate to 18.6%, lower than the 20% target included in the plan. While the poverty rate was 24.8% in 2015, the plan aimed to make significant progress in poverty alleviation(Growth, 2015). Furthermore, the plan emphasized social inclusion and human rights promotion by targeting issues like youth unemployment and ensuring equal opportunities for all segments of society(Rahman, 2020). However, despite these intentions, challenges remain, as highlighted by the Citizen's Platform for SDGs, Bangladesh. They noted concerns about the failure to achieve aggregate employment targets, particularly among educated youth, indicating potential gaps in the plan's effectiveness in addressing social deprivation(BusinessInsiderBd.com, 2020).

In essence, while the 7th FYP presents a comprehensive strategy to foster economic development and address social deprivation, its effectiveness in achieving these goals requires careful evaluation and continuous improvement. The plan's achievements in surpassing some economic targets demonstrate progress, but challenges persist, particularly in areas related to poverty reduction and social inclusion. Thus, ongoing monitoring and adaptation of strategies are essential to ensure that the plan

effectively translates into tangible improvements in the lives of the Bangladeshi population.

8th Five Year Plan

The Seventh Five-Year Plan (7FYP) concluded in June 2020. The 8FYP has been postponed owing to the Covid-19 epidemic. The FYP focuses on a propoor growth plan and is named "Promoting Prosperity and Fostering Inclusiveness", There are seven themes in this method(Planning 2020). These include labor-intensive, export-oriented Commission. manufacturing-led growth, agricultural diversification, dynamism in cottage, small and medium enterprises, modern services sector, ICT-based entrepreneurship, and overseas employment, as well as inflation, public and private investment, employment, poverty reduction, revenue mobilization, and, most importantly, sectoral performance due to the COVID-19 pandemic, including education and health(Alamgir & Byron, 2024; UNB News, 2020)(8th FYP). The 8th Five Year Plan (8FYP) of Bangladesh represents a significant stride towards addressing income/economic strategies and social deprivation, embodying a multifaceted approach to development(Saif & Tajmim, 2023). In its formulation, the plan explicitly aims to propel economic growth while ensuring that the benefits of this growth are distributed equitably across society. For instance, the plan's focus on labor-intensive manufacturing-led growth suggests a deliberate effort to create employment opportunities, particularly for marginalized groups(Khatun, 2018). By prioritizing themes like agricultural diversification and the development of the modern services sector, the plan seeks to expand income-generating avenues and foster entrepreneurship, thus contributing to poverty reduction and economic empowerment. Moreover, the 8FYP underscores the importance of social inclusion and development empowerment, recognizing that sustainable addressing underlying social inequalities. Through targeted programs aimed at the "left behind people and areas," the plan seeks to uplift marginalized promote communities and equal access to resources opportunities(Planning Commission, 2020). Themes such as women empowerment and financial sector reformation further attest to the plan's commitment to inclusivity, as they aim to remove barriers and create an enabling environment for all segments of society to thrive. Additionally, the plan's acknowledgement of the challenges posed by COVID-19 and climate change reflects a nuanced understanding of the interconnectedness between economic development and social well-being. By integrating strategies to mitigate the adverse effects of these global phenomena, the 8FYP demonstrates a forward-thinking approach that prioritizes the resilience and sustainability of Bangladesh's development trajectory(Moazzem & Shibly, 2021).

Overall, the 8th Five-Year Plan exemplifies a comprehensive strategy that intertwines income/economic growth with measures to address social

deprivation, thereby laying the groundwork for a more prosperous, equitable, and resilient future for Bangladesh.

Result/Findings

- The PRSP's emphasis on strategies aimed at economic growth, income generation, and economic stability, along with the limited discussion on social deprivation indicators, underscores its primary focus on income/economic strategy rather than a comprehensive social deprivation strategy.
- While NSAPR-II signifies a notable transition in Bangladesh's poverty reduction strategy by introducing elements of the social deprivation strategy, its primary emphasis remains on income/economic strategy. However, the introduction of the social deprivation strategy, albeit less pronounced, marks a significant step towards a more holistic approach to poverty reduction. Moving forward, it is imperative to strengthen both income/economic and social deprivation strategies in tandem to achieve sustainable and inclusive development in Bangladesh.
- Both NSAPR-II and the 6th FYP aimed to combat poverty through multifaceted approaches, the latter demonstrated a clearer and more pronounced focus on addressing social deprivation and promoting inclusive growth. This shift reflects a deeper understanding of the interconnectedness between social, economic, and environmental factors in driving sustainable development outcomes, thereby positioning the 6th FYP as a crucial milestone in Bangladesh's development trajectory towards achieving equitable and inclusive prosperity.
- The 7th Five-Year Plan in Bangladesh was designed to tackle multidimensional poverty through a comprehensive approach. While emphasizing economic growth, it also targeted social inclusion and human rights promotion. Strategies aimed to surpass income and GDP growth targets, while initiatives focused on poverty reduction and social inclusion. Despite achievements in some economic indicators, challenges persisted in meeting employment goals, indicating the need for a more nuanced approach to address multidimensional poverty effectively.
- The 8th Five Year Plan (8FYP) of Bangladesh integrates income/economic strategies aimed at fostering economic growth through initiatives like labor-intensive manufacturing-led growth and agricultural diversification. These strategies seek to enhance productivity, generate employment, and diversify income sources to improve economic indicators. Additionally, the plan includes social deprivation strategies focused on promoting social inclusion,

empowering marginalized communities, and ensuring the protection of human rights, thereby addressing social inequalities and fostering holistic development.

Conclusions

The analysis highlights Bangladesh's ongoing commitment to poverty reduction but also reveals historical shortcomings in policy effectiveness. While initiatives like the PRSP and SDGs have focused on poverty alleviation, they often overlooked the multidimensional nature of poverty. This oversight has hampered progress in poverty reduction efforts. Additionally, the lack of comprehensive policy evaluations, as seen in the initial PRSP assessment, underscores a systemic issue in policy analysis and adaptation. However, recent policies show a promising shift towards more multidimensional approaches, indicating a growing awareness of the need for comprehensive poverty reduction strategies. Moving forward, stakeholders must prioritize rigorous evaluations to ensure policy effectiveness and relevance, thereby enhancing Bangladesh's capacity to combat poverty and promote sustainable development.

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Online Business for Women's Independence: A Study on Women Empowerment in Bangladesh

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Abstract

In today's era, the educated women don't prefer to stay inside the walls of their own homes. They want equal rights and respect from their equivalent males. They want to use their talent and knowledge in their own businesses in addition to handle home duties. Women are rapidly gaining popularity and significant value in our economy as a result of economic globalization. Women have demonstrated that they can enter and work in every sector. Now-a-days, women are performing exceptionally well in online business in development of information and communication Bangladesh. Thetechnology facilitates the women to take up new ventures and work from home. As a result, many women are participating in these online businesses and contributing to the progress and prosperity of the country. Along with this, it is also playing a supporting role in protecting and empowering women's rights. This study tries to analyze the existing prospects and barriers in online business for women in Bangladesh. Additionally, an effort is made to look at the many difficulties experienced by women who use online platforms to launch, develop and maintain their businesses.

Keywords: Women, Business, Empowerment, Technology.

Introduction

The digital revolution started in the developed countries in the late 20th century but in the 21st century it expanded to most of the developing countries. The unexpected development of information and communication technology has brought modernity and new dimensions to the world of business. The benefits of information and communication technology have spread to our cities and villages since 2009 as a part of the initiative to build digital Bangladesh. As a result, there is an opportunity to expand online business from cities to villages. Online shopping has become popular among us. Grassroots people are also getting involved in it.

The women in our country have started to take an active role in society like the women of other countries. Today every aspect of women's daily life is dependent on technology. Women are developing their own careers with the help of this technology in new ways. Now they don't have to hesitate

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before entering work. Meanwhile, as the rate of educated women is increasing, they are joining various professions with the help of information technology. Women today are moving ahead with great skill overcoming all obstacles. According to study by the Bangladesh Bureau of Statistics, women employment of our country rose from 33.5 to 36.3 percent between 2013 and 2017 (Daily Bonik Barta, 31 August, 2021). The economy will grow by 0.31 percent if women employment rises by percent. In Bangladesh, 31.2 percent of women are covered by wages against 42.6 percent of men.

In the past 50 years, women have made various contributions in various sectors of our economy. Women in particular have helped our economic progress through their labor. If the social and economic barriers can be overcome, the labor efficiency of women will increase. Since the success of economic growth lies in the employment of women, therefore everyone should be sincere and attentive in this regard.

Literature Review

Now-a-days online business or e-business provides a suitable atmosphere for women to enter and engage to business. There are many online platforms that offer virtual workplaces and digital lifestyle for women. This online process gives many facilities to women to work at anytime from anywhere. With the help of these online platforms women are selling various products including clothes, jewelry, handmade items, ready-made food etc (Dainik Amader Shomoy, 9 February, 2021). Many women are working to highlight the native culture. Someone has started a business with hobby products. In this way, women in our country can become entrepreneurs more easily. Online business is hassle free and it does not require a lot of money (The Financial Express, December 29,2020). As a result, women are particularly interested in this independent business in addition to manage the family responsibilities.

An entrepreneur is a person who embraces risk and uncertainty, recognizes major opportunities and gathers the resources required to launch a new business and generate growth earnings in order to profit from those resources (Fanggidae et al., 2019). In other words, an entrepreneur is someone who considers and controls the risk of a company or a business. On the other hand, entrepreneurship is a collective concept of operating a profitable business through knowledge, skill and desire. The key characteristics of an entrepreneur are taking initiatives, inventing new possibilities and anticipating possible risks (Cuervo et al., 2007; Sharma & Grewal, 2018; Pushpam & Thirumal, 2020).

Every woman has an entrepreneurial potential. The women or group of women who establish, manage and run a business are known as entrepreneurial women (Goyal & Parkash, 2011; Babu, 2012). Most women entrepreneurs in Southeast Asia are involved in small and medium

enterprises (ESCAP, 2017). Women entrepreneurs of our country are educated and skilled. They deserve praise for tackling various challenges. Increasing interest of women entrepreneurs in online business is being cited as positive by e-commerce stakeholders. Currently, online platforms have created opportunities for women to work from home with the help of technology. The number of women as online buyers is also high. According to the E-Commerce Association of Bangladesh (E-CAB), there are about 20,000 Facebook pages for shopping in the country. Among them, 12 thousand pages are run and managed by women. Using Facebook as a medium, women are becoming entrepreneurs with little investment. According to E-CAB data, more than one thousand five hundred crore taka has been transacted in the e-commerce sector in one year (Daily Prothom Alo, 13 October, 2019).

Objective of the Study

Despite numerous barriers, women are attempting to carve out a position for themselves in online business sector. They have contributed significantly to our economy. This study makes an effort to examine the place and function of women in online business in our country. Besides it aims to see how women have benefited and empowered. The specific objectives of this study are

- 1. To investigate the position of women in online business.
- 2. To look at the difficulties that faced by women in online business.
- 3. To examine how the online business has influenced the empowerment of women.
- 4. To learn how women can drive the growth of our economy via online business.

Methodology and Sources of Data

The present study is of an explanatory type. Both primary and secondary data have been used here. Primary data was gathered directly from the respondents through questionnaires. Women entrepreneurs who have been in online business more than three years were regarded as respondents. A total of 55women entrepreneurs (respondents) were selected and interviewed to collect data from the study areas. All of the interviews were recorded. The questionnaire was limited to respondents' current situation, past experiences, current challenges and possible future prospects related to their online business. Two case studies were conducted in the study areas. In addition, secondary sources included national dailies, relevant articles, several research books and websites. The findings of the study were presented through tables and graphs. The data was processed using Microsoft Excel software.

Study Areas

The current study was carried out in the cities of Dhaka, Cumilla and Mymensingh. Dhaka, the capital of Bangladesh, is the most populated city. With 30,093 people per square kilometer, Dhaka topped the list of the cities with the highest population density in 2022. Cumilla and Mymensingh are two largest cities which closest to Dhaka, with population densities of 16,000 and 6,300 per square kilometer respectively. Considering the facilities, online businesses have developed mainly in big cities. To observe the present scenario of online business, these cities have been selected as study areas.

Limitation of the Present Study

The main limitation of the present study is the small number of sample cities. Only three cities were selected mainly due to low budget and time constraints. Emphasis is placed on representativeness in city selection.

Results and Discussions

It is true that women are always focused on their families. However, women today are well-positioned with good earning potential in online business. They are satisfied doing this business. They claimed they could support their family. They said that they might use their funds as they pleased. They are no longer dependent on anyone for financial support.

A semi-structured questionnaire survey was used to carry out the present study. I initially separated the respondents based on their age, level of education, work history, marital status and contribution to household expenses. Tables are used to present the findings of the study.

Age			
Year	Frequency	Percentage (%)	
Below 25	8	14.55	
25-30	18	32.73	
31-35	24	43.64	
Above 35	5	9.09	

Based on the survey, 14.55% of respondents are under the age of 25, while 32.73% of are between the ages of 25 and 30, 43.64% are between the ages of 31 and 35, and just 9.09% are older than 35. The most of the responders, according to this data, are youthful and active.

Educational qualification			
Degree	Frequency	Percentage (%)	
Post Graduate	9	16.36	
Graduate	28	50.91	
Under Graduate	12	21.82	
Other	6	10.91	

The respondents' level of education is shown in Table 2 for comparison. The majority of responders (50.91%) have graduated, as can be seen from this table. Additionally, 16.36% of them have post graduate degrees, while 21.82% have undergraduate degrees. It is noteworthy that respondents have significant levels of knowledge and experience with digital platforms.

Duration of Business			
Year	Frequency	Percentage (%)	
Below 2	12	21.82	
2-4	20	36.36	
5-7	15	27.27	
Above 7	8	14.55	

The respondents' year of experience is shown in Table 3. According to data, 21.82% of respondents have experience below two years, while 36.36% have experiences between 2-4 years and 27.27% of the respondents have 5-7 years experiences. Conversely, 14.55% have work histories longer than seven years.

Marital Status			
Status	Frequency	Percentage (%)	
Married	35	63.64	
Unmarried	15	27.27	
Single Parent	3	5.45	
Divorced	2	3.64	

According to the report, 63.64% of the respondents are married, which is the majority. In contrast 27.27% of respondents are single, 3.64% are divorced and 5.4% are single parent.

Contribution in household expenses (in BDT)			
Amount	Frequency	Percentage (%)	
Less than 10,000	4	7.27	
10,000-15,000	27	49.09	
15,000-20,000	18	32.73	
Above 20,000	6	10.91	

Table 5 demonstrates that online business women make a significant monthly contribution to their household expenses. The table shows that 7.27% of total respondents are contributing less than 10,000 taka per month. On the other hand, around half of all respondents make a monthly contribution of between 10,000 and 15,000 taka.

Women Empowerment

Women's development and economic development are significant topics of discussion in our society. It basically refers to gender equality which means the position of women in the economic and social context. Disadvantaged women in our society are ensuring their empowerment by organizing other women and voicing their opinions through online activities. Women's full dignity is being achieved through decision-making, implementation, control and equal benefits in various fields. Women are empowering themselves and becoming independent today with the help of information technology. It paves the way for empowerment of women through economic freedom.

Obstacles for Online Business Women

It takes some effort and initial investment to start an online business, but it is now more cost-effective than it always was. It is true that this particular sector presently gains all attentions. Every woman who runs a business online faces a number of significant obstacles. After talking to the respondents of this study I got to know about some problems and challenges. Below is a list of the top three challenges.

Women in our country are chained to the four walls of their homes and need a sheltered life. They have lower levels of education and are less independent economically than males. Women have lack of self confidence in their own skills. All of these factors make it harder for women to take risks.

The main concern for any woman in our country is family support. Many respondents claim that society still look down upon independent women. They complain that the patriarchal society still discriminates against women in the workplace. Even some family members believe that women shouldn't work outside the home. Furthermore, cultural norms may discourage a woman from starting her own business.

Online businesswomen typically do not have adequate property in their names, which prevents them from accessing financing. A businesswoman faces greater challenges than a man in obtaining a bank loan. Additionally, the bank disapproves of them for loans since the authority believes women are less creditworthy.

Ways to Overcome the Obstacles

The fundamental prerequisite in development of women is to make aware the women regarding her existence, her unique identity and her contributions to national economic development. The removal of obstacles for online business women requires a major change in usual manners and mindsets of people in society. On the other hand, most of the respondents are doing their business from home without a trade license. Consequently, it's difficult for the government to provide loans to someone without a license. We should develop a program where women can register their online business using an online system and can apply for bank loans. It is mentioned that our government has taken some initiatives to provide loans and tax exemptions for women.

Case Study 01

Jannatul Ferdous, age 40, lives in Mymensingh. She is the owner of 'Sulov Butics'. She has a family with husband and 2 children. Her husband works in a private college as an Assistant Professor in Mymensingh. She started her off line business in 2005 at her home. During the Corona epidemic, with the help of social media Facebook (Uddokta Mymensingh), she started her online business. Her sells mainly Salowar Kamiz, Bed sheet, Hijab, Hand bag, Hand stitch three pieces etc. Basically, she chose this business to work independently without being dependent on others. She started this business with taka 10,000/- given by her husband. Currently her monthly income is around taka 30,000/-. During Eid and Puja festivals, it crosses one lac. Due to rising commodity prices, only one family member's income can no longer cover household and educational costs. That is why she reinvests earned income in her business to fulfill the basic needs of the family. She is getting support from all the family members including her husband. She said that she is getting a lot of response by launching this new initiative at her home on Facebook. She also said that honesty is a great asset for online businesses. She added that she now believes she has successfully established herself as an entrepreneur.

Case Study 02

The 45-year-old Sonia Parvin Suchi resides in Dhaka. She is the proprietor of "Suchi's Collection". Her family consists of her husband and three little boys. Her husband works in a private company. When her older son was a little child, she launched her online business. She said that it was not possible to go out for work but the desire to stand on my own feet involved me in this business. She started this business with Rangpur's famous Shataranji, table mat investing taka 5,000/-. Initially she spent some money for boosting her business. She mentioned that the profit is only half of what it was previously because everything has increased in price. She continued by saying that earnings are reinvested back into the business, with some going toward personal expenses and savings. She highlighted that there is a risk that the entire amount deposited will not be returned on time. She expects that Bangladesh government will provide more opportunities for the promotion and expansion of domestic products.

Conclusion

Almost half of the population of Bangladesh is women. We have to walk the path of development along with the entire women society of the country. To become an industrialized high-income country by 2041, we must ensure equal participation of men and women in every sector. The results of this study indicated that online business is convenient and easy choice for women in our country. The use of appropriate knowledge of information technology is playing a role in the employment of women as well as creating women entrepreneurs. Along with this, it is also playing a supporting role in protecting and empowering women's rights. Without any doubt women's participation has been able to play a major role in the overall development of this country. So, various steps should be taken to encourage and support online business women so that they can develop and empower themselves.

Recommendations

Making an environment for women running online business is surprisingly simple. Some hints, suggestions, counsel and motivational ideas that can assist women, especially homemakers, in starting successful online business. The following actions can be taken for the betterment of online business women

- 1. All family members should help women for running their online businesses.
- 2. Employment opportunities should be created for women by imparting information and communication technology education.
- 3. Educated and unemployed women should be encouraged to become self-reliant through self-employment.
- 4. Some conceptual changes should be taken to transform women into human resources through relevant training.
- 5. Women should be given priorities in all planning related to their developments. Women friendly environment should be established based on information and communication technology.
- 6. Some initiatives should be taken by government to provide loans and tax exemptions for online business women.
- 7. The government should properly monitor the online business process to stop harassment of both buyers and sellers.

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Perception towards Political Economy among General Public, Students and Public Officials in Bangladesh

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Abstract

The study aims to investigate perceptions of political economy among the general public, students, and public officials in Bangladesh, along with the factors influencing these perceptions. Employing a qualitative methodology, semi-structured questionnaires was used to gather insights from representative samples of each group. Purposive sampling was used to select participants, ensuring diversity in demographics and maintaining gender representation across tiers. Content analysis was then employed to analyze the data, identifying recurring themes and patterns. Findings reveal a lack of familiarity with political economy among the general public, while students, particularly from social science disciplines, display higher levels of understanding. Public officials, especially those in high-ranking positions, exhibit varying levels of familiarity, with notable gaps in practical application. These results highlight the need for targeted educational initiatives to enhance economic literacy and promote practical utilization of political economy knowledge. Ultimately, addressing these gaps is crucial for fostering informed decision-making, addressing socio-economic challenges, and promoting sustainable development in Bangladesh.

Keywords: Political economy, Perception, Bangladesh, General public, Students, Public officials

Political economy, the interdisciplinary study of the interaction between

Introduction

political and economic processes, is crucial for understanding how societies allocate resources, make decisions, and shape public policies (Lange 2013). Within this framework, perceptions of political economy play a significant role, influencing individuals' attitudes, behaviors, and policy preferences. Understanding these perceptions is particularly vital in the context of Bangladesh, a country marked by complex socio-economic challenges and dynamic political dynamics (Basu, Devine, and Wood 2018; Lewis 2011). This study aims to investigate perceptions of political economy among various stakeholders in Bangladesh, including the general public, students, and public officials. By examining these perceptions, this study seeks to shed light on how individuals interpret and evaluate the interplay between politics and economics in the Bangladeshi context.

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This research is significant for several reasons; First of all, Perceptions are not just passive observations; they are active lenses through which individuals interpret and engage with the world around them (Witkin 1949). In the realm of political economy, these perceptions wield considerable influence (Evans and Andersen 2006), shaping public opinion, policy preferences, and even political behavior. For instance, studies have shown that individuals' perceptions of economic fairness and justice strongly correlate with their support for redistributive policies and social welfare programs (Alesina and La Ferrara 2000). Similarly, research has demonstrated how perceived economic opportunities and mobility affect voting behavior and political participation (Alesina and Glaeser 2004; Leighley 1995). Secondly, the impact of perceptions extends beyond the realm of electoral politics. Policymakers rely on public sentiment and attitudes towards economic issues to gauge the feasibility and acceptability of proposed policies (Erikson and Tedin 2019; Soroka and Wlezien 2010). For example, the success of austerity measures or tax reforms often hinges on public perceptions of their fairness and effectiveness (Barnes 2015; Graham 2002). Similarly, educators and curriculum designers must be attuned to students' perceptions of political economy to develop effective pedagogical strategies and foster critical thinking about economic issues (Kagawa 2007; Kilburn, Nind, and Wiles 2014; Lai and Lo 2011). Finally, civil society actors, including advocacy groups and non-governmental organizations, also recognize the importance of understanding and shaping perceptions of political economy (Beeson 2001; Hall and O'Dwyer 2017). By mobilizing public opinion and framing issues in ways that resonate with diverse constituencies, these actors can influence policy agendas and promote social change (Dür and Mateo 2014).

Perceptions shape public opinion, policy preferences, and political behavior (Broockman and Skovron 2018; Manza, Cook, and Page 2002). Understanding how different groups perceive political economy can provide valuable insights for policymakers, educators, and civil society actors seeking to address socio-economic challenges and promote informed decision-making. While existing literature in political economy provides valuable insights into economic structures and political processes, there remains a gap in understanding how individuals perceive and interpret these phenomena. By focusing on perceptions, this study contributes to filling this gap, enriching our understanding of the complex relationship between politics and economics.

The primary objectives of this research are as follows:

- To explore the perceptions of political economy among the general public, students, and public officials in Bangladesh.
- To identify factors influencing these perceptions, including socioeconomic background, education, and political ideology.

• To assess the implications of these perceptions for policy formulation, public discourse, and civic engagement.

This study will employ a Qualitative methods approach, using Semistructured questionnaire to gather comprehensive insights into perceptions of political economy. Surveys will be administered to representative samples of the general public, students, and public officials. After that data will be analyzed using content analysis. Following this introduction, the paper will proceed as follows: Section II will outline the research methodology, including sampling, data collection, and analysis procedures. Section III will present the Analysis of the study, followed by a Result of their implications in Section IV. Finally, Section V will offer concluding remarks and suggestions for future research.

Methodology

This study will employ a qualitative methods approach to explore perceptions of political economy among various stakeholders Bangladesh, including the general public, students, and public officials. The methodology will involve the use of semi-structured questionnaires designed to gather comprehensive insights into participants' perceptions of political economy. Surveys will be administered to representative samples of the target groups: students, public officials, and the general public. For the selection of participants, purposive sampling techniques will be employed. For students, approximately 30 individuals at the tertiary level, representing both social and natural science disciplines with exposure to or interest in political economy, will be recruited. Similarly, approximately 30 public officials will be selected using purposive sampling from various government departments and agencies. The general public will be sampled randomly, with approximately 30 individuals recruited from diverse demographic backgrounds. Gender representation will be maintained across the 3 tiers (students, public officials, general public) to ensure diverse perspectives are captured. Upon data collection, content analysis will be employed to analyze the qualitative responses gathered from the semistructured questionnaires. This approach will involve identifying recurrent themes, patterns, and insights related to perceptions of political economy across the 3 participant groups. Additionally, the findings will be presented using graphical illustrations such as graphs and charts to enhance the clarity and visual impact of the results. Overall, this qualitative methodology aims to provide rich and nuanced insights into how individuals interpret and evaluate the interplay between politics and economics in the Bangladeshi context.

Analysis

The analysis chapter will delve into the levels of familiarity, degree of knowledge, and application of political economy among the general public, students, and public officials. Through qualitative examination, this section

aims to provide insights into how different segments of Bangladeshi society perceive and engage with political economy using graphical illustrations.

Familiarity, Knowledge and Application of Political Economy among General Public

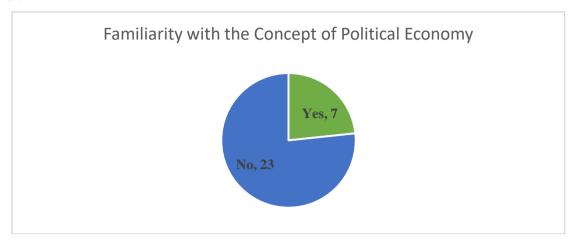


Figure 1: Familiarity with Political Economy among the General Public

Figure 1 indicates that out of the 30 respondents from the general public surveyed, only 7 individuals reported familiarity with the concept of Political Economy. Among these respondents, 5 were male and 2 were female. Conversely, the majority of respondents, totaling 23 individuals, expressed a lack of familiarity with Political Economy. Within this group, 18 were female and 4 were male.

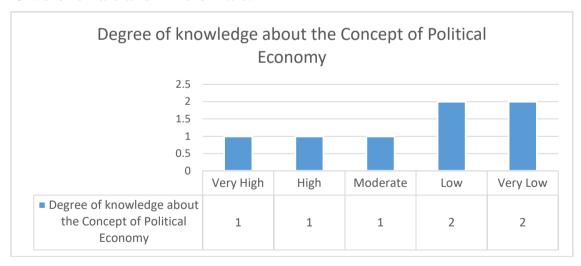


Figure 2: Degree of Knowledge about Political Economy among the General Public

Figure 2 indicates the range of knowledge levels about Political Economy among respondents from the general public. Out of the 7 individuals surveyed, the distribution of their knowledge levels is as follows: Among these respondents, 1 individual demonstrated a very high degree of

knowledge, while 1 exhibited a high degree of knowledge. Additionally, 1 respondent possessed a moderate degree of knowledge. On the lower end of the spectrum, 2 respondents had a low degree of knowledge, and 2 respondents had a very low degree of knowledge.

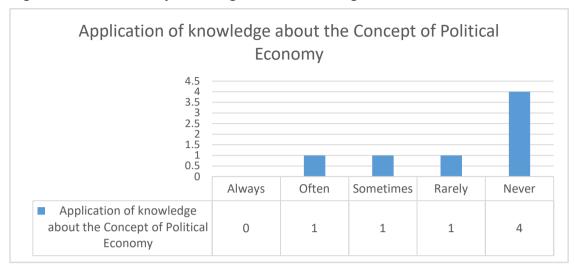


Figure 3: Application of Knowledge about Political Economy among the General Public

Figure 3 illustrates the frequency with which respondents from the general public apply their knowledge about the concept of Political Economy. Among the 7 individuals surveyed, the distribution of their application of knowledge is as follows: None of the respondents reported always applying knowledge about the concept of Political Economy.1respondent indicated often applying this knowledge, while another mentioned sometimes applying it. Additionally,1respondent stated rarely applying knowledge about Political Economy, while the majority, comprising four respondents, reported never applying this knowledge.

Familiarity, Knowledge and Application of Political Economy Among Students

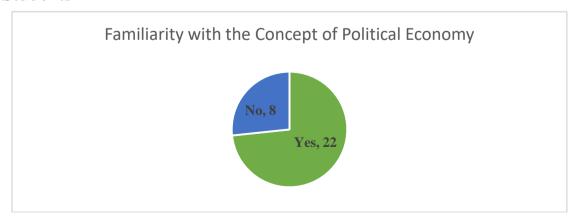


Figure 4: Familiarity with Political Economy among Students

Figure 4 provides insights into the level of familiarity with the concept of Political Economy among students. Out of the 30 students surveyed, a majority of 22 respondents reported familiarity with Political Economy. Among these respondents, 17 were from social science disciplines, while 4 were from natural science disciplines. Conversely, a minority of 8 students indicated a lack of familiarity with Political Economy. Within this group, 7 students were from natural science disciplines, and 1 student was from a social science discipline.

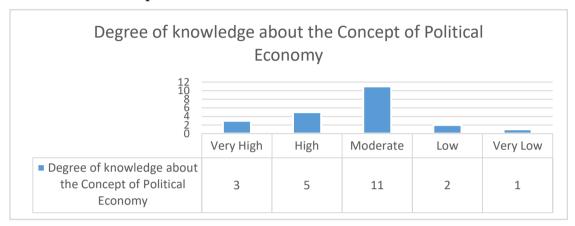


Figure 5: Degree of Knowledge about Political Economy among Students

Figure 5 illustrates the distribution of knowledge levels regarding Political Economy among the 22 student respondents. Among these students, there were varying degrees of knowledge observed. 3 students demonstrated a very high degree of knowledge, while five students exhibited a high degree of knowledge. Additionally, eleven students possessed a moderate degree of knowledge, 2 students had a low degree of knowledge, and1student had a very low degree of knowledge.

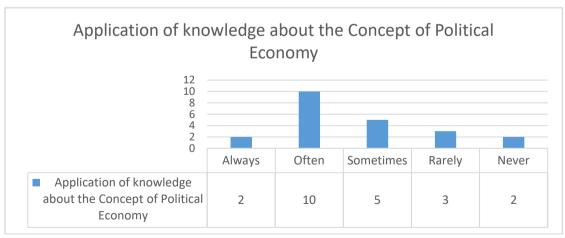


Figure 6: Application of Knowledge about Political Economy among Students

Figure 6 presents the frequency of applying knowledge about the concept of Political Economy among the 22 student respondents. Among these students, the distribution of their application of knowledge is as follows: 2 respondents reported always applying knowledge about the concept of

Political Economy, while ten respondents indicated often applying it. Additionally, five respondents mentioned sometimes applying knowledge about the concept, and 3 respondents stated rarely applying it. Lastly, 2 respondents reported never applying knowledge about the concept of Political Economy.

Familiarity, Knowledge and Application of Political Economy Among Public Officials

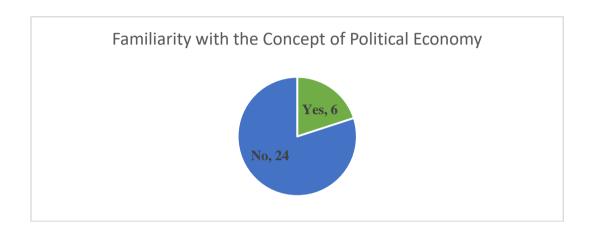


Figure 7: Familiarity with Political Economy among Public Officials

Figure 7 provides insights into the level of familiarity with the concept of Political Economy among public officials. Out of the 30 public officials surveyed, the majority, totaling 24 respondents, reported being unfamiliar with Political Economy. Among these respondents, 20 belonged to high-ranking officials, while 4 were low-ranking officials. Conversely, a minority of 6 public officials indicated familiarity with Political Economy. Interestingly, all 6 of these respondents belonged to the high-ranking category.

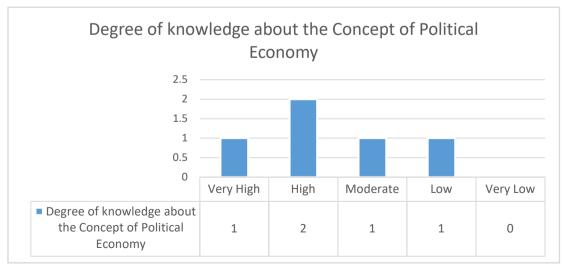


Figure 8: Degree of Knowledge about Political Economy among Public Officials

Figure 8 outlines the distribution of knowledge levels regarding Political Economy among the 6 public officials surveyed. Among these officials, there were varying degrees of knowledge observed. Specifically, 1 official demonstrated a very high degree of knowledge, while 2 officials exhibited a high degree of knowledge. Additionally, 1 official possessed a moderate degree of knowledge; and1official had a low degree of knowledge. Interestingly, none of the officials reported having a very low degree of knowledge about Political Economy.

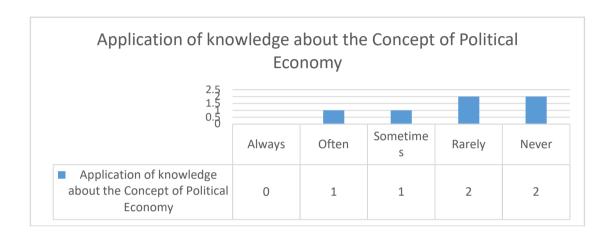


Figure 9: Application of Knowledge about Political Economy among Public Officials

Figure 9 illustrates the frequency of applying knowledge about the concept of Political Economy among the 6 public officials surveyed. The distribution of their application of knowledge is as follows: None of the respondents reported always applying knowledge about the concept of Political Economy. I respondent indicated often applying it, while another mentioned sometimes applying it. Additionally, 2 respondents stated rarely applying knowledge about the concept, and 2 respondents reported never applying it.

Findings

The findings chapter provides a detailed examination of the data collected during the study, focusing on the perceptions, knowledge levels, and application of Political Economy concepts among different participant groups. Drawing on the analysis of survey responses from the general public, students, and public officials, this chapter presents a comprehensive summary of the key findings. The findings are given below;

• According to Figure 1; among the 30 respondents from the general public surveyed, only 7 individuals (23.3%) reported familiarity with the concept of Political Economy. This indicates a relatively low level of awareness among the surveyed population. Interestingly, within the group of respondents familiar with Political Economy, there were 5

males and 2 females, suggesting a balanced distribution across genders. However, the majority of respondents, totaling 23 individuals (76.7%), expressed a lack of familiarity with Political Economy. Within this larger group, there were notably more females (18) than males (4) who reported unfamiliarity with Political Economy. This disparity in familiarity highlights potential differences in exposure to economic concepts among different segments of the general public.

- Figure 2 provides insight into the range of knowledge levels regarding Political Economy among respondents from the general public. Out of the 7 individuals surveyed, the distribution of their knowledge levels varied. Among these respondents, lindividual (14.3%) demonstrated a very high degree of knowledge, indicating a deep understanding of Political Economy concepts. Additionally, 1respondent (14.3%) exhibited a high degree of knowledge, suggesting a strong grasp of the subject matter. Furthermore, 1respondent (14.3%) possessed a moderate degree of knowledge, indicating a reasonable understanding of Political Economy concepts. However, on the lower end of the spectrum, 2 respondents (28.6%) had a low degree of knowledge, indicating a limited understanding of the subject. Similarly, 2 respondents (28.6%) had a very low degree of knowledge, indicating minimal familiarity with Political Economy concepts. This distribution highlights the diversity in knowledge levels among respondents from the general public, ranging from individuals with a profound understanding to those with minimal knowledge of Political Economy.
- Figure 3 illustrates the frequency with which respondents from the general public apply their knowledge about the concept of Political Economy. Among the 7 individuals surveyed, there is a varied distribution in their application of knowledge. None of the respondents reported always applying knowledge about the concept of Political Economy, indicating a lack of consistent application of acquired knowledge in real-world scenarios. However, 1respondent indicated often applying this knowledge, suggesting a relatively frequent utilization of Political Economy concepts in their decisionmaking or daily activities. Similarly, another respondent mentioned sometimes applying knowledge about Political Economy, indicating occasional usage of acquired knowledge in relevant contexts. Additionally, 1respondent stated rarely applying knowledge about Political Economy, implying infrequent application of acquired knowledge in practical situations. Interestingly, the majority of respondents, comprising four individuals, reported never applying knowledge about Political Economy, highlighting a significant portion of the surveyed population with limited or no practical

- application of acquired knowledge in Political Economy. This distribution underscores the need for further exploration into the factors influencing the application of Political Economy knowledge among the general public, as well as potential strategies for promoting its practical utilization in decision-making and civic engagement.
- Figure 4 offers insights into the level of familiarity with the concept of Political Economy among students. Among the 30 students surveyed, a majority of 22 respondents (73.3%) reported familiarity with Political Economy. Notably, a significant portion of these respondents, comprising 17 students, belonged to social science disciplines, suggesting a higher exposure to economic concepts within this academic field. In contrast, 4 respondents from natural science disciplines also reported familiarity with Political Economy, indicating a degree of cross-disciplinary interest in economic issues. Conversely, a minority of 8 students (26.7%) indicated a lack of familiarity with Political Economy. Within this smaller group, the majority, consisting of 7 students, belonged to natural science disciplines, while only 1 student was from a social science discipline. This distribution highlights potential disparities in exposure to economic concepts across academic disciplines and underscores the importance of promoting interdisciplinary understanding of Political Economy among students.
- Figure 5 illustrates the distribution of knowledge levels regarding Political Economy among the 22 student respondents. Among these students, a range of knowledge levels was observed. Notably, 3 students (13.6%) demonstrated a very high degree of knowledge, indicative of a deep understanding of Political Economy concepts. Additionally, five students (22.7%) exhibited a high degree of knowledge, suggesting a strong grasp of the subject matter. Furthermore, the majority of students, comprising eleven individuals (50%), possessed a moderate degree of knowledge, indicating a reasonable understanding of Political Economy concepts. However, there were also students with lower levels of knowledge, as evidenced by 2 students (9.1%) with a low degree of knowledge and 1 student (4.5%) with a very low degree of knowledge. This distribution highlights the diverse range of knowledge levels among student respondents, emphasizing the importance of tailored educational approaches to accommodate varying levels of understanding and promote deeper engagement with Political Economy concepts across academic disciplines.
- In Figure 6, the frequency of applying knowledge about the concept of Political Economy among the 22 student respondents is presented. Among these students, there is a diverse distribution in the

application of their knowledge: 2 respondents (9.1%) reported always applying knowledge about Political Economy, suggesting a consistent integration of economic principles into their decision-making processes or daily activities. Additionally, a significant portion of students, comprising ten respondents (45.5%), indicated often applying knowledge about Political Economy, indicating a frequent utilization of economic concepts in relevant contexts. Moreover, five respondents (22.7%) mentioned sometimes applying knowledge about the concept, implying occasional usage of acquired knowledge in relevant situations. On the other hand, 3 respondents (13.6%) stated rarely applying knowledge about Political Economy, indicating infrequent application of economic principles in practical scenarios. Lastly, 2 respondents (9.1%) reported never applying knowledge about the concept of Political Economy, highlighting a subset of the surveyed population with limited or no practical application of acquired knowledge in this area. This distribution underscores the varying degrees of engagement with Political Economy concepts among student respondents, with implications for promoting practical utilization and enhancing understanding of economic principles within academic and real-world contexts.

- Figure 7 sheds light on the level of familiarity with the concept of Political Economy among public officials. Among the 30 public officials surveyed, a majority of 24 respondents (80%) reported being unfamiliar with Political Economy. Notably, the majority of these unfamiliar respondents, comprising 20 individuals, belonged to highranking positions within their respective organizations, suggesting a widespread lack of exposure to economic concepts among senior leadership. Additionally, four respondents from low-ranking positions indicated unfamiliarity with Political Economy, highlighting a similar trend across different levels of authority within the surveyed population. Conversely, a minority of 6 public officials (20%) indicated familiarity with Political Economy. Interestingly, all six of these respondents belonged to the high-ranking category, suggesting a potential correlation between seniority and familiarity with economic concepts among public officials. This distribution underscores the need for targeted educational initiatives and capacity-building efforts to enhance economic literacy and promote informed decision-making among public officials across all levels of authority.
- In Figure 8, the distribution of knowledge levels regarding Political Economy among the 6 public officials surveyed is outlined. Among these officials, a spectrum of knowledge levels was observed. Notably, 1official (16.7%) demonstrated a very high degree of knowledge, indicative of a profound understanding of Political Economy concepts. Additionally, 2 officials (33.3%) exhibited a high

degree of knowledge, suggesting a strong grasp of the subject matter. Furthermore, 1official (16.7%) possessed a moderate degree of knowledge, indicating a reasonable understanding of Political Economy concepts. Conversely, 1official (16.7%) had a low degree of knowledge, suggesting a limited understanding of the subject. Interestingly, none of the officials reported having a very low degree of knowledge about Political Economy.

In Figure 9, the frequency of applying knowledge about the concept of Political Economy among the 6 public officials surveyed is outlined. The distribution of their application of knowledge is diverse: None of the respondents (0%) reported always applying knowledge about the concept of Political Economy, indicating a consistent lack of utilization of economic principles in their decision-making processes or daily activities. Interestingly, 1respondent (16.7%) indicated often applying knowledge about Political Economy, suggesting a relatively frequent utilization of economic concepts in relevant contexts. Additionally, another respondent mentioned sometimes applying knowledge about the concept, implying occasional usage of acquired knowledge in relevant situations. However, 2 respondents (33.3%) stated rarely applying knowledge about Political Economy, indicating infrequent application of economic principles in practical scenarios. Furthermore, 2 respondents (33.3%) reported never applying knowledge about the concept of Political Economy, highlighting a significant portion of the surveyed population with limited or no practical application of acquired knowledge in this area. This distribution underscores the varied engagement with Political Economy concepts among public officials surveyed, with implications for promoting practical utilization and enhancing understanding of economic principles within their decision-making processes. Ongoing education and training initiatives may be necessary to encourage greater application of Political Economy knowledge in addressing socio-economic challenges effectively.

Conclusion

The analysis and findings presented in this study provide valuable insights into the perceptions, knowledge levels, and application of Political Economy among different demographic groups, including the general public, students, and public officials. Among the general public, a significant portion demonstrated a lack of familiarity with Political Economy, with only a minority reporting familiarity with the concept. Furthermore, while some individuals exhibited varying degrees of knowledge about Political Economy, many lacked practical application of this knowledge in their daily lives. In contrast, students, particularly those

from social science disciplines, displayed a higher level of familiarity with Political Economy. However, there were still variations in knowledge levels and application frequency among student respondents, suggesting the need for tailored educational approaches to promote deeper engagement with economic concepts across academic disciplines. Among public officials, a majority reported unfamiliarity with Political Economy, particularly among high-ranking officials. While some officials demonstrated a moderate to high degree of knowledge about Political Economy, there were notable gaps in practical application, with many indicating infrequent or nonexistent utilization of economic principles in decision-making processes. Overall, these findings underscore the importance of enhancing economic literacy and promoting practical utilization of Political Economy knowledge across different segments of society. Addressing these gaps through targeted educational initiatives, capacity-building programs, and policy interventions is essential for fostering informed decision-making, addressing socioeconomic challenges, and promoting sustainable development. equipping individuals with the necessary knowledge and skills, they can be empowered to navigate complex economic landscapes and contribute meaningfully to shaping a prosperous future for Bangladesh.

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