

**Reducing Informality in the Economy for the Sustainable Development:
Causal Inferences from Household Level Observational Data
(Summary)**

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Despite the impressive economic growth in developing economies, large share of informality in different sectors of the economy are hindering and threatening the progress of sustainable economic development. Informality exists in all countries regardless of the level of socio-economic development, although it is more prevalent in developing countries which is about 90%. According to Schneider et al. (2010)'s estimates, the weighted average size of the informal economy accounts for 37.6% of official GDP in Sub-Saharan Africa, 36.4% in Europe and Central Asia, 34.7% in Latin America and the Caribbean, and 27.3% in the MENA region. The actual extent of informality in any economy is always much higher than reported estimated value as most of the informal information are not recorded officially and regulated by any body of the state.

Policymakers, academics, and workers' and employers' organizations increasingly recognize that the high incidence of informality in all its aspects is sometimes troublesome and unmanageable and is a major challenge for achieving sustainable development goals. Unlike the formal economy, activities of the informal economy are not included in a country's national account. Furthermore, informality impacts the economy by lowering tax revenue, has a harmful effect on workers' rights, including fundamental principles and rights at work, social protection in the face of economic shocks, decent working conditions and the rule of law (Perry, 2007; Bacchetta et al., 2009; La Porta and Shleifer, 2014).

Earlier studies show that most people enter the informal economy not by choice, but because of a lack of available opportunities, and in the absence of other means of livelihood like credit constraints (Freije and Monteferrante, 2002; Oviedo et al., 2009). Stringent and costly regulations in the formal economy (Freije and Monteferrante, 2002; Loayza et al., 2009), are among the main factors behind informality. During the last decades, a growing number of countries worldwide have developed strategies (social security programs, etc.) and policies (financial sector development, easing business environment, agricultural modernization, etc.) to facilitate transition to formality. The main research question of this dissertation is if the reasons behind the informality are lifted out, does informality reduces in the economy? In this dissertation, informality is analyzed from the perspective of financial system, labor market, and household. Focusing on the high prevalence of the informality in Bangladesh, it has been used a case country for the empirical research in this dissertation.

The empirical researchers, now-a-days mostly desire to establish credible causal claims, which can only be guaranteed with exogenous variation of treatment or intervention obtained from randomized controlled trials (RCTs). RCTs are considered as the gold standard in causal inference as the design enables to minimize or even avoid bias but RCTs are not always feasible (due to high costs and time constraints, etc.), not always considered ethical. In such situation, causal inferences can be drawn from observational or quasi-experimental studies, if certain conditions are met.

In this dissertation, I try to establish causality from micro level observational/ quasi-experimental data obtained from different surveys in Bangladesh done by different government and non-government agencies. Three perennial threats of biases can arise in estimating causality from observational data: (i) confounding bias, (ii) selection bias, and (iii) measurement bias, which can result in an underestimate or overestimate of the effect of interest. To estimate the credible causal impact from observational data, the standard methods like Instrumental Variables approach (IV), Fuzzy Regression Discontinuity Designs (Fuzzy RDD), and Propensity Score weighted Differences-in-Difference (DID) has been used in this dissertation.

The three analytical chapters presented in this dissertation (namely, Chapter 2, 3, and 4) cover a diverse set of informality in the economy and contribute to the applied microeconometrics literature, more specifically, to a diverse set of current topics in informal economy by estimating causal inferences from micro level observational studies. Each chapter makes a substantive contribution in the literature as well as policy recommendations to reduce the informality in specific sectors for sustainable economic development. In this overview, I first highlight the motivation and common grounds of the dissertation, and then summarize the chapters' individual contributions.

The first empirical research presented in chapter 2 uses the informality in the financial transaction. In this research, I examine how the banking network in the home country affect the choice of remittances sending channels of the migrants. The data used in the analysis is taken from different sources. Main data on the choice of remittances channels is obtained from the Survey on Investment from Remittances 2016 collected by Bangladesh Bureau of Statistics (BBS), the apex national statistical bureau of Bangladesh; sub-district (upazila) level bank branches information is collected from Bangladesh bank (the Central Bank of Bangladesh). This is the first attempt in the literature

that aims to examine the causal effect of banking networks on the choice of remittance transfer channel using the instrumental variables approach. This methodology provides the opportunity to control the unobserved confounder. The results are obtained using two-stage least square (2SLS) estimation method. The empirical evidence obtained allow us to conclude that availability of bank branches can significantly reduce the choice of informal channel for transferring remittances. The results are consistent with the main findings for different specifications of the model, and robust to several checks. The findings can contribute directly and indirectly to several SDGs in addition to 10.c that commits, by 2030, to reduce to less than 3 per cent the transaction costs of migrant remittances and eliminate remittance corridors with costs higher than 5 per cent.

Chapter 3, second empirical research, uses the informality from the labor market perspective. This research analyzes the impact of unconditional in-kind transfer on child labor participation. Even though, child labor is prohibited by laws, globally about 160 million children ages 5- 17 years are subjected to child labor (UNICEF 2020). Earlier literature shows that household poverty is the single most reasons that enforce household to send children to work. Government in many developing countries devote a significant share of public funds to economically vulnerable households, which can remove some of the reasons that children work. Using this set-up in mind, I examine the effect of government unconditional in-kind transfer on the child labor working hours in household chores and economic activities. Using Fuzzy Regression discontinuity design (fuzzy RDD) on the household level micro data, the results show that social transfer that are transferred aiming to reduce household poverty can significantly reduce child working hours at households' chores, but the program does not show any impact of the working hours in economic activities. The results can contribute in the SDG Target 8.7 that aims to eliminate the worst forms of child labor, including the recruitment and use of child labor, as well as to end all forms of child labor by 2025.

In third empirical research, Chapter 4, I hypothesized that diversifying agriculture production with adoption of modern technologies may enhance the productivity and hence improve the food consumption of the household, as well as health and nutrition of the children and women in the household. Food (production, and consumption) constitutes a key component of a number of fundamental welfare dimensions, such as food security, nutrition, health, and poverty, and has become major policy concern in the today's SDGs era of leaving no one behind. Feed the Future,

led by the U.S. Agency for International Development (USAID), is one of such agricultural diversification programs that seeks to reduce poverty and under nutrition in 19 developing countries through its focus on accelerating growth of the agriculture sector, addressing root causes of under nutrition, and reducing gender inequality. The program is implemented in the districts of south and southwest region of Bangladesh with the similar vision. This study aims to examine the impact of Feed the Future (FTF) Program on the food consumption, health and nutrition using the household level panel dataset for the period of 2011-12, 2015, 2018-19. The dataset has been collected by International Food Policy Research Institute (IFPRI), and USAID in Bangladesh, representing the nationally representative rural households in Bangladesh. Using the propensity score weighted Difference-in-Differences (DID) strategy, the results show that the program effectively reduce the food insecurity (increase food consumption) through increasing production and household income. The program also increases the antenatal care visit of the pregnant women and lowers child body mass index. The models are estimated with different specifications to check the robustness of the main results. We found the consistent results with the main findings. All the results are statistically significant at 1% level. The findings provide some policy implications. To address the food insecurity, and malnutrition, agricultural diversification with adopting modern technologies, and providing training to the farmers may helpful. The findings also beneficial for the policy formulation to achieve the goal of ensuring access to safe, nutritious, and sufficient food for all people all year round (SDG Target 2.1), or to eradicating all forms of malnutrition (SDG Target 2.2) by 2030.

To sum up, chapter 2 contribute to the economics of financial flows, and have important implications for both home and host country economies; chapter 3 contributes to the social policy, labor market and health economics literature, and how to better assess policy interventions targeting the vulnerable segment of citizens to improve their livelihood; chapter 4 contributes to the food insecurity, agricultural development policy, health, and nutrition. The chapter of this thesis emerges the importance of both the study of informality in the economy and recommend the way out from such informalities to achieve some of the sustainable development goals by the 2030.