Bangladesh Economic Dialogue on Inclusive Growth

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The role of the informal sector in inclusive growth
a state of knowledge study from policy perspectives

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Contents

Tables

Figures

Abbreviations

BBS	Bangladesh Bureau of Statistics
BSM	Business Sophistication Model
GDP	gross domestic product
ILO	International Labour Organization
LFS	Labour Force Survey
PPP$	Purchasing Power Parity Dollar
RMG	ready-made garment
SDG	Sustainable Development Goal
SME	small and medium-sized enterprises
Tk	Bangladesh Taka
TIN	Tax Identification Number
VAT	Value Added Tax
VC	value chain
VNR	voluntary national reporting

1. Introduction

1.1 Context and relevance of the study

Issues related to informality in the labour markets of developing countries have been attracting renewed attention recently for several reasons: chronic persistence, heterogeneity, possible adverse implications for economic growth, difficulties involved in ensuring social and workplace compliance at the enterprise level and labour rights, as well as low efficiency, low productivity, and resultant low income. Informality is multidimensional. A notable characteristic of informality in developing countries is that informal labour is not only a distinctive feature of the informal sector, but also a common feature of the formal sector where it coexists with formal employment. This formal–informal employment nexus demands attention in the design of labour market policies in many country contexts. Addressing the multidimensionality of informality entails dealing with a diverse range of challenges across the entire policy spectrum – targeted programmes, skills upgradation, compliance assurance, resource allocation, fiscal/financial initiatives and incentives, institutional interventions and regulatory reforms.

Informality has garnered increasing attention from policy-makers and development practitioners, particularly in the context of ensuring inclusiveness in the economic growth process. Given the persistent and often dominant presence of informality in the labour markets of developing countries, it is increasingly being recognised that in order for growth to be inclusive, issues of informality need to be appropriately factored into policy design. In the specific case of Bangladesh, a country that graduated to lower-middle-income country status in 2015, the inclusiveness of growth has started to gain prominence in the discourse on development due to the predominance of informality in the labour market, rising incomes and living standards, ongoing attempts to address income and wealth inequalities,[1] and aspirations in view of the Sustainable Development Goals (SDGs), which promote inclusive development.

Successive Labour Force Surveys (LFSs) and Household Income and Expenditure Surveys carried out in Bangladesh, as well as industrial, sectoral and micro-level studies, indicate that in spite of some positive structural changes in the economy, informality continues to predominate in terms of employment and sectoral features. The persistence of the informal nature of labour force participation is revealed by LFS data: in 1999–2000, about 75.2% of the total employed population in Bangladesh were reported to be in the informal sector (BBS, 2001); the 2015–16 LFS reported the share to be 86.2% (BBS, 2017). Tracing the dynamics of informality in the labour

[1] Household Income and Expenditure Surveys show that the income Gini coefficient increased from 0.45 to 0.48 between 2010 and 2016, while the income disparity between first and 10th deciles of the population rose significantly from 31 to 121 times (CPD, 2018).

market is rather problematic because of definitional changes,[2] though even between 2010 and 2015–16 (using comparable definitions) the shares indicate predominance. Thus, more than four-fifths of the total employed population in Bangladesh are engaged in informal employment. No doubt, informal labour merits a deeper and insightful understanding as a critically important aspect of dealing with the jobs agenda in Bangladesh. Issues related to informality ought to attract special attention also because of the falling employment elasticity[3] of gross domestic product (GDP) growth observed recently, specifically the decline from 0.55 for the 2005–10 period (ADB, 2016) to 0.45 for the 2016–20 period.[4]

This study takes a close look at the various dimensions of informality in Bangladesh from labour market and sectoral-enterprise perspectives. The specific issues examined include: the sectoral background of informal employment; reasons why informality is so persistent (push and pull factors); the formal and informal employment interface (including informal labour as a feature of the formal sector coexisting with formal employment); ownership patterns in the informal sector; earnings from formal and informal labour; the nature of the informal–formal continuum in value chains; sectoral distribution; gender divide and educational background; productivity, and issues of graduation from informal to formal employment. While some of these issues have been extensively studied in the context of south American developing countries (e.g. Perry et al., 2007), key issues demand more detailed examination and analysis in Bangladesh's context.

Addressing issues related to informality is important for inclusive economic growth, which Bangladesh aspires to pursue in light of its Seventh Five Year Plan for the 2016–20 period and other key policy documents. Like many developing countries, Bangladesh is currently experiencing the so-called Lewis turning point, where labour moves from the agricultural sector to the rural non-farm and urban sectors. Indeed, a large part is being absorbed by the urban informal service sector, mostly in low-paying jobs. It is pertinent to note here that studies show that a 1% rise in agricultural income has the capacity to reduce poverty by 0.39% compared to 0.11% for non-agricultural income (Hossain et al., 2017). If these two trends are considered in tandem, the need for an in-depth study of the dynamics of Bangladesh's labour market, particularly focusing on informal employment and inclusiveness of the development process, is clear.

[2] These definitional changes are detailed in Table 2 in the next section.
[3] The employment elasticity is estimated by considering the elasticities of both formal and informal employment.
[4] The estimates of employment elasticities for 2016–20 are based on projections made in the Seventh Five Year Plan (see Ministry of Planning, 2015).

To gain a better understanding of Bangladesh's informal sector, there must first be a better understanding of the nature and dynamics of informality guided by specific research questions. What is the magnitude of informality and what are the trends in informality in the country? What is the nature of the heterogeneity of issues related to informality? What are the key characteristics and background of the informal sector? How do productivity and income vary between informal and formal employment? Are the policies pursued adequate to safeguard the interests of the informally employed population? Is there complementarity between the formal and informal sectors within value chains? How does the informal–formal continuum operate in practice? Which policies need to be pursued to bring informality within the ambit of inclusive growth in Bangladesh?

A major challenge in providing adequate answers to these questions is the scarcity of relevant data. In Bangladesh, LFSs are the most useful sources of data on informal (and formal) employment. LFS datasets provide some useful information on the dynamics of the labour market, informal employment and a host of other dimensions, as will be seen in the sections that follow. The authors undertake a detailed analysis of Bangladesh's six most recent LFSs for the years 1999–2000, 2002–03, 2005–06, 2010, 2013 and 2015–16 to answer some of the aforementioned questions. It also reviews other relevant datasets and available literature. LFSs have detailed information on various dimensions of employment in both the formal and informal sectors, though do not provide information to answer many of the questions that would lead to a better understanding the nature and dynamics of informality. LFSs are not designed to generate employment data along production and value chains. Regular enterprise-level surveys that cover formal and informal enterprises need to be carried out to generate information on issues such as productivity, profitability and impact of policies.[5]

The study generates insights on the nature of informal labour and the formal–informal employment nexus in the value chains of two important sub-sectors of Bangladesh's manufacturing sector, namely the apparel sector and the export-oriented leather and footwear sector.[6] Both are important to the economy in terms of their contributions to the manufacturing GDP, exports and employment. The ready-made garment (RMG) sector is Bangladesh's predominant export sector, which accounted for 80.8% of total exports in FY2017; the leather and footwear sector contributed another 3.6% of exports. Their contributions to the

[5] The latest enterprise-level survey was carried out in 2013.

[6] Indeed, these two sectors are the subjects of research carried out earlier as part of the Economic Development on Inclusive Growth programme of the United Kingdom's Department for International Development. The analysis here thus complements these studies. (see Raihan et al., (2017) Bangladesh Sectoral Growth Diagnostic (2017), April (www.asiafoundation.org/wp-content/uploads/2017/05/EDIG-Research-Paper-No.-1.pdf))

manufacturing GDP were 34.8% and 4.4%, respectively. These two sectors accounted for 37.6% of total manufacturing employment in the country (CPD, 2018). This study sheds light on a number of aspects of informal employment along production value chains. Findings will hopefully serve as a useful reference for the proposed second phase of the present study, which is envisaged as a field-survey-based empirical study that sheds further light on the issues.

1.2 Objectives, scope and limitations

The objectives of this study are to: (1) examine the dynamics of the informal sector in Bangladesh's labour market by tracing trends across LFSs (keeping definitional changes in mind) and conducting an in-depth analysis of data from the 2015–16 LFS; (2) generate a better understanding of the informality–formality continuum along value chains in selected sectors of the country's economy; (3) establish linkages between informality, wages and wage premiums; (4) identify determinants of informal employment; and (5) provide policy recommendations to address informality in Bangladesh's context.

At the outset, it is known that the study is unable to capture the distinctive nature of formal and informal correlates within particular segments of a value chain given the insufficient number of samples covering the relevant segments. Additionally, given the lack of data on formal and informal employment in enterprise-level surveys (the surveys distinguish only between formal and informal enterprises), analysis of informal labour and drivers of informality at the enterprise/firm level cannot be carried out.

LFS data provide a picture of the current status of the population in formal and informal employment in Bangladesh. However, the data do not provide information about the past statuses of individuals, such as where a particular person was previously employed and why s/he changed jobs. This lack of information constrains analysis of the causes of job movements from the informal sector to the formal sector as well as the switching of jobs within the informal sector. Child labour, particularly children working in hazardous jobs, is also a common feature of informal employment in Bangladesh. Further disaggregated data on informality could provide important insights in this regard.

1.3 Methodology

This paper is based on a review of secondary literature on formal and informal employment in developing country contexts, analysis of Bangladesh's LFS data at various points in time, and results of empirical analysis that employed binary choice models, mean decomposition and quantile regression methods. Data from LFSs conducted in 1999–2000, 2002–03, 2005–06, 2010, 2013 and 2015–16 are used extensively. Empirical analyses using different methods are carried

out to gather insights about entry into informal employment (using discrete choice models), the conditional wage gap originating from the formal–informal divide (using the Oaxaca–Blinder decomposition), the contribution of informality to the gender wage gap (using quantile regression) and productivity–profitability dividends along an informal–formal continuum (using principal component analysis).

1.4 Data sources

The paper draws primarily on available academic literature and (mostly official) statistical sources. It also examines relevant sub-sectoral studies and policy documents. Disaggregated data are processed to: (1) establish trends in the size and composition of Bangladesh's formal and informal sectors; (2) identify formal–informal employment trends in the agricultural, industrial and service sectors of the country's economy; (3) examine the salient features of formal and informal employment; (4) explore the nature of linkages between formal and informal employment in the apparel sector and the leather and footwear sector; and (5) examine formal and informal employment in terms of productivity, profitability and wages in these two sectors. To answer the stated research questions, analyses of disaggregated data were undertaken using various surveys, including the six LFSs (Bangladesh Bureau of Statistics [BBS], various years),[7] the 2010 Informal Sector Survey by the World Bank and BBS (World Bank, 2010) as well as the World Bank's 2013 Enterprise Survey (World Bank, 2013). A focus group discussion was held to generate additional information for the study.

Comparable data are readily available for formal and informal employment in the datasets of LFS 2013 and LFS 2015–16 since they use the same definitions of formal and informal.[8] For the purpose of this study, the same definitions were applied to the dataset of LFS 2010 at the unit level to generate comparable data for formal and informal employment in 2010. These definitions could not be applied to the datasets for LFSs 1999–2000, 2002–03 and 2005–06 because these surveys did not ask for information on all of the variables that were subsequently included in the definition of formal employment in LFS 2013.

For the four quarterly datasets relating to LFS 2015–16, information was collected for each of the four quarters covering 30,816 households with 126,000 individuals. The samples were divided into 1,248 primary sampling units and 21 strata distributed across all of the 64 districts. The survey covered both urban and rural areas and dwelling households. The ages of respondents in

[7] The data for 2015–16 are based on four quarterly datasets, specifically those for the last two quarters of 2015 and first two quarters of 2016. To enable analysis, quarterly data were annualised by weights provided by the BBS to arrive at the data for 2015–16.

[8] LFS 2013 introduced revised definitions for formal and informal employment, which were then used in LFS 2015–16.

the working-age population were taken to be 15 years and above. The collated data were then subjected to two-way validation by internal and external experts. A sample was selected in two stages, with primary sampling units in the first stage and a cluster of 24 households per primary sampling unit in the second stage. Both stages involved random selections. The survey implemented a rotational panel strategy according to which some of the households in each cluster were replaced by new households for purposes of successive quarterly surveys.

1.5 Study outline

This introduction is followed by section 2, which presents a review of relevant literature concerning various dimensions of informal labour and informal sectors in developing countries. It focuses on the dynamics, heterogeneity and distinctive features of the informal sector in different countries to draw necessary insights for the present study. Section 3 analyses data from various LFSs and other relevant data sources with a view to investigate the multidimensionality of informality in Bangladesh's labour market. It takes an in-depth look at the nature of informality in the country's two key manufacturing sectors to draw insights from sectoral perspectives. By deploying quantitative methods, it explores factors that induce informality and the different natures of informality and formality in Bangladesh's context. Section 4 presents the results of an econometric analysis concerning microeconomic determinants of informal employment. It also reviews relevant literature on enterprise-level determinants of informal employment. Section 5 undertakes a review of relevant policies in Bangladesh in light of the analysis presented in sections 3 and 4. With a view to promote a more inclusive development process in the country, it then offers policy recommendations to address the challenges faced by the population in informal employment and the informal sector more broadly.

2. Review of literature

Bangladesh is currently implementing its Seventh Five Year Plan, which is geared to ensure that the development process in the country is inclusive. The 2030 Agenda for Sustainable Development, which outlines the SDGs that Bangladesh is implementing, envisions eliminating poverty and hunger and creating decent jobs, among other things. Given the size of the informal sector and share of informal employment in Bangladesh's labour market, addressing challenges that relate to the persistence of informal employment remains a key priority for the country's policy-makers. Bangladesh has introduced a number of laws and policies that deal with labour issues and workers' rights (e.g. Amended Labour Law 2013) and aim to improve skills and employability (National Skills Development Policy 2011), though key policy documents do not address the particular challenges that informality poses in terms of employment and enterprises.

This literature review draws insights from cross-country studies to better understand the underlying dynamics of informality and how best to deal with the specific challenges that informal sectors face. Relevant studies conducted in Bangladesh are also reviewed to draw context-specific insights and glean necessary information.

Various studies point out the persistence of informal labour in developing countries, which is characterised as unregulated, unrecognised, unprotected and unrecorded (Becker, 2004). Lewis (1954) proposed a two-sector model that could be used to trace the origins of informalities in the labour markets of economies that were experiencing what came to be known as the Lewis turning point. Lewis argued that the surplus labour moving out of the agricultural sector would be absorbed by the industrial sector and other modern sectors. However, as subsequently emerged, the larger segment of this surplus labour actually shifted from the rural informal sector to the urban informal sector or informal sub-sectors engaged with the value chains of urban industrial and modern sectors. In view of the importance of informal sectors for the economies of developing countries, a number of studies have explored the features of informality from the perspectives of heterogeneity, determinants, motivations, push and pull factors, productivity, earnings and welfare implications, and labour rights, among others (e.g. World Bank, 2007; Guha-Khasnobis et al., 2006)

One of the major concerns in the literature on informality is how to define the informal sector. As Guha-Khasnobis et al. (2006) note, despite its pervasiveness globally, there is no consensus on how to define and measure an informal sector in an economy. Notably, definitions at the country level are often bound by specific norms and practices. Fields (2011) explains that since each country may have a 'working definition' of its own, estimates of informality may measure different forms of economic activity. Furthermore, within a country, an accepted 'norm' for measuring informality, which is used instead of a defined rule, may have evolved, which creates additional difficulty in the measurement of informality over time. Finally, a point that is perhaps less emphasised in the literature is the differentiation between formal and informal firms as well as formal and informal workers. It is common in many developing countries for firms to be formal, with (some) workers within them remaining informal.

The literature is clear that the nature of 'informality' is heterogeneous (Cunningham and Maloney, 2001; Hussmanns, 2004; Henley et al., 2006). Maloney (2006) identifies three critical margins along which formal and informal characteristics can be found: (1) intra-firm margins where firms are partly formal and partly informal; (2) inter-sectoral margins between informal and formal firms; and (3) inter-sectoral margins of formal and informal workers operating throughout the

labour market. From policy perspectives, these distinctive features of informality could be helpful when designing appropriate interventions.

There are three schools of thought on the relationship between the formal and informal sectors, which are also known as the formal and informal economies (see Chen et al., 2002). These are: the dualist view, in which the informal economy is a separate marginal economy – not directly linked to the formal economy – that provides income or a safety net for the poor (ILO, 1972); the legalist view, according to which informal work arrangements are a rational response by micro-entrepreneurs to over-regulation by government bureaucracies (de Soto, 2000); and the structuralist view, which argues that the informal economy is subordinated to the formal economy.

According to a cross-country survey of informality in several South American countries by the World Bank (2007), informality in the labour market spans all three possible margins: firms of all sizes that contract some part of their workforce without mandated labour benefits; owners of small firms contemplating registration of their workers; and informal and formal workers who weigh the relative advantages and disadvantages of jobs in the formal and informal sectors. Thus, informality affects both sectors, firms and the labour force, while decisions of both owners and employees hinge on relative costs and benefits linked to employment status. These findings allude to the complexity of the issues involved and demonstrate that the 'bad' connotation associated with informality is too simplistic.

The International Labour Organization (ILO) defines informality based on the traditional 'productivity view' with a focus on types of production units as well as a newer focus on informal employment defined according to the 'legalistic' or 'social production' view of employment status. Hussmanns (2004) illustrates the conceptual framework of informal employment as followed by the ILO, which is presented in Table 1.

Table 1 ILO conceptual framework of informal employment

Production unit by type	Employment status by job type								
	Own-account workers		Employers		Contributing family workers	Employees		Members of producers' cooperatives	
	Informal	Formal	Informal	Formal	Informal	Informal	Formal	Informal	Formal
Formal sector enterprises					1	2			
Informal sector enterprises[a]	3		4		5	6	7	8	
Households[b]	9					10			

Source: Adapted from Hussmanns (2004).
Notes: Cells shaded in dark gray refer to jobs that, by definition, do not exist in the type of production unit in question. Cells shaded in light gray refer to formal jobs. Unshaded cells represent the various types of informal jobs. Informal

employment: cells 1–6 and 8–10. Employment in the informal sector: cells 3–8. Informal employment outside the informal sector: cells 1, 2, 9 and 10.
a. As defined by the Fifteenth International Conference of Labour Statisticians 1993 (excluding households employing paid domestic workers).
b. Households producing goods exclusively for their own final use and households employing paid domestic workers.

The role of subcontracting as an inducement to informality is also noted in the literature. For example, in the apparel sector, one of the main causes of informal employment is subcontracting, a practice that has existed for a long time. A subcontracting relationship exists when a firm (the principal) places an order with another firm (a subcontractor) for the manufacture of parts, components, sub-assemblies or assemblies to be incorporated into a product, which the principal will sell (UNIDO, 1974). This relationship is in line with the structuralist view mentioned above. In Bangladesh, a survey in 2003 found that only 32% of clothing producers received their orders directly from a principal; with the rest receiving orders as subcontractors (Hale, 2004). Rashid (2006) estimates that in the RMG sector in Bangladesh, informal employment from subcontracting was around 75% of the level of formal employment.[9] Unni et al. (1999), using three years of survey data, estimate that in the city of Ahmedabad in India, 56% of value added to large garments in factories came from subcontracting. Such subcontracting is motivated mainly by a desire to reduce costs and raise profitability (Gibson, 2014).

Policies are important in reducing informality. A good example of the effect that policies can have is the remarkable reduction in informal employment in Uruguay over the 2004–12 period, when the share of informal employment fell from 40.7% to 25.6%. Uruguay aggressively pursued a set of economic and social protection policies that included enforcing the right to collective bargaining, implementing tax reforms, promoting productive investment in informal sectors and aligning social security programmes (ILO, 2014). Interestingly, while measures to enforce regulatory and workers' rights were found to contribute to reducing informal employment, evidence also suggests that stricter enforcement of regulations can push entrepreneurs into self-employment (Kucera and Roncolato, 2004).

Reasons for informality

The literature cites various reasons for endemic informality in the labour markets of developing countries (World Bank, 2007). Reasons originate on both the workers' and entrepreneurs' ends. Since the demands for skills and education are often less onerous in the informal sector, many workers who have fewer skills and less education search for jobs in the informal sector. Further, since informal enterprises tend to dominate the economies of developing countries, people

[9] This scenario has undergone significant changes since the Rana Plaza tragedy in 2013. At present, the share of subcontracting in the apparel sector has come down sharply.

entering the labour market often find jobs more easily in the informal sector. At the same time, the overwhelming majority of enterprises in developing countries are small-scale manufacturing and business units. According to the World Bank (2012), there are 365 million to 445 million micro, small and medium-sized enterprises (MSMEs) in emerging markets and of these about 8–10% are formal small and medium-sized enterprises and 20% are formal micro enterprises; the remaining 70–75% are informal enterprises. In China, for example, micro, small and medium-sized enterprises account for 80% of total employment. Notably, formal micro, small and medium-sized enterprises employ more than one-third of the global labour force, but the share drops significantly in low-income countries (Kushnir et al., 2010). In Bangladesh, 99% of industrial units are either micro, small or medium-sized enterprises, employ 80% of the labour force and contribute 30% of GDP; the respective figures are 90%, 40% and 17% for India and 98%, 98% and 40% for Pakistan (Ahmed, 2017). Many of these micro, small and medium-sized enterprises are unregistered, with workers not having the rights that are enjoyed by workers of formal enterprises. Enterprises often remain informal to avoid taxes and statutory obligations to pay pensions or gratuities to workers.

Enterprises in Bangladesh must obtain trade licenses or become registered to operate formally. Small-scale firms are required by law to pay taxes as per stipulated turnover thresholds. Large-scale enterprises that are listed on the stock exchange, are registered with the Office of the Registrar of Joint Stock Companies and Firms or have a relatively large turnover must pay taxes as stipulated by law. Yet, informality is present in both cases. Informality is most pervasive across micro, small and medium-sized enterprises, while among large-scale enterprises, salaried employees with white-collar jobs are formal workers (those who are entitled with pensions or contributions to retirement funds) and most of the blue-collar workers are not.

There are several microeconomic determinants of informal employment. Employing principal component analysis and analysing cross-country data from 22 countries including Bangladesh, Khatiwada et al. (2013) find that gender has an impact on who enters informal employment — women are generally more likely than men to be in informal employment, both as salaried and self-employed workers. Goldstein (2000) argues that the flexibility offered by informal employment sometimes induces women to work in the informal sector. Perry et al. (2007) show that single women are more likely to be in formal employment than married women and men. The presence of young children is also positively correlated to the likelihood of being employed in the informal sector. Relatively younger workers with little or no educational attainment lack the necessary skills, knowledge and financial capital to start their careers in the formal economy. Who enters informal employment is also dictated by rural-to-urban migration, when less-skilled

workers migrating to urban areas do not find jobs in the urban formal sector (Khatiwada at al., 2013; Becker, 2004). The literature identifies other reasons for the persistence and growth of informal employment, including low-cost goods and services, increasing numbers of women participating in the labour market (Becker, 2004), barriers to entry into the formal sector (de Soto, 2000) and the predominance of capital over labour (Rodrik, 1997).

Importantly, Schoar (2010) finds that many entrepreneurs in developing countries resort to undertaking some type of informal employment because of a lack of wage-employment opportunities. In other words, they are pushed into the informal sector because they are not pulled by job opportunities into the formal sector. Using official Annual Survey of Industries data for the 1998–2010 period, Ghani et al. (2015) show that the push effect is true in India at micro-level manufacturing firms and that this relationship also holds for rural areas. The informal sector has low barriers to entry for individuals seeking some form of urban livelihood.

Informality often results in increased insecurity and reduced workers' rights. A survey conducted by Women Working Worldwide found that in Pakistan and Bangladesh, 95% of workers interviewed had no appointment letters and were not in a position to establish their rights under the labour laws of their country (Hale, 2004). The ILO (2002) suggests that informality originates from a lack of rights guaranteed under the Freedom of Association and Protection of the Right to Organize Convention of 1948 and argues for ending child labour, eliminating discrimination, improving labour legislation, strengthening labour administration, enforcing labour rights, and protecting workers in the informal sector through improving commercial and business regulations to enhance their rights.

Using data from the 2005 and 2010 LFSs, Raihan et al. (2016) estimate the intensity of informal employment in Bangladesh's urban areas and find that, after controlling for several economic and demographic factors such as age, education, dependency ratio, gender and wage structure, self-employed workers are more likely to be associated with urban informal employment. Studying the relationship between macroeconomic stability and employment generation in a cross-country context, Muqtada (1996) finds rapid proliferation of informal sector jobs in developing countries. Mujeri (2004) analyses Bangladesh's labour market from a decent work perspective. Using a computable general equilibrium model, Raihan (2010) shows that growth of the formal sector leads to growth of the informal sector, assuming that factors can move more freely from the formal sector to the informal sector than the reverse. Rahman and Islam (2013), Kapsos (2008), Rahman (2004) and Al-Samarrai (2007) discuss the gender wage gap in Bangladesh's labour market in some detail.

The Seventh Five Year Plan puts significant emphasis on inclusive growth and includes policies to promote it. However, addressing issues related to informality as part of a strategy towards inclusive growth requires a more sound understanding of the various dimensions of informality in Bangladesh's context. Bangladesh's SDGs needs assessment and financing strategy mentions that costs related to targets 8.3 - Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services , 8.8 - Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment, and 8b - By 2020, develop and operationalize a global strategy for youth employment and implement the Global Jobs Pact of the International Labour Organization, which are directly linked to informal employment, cannot be estimated due to data limitations (Ministry of Planning, 2017). Thus, the generation of relevant data to track SDG implementation efforts linked to informality will remain an urgent task.

A review of literature relevant to Bangladesh reveals that informality is an understudied area. A number of studies have looked at the structure, changes and shifts, wage gaps and occupational diversity in the country's labour market. However, the specific issues of the formal–informal divide and continuum, reasons for informality, nature of informality – both in terms of labour force participation and sectoral dimensions – and connection between addressing informality and inclusive growth have not been taken up as particular issues of focus. Definitional ambiguity, in addition to the lack of continuity in definitions, has constrained research on relevant issues. As mentioned, the definitions of formal and informal employment have undergone significant changes in successive LFSs which made comparison between pre and post 2010 LFS data difficult. Such differences make it difficult to track and trace the intertemporal dynamics of informal–formal labour force participation.

This literature review draws a number of insights that are relevant for the present paper: (1) examination of the various dimensions of informality, both from the labour market and sectoral-enterprise perspectives, is important; (2) characteristics of formal–informal employment, including in many formal sectors, run in a continuum, exist side by side and constitute an important feature of labour force participation in production and value chains; (3) although the share of informal employment, in both its sectoral and labour force dimensions, tends to decline with economic growth, it is likely to remain persistent in a developing country context for a long time; (4) policies should be geared to eliminating some of the negative features of informality both in the labour market and at the enterprise level.

3. Informal labour in Bangladesh: definitions, dynamics and salient features

3.1 Defining informality

In Bangladesh, the definition of informality has undergone significant changes in successive LFSs. As Table 2 shows, LFS 2000 defined the informally employed as all individuals who had jobs in the informal sector of the economy (distinct from the private formal and government sectors). This definition was followed in both LFS 2002–03 and LFS 2005–06. Respondents were asked in which sector they work (the private informal, private formal or government sector). Informality and formality were defined on the basis of self-categorisation. This definition came under criticism because many individuals working in the formal sector were in informal employment. In 2010, informal employment was redefined to take into account the nature of employment (self-employment and household employment, unpaid and irregularly paid employment, and employment in firms that are unregistered). This definition was also found to be unsatisfactory, particularly when compared to prevailing global practices. Subsequently, LFS 2013 updated the definition by adding 'no pension or no contribution to retirement fund' to the 2010 definition of informal employment. Falling under any of the criteria mentioned in the table (own-account and self-employed, contributing family labour, workers in private households, all employees in private unincorporated enterprises, no pension, no contribution to retirement funds) would classify a participant in the labour market as informally employed. The definition in LFS 2013 was followed for LFS 2015–16.

Notably, the Bangladesh Labour Law 2013 (Amended) enhanced the entitlements of workers; it is to be implemented by industrial enterprises that are companies (registered under Companies Law 1994) and satisfy any of the following conditions: (1) at least 100 workers in one shift; (2) paid up capital of at least one crore taka; or (3) value of fixed assets worth at least two crore taka.[10] These companies are stipulated to set up two funds: a Workers' Participation Fund and Workers' Welfare Fund. Enterprises are to contribute 5% of net profit to these funds (80% and 10% of which are to go to the two funds, respectively), with the rest (10%) to be contributed to the Workers' Welfare Foundation.[11] The law does not require the enterprises to have pension schemes or set up contributory retirement funds. As mentioned, both are included in the revised definition of informality in LFS 2013. Thus, in the absence of either, workers in registered/formal enterprises are considered to be in informal employment.

[10] Tk80 is approximately equivalent to $1. 10 million = 1 crore.
[11] The Workers' Welfare Foundation was established under a separate Workers' Welfare Foundation Act, 2006.

Table 2 Informality in Bangladesh: shifting definitions

Year	Changes in definition over time
2015–16	Same as 2013
2013 (revised definition)	All individual job-based informal employment: operationally comprises all employed persons in the non-agriculture sector, both wage and salaried workers (employees) with no pension or no contribution to a retirement fund; all contributing family workers; all employers and own-account workers in the informal sector enterprises (operationally defined in Bangladesh as all private unincorporated enterprises engaged in non-agriculture work that do not have any registration); and all own-account workers employed in a private household.
2010 (new definition)	The informal workers included: all those who identified themselves as unpaid family workers, irregular paid workers, day labourers in agriculture/non-agriculture, domestic workers and paid/unpaid apprentices; all workers employed in the personal household sector; paid employees working in the formal sector who are not paid weekly or monthly; paid employees working in personal establishments and 'other' sectors; and employers, self-employed workers and 'other' workers employed in businesses with no written accounts and/or who are not registered with the proper authorities.
2005–06	Same as 1999–2000
2002–03	Same as 1999–2000
1999–2000	Jobs in informal sector (informal sector was defined as private informal sector as distinct from private formal sector and government sector) (self-reported employment status by respondent, which was then categorised by BBS)

Source: BBS, LFS (1999-2000, 2002-03, 2005-06, 2010, 2013, 2015-16)

The 2010 Informal Sector Survey by the World Bank and BBS and the World Bank's 2013 Enterprise Survey look at informality from enterprise-level perspectives. Informal sector enterprises are those that are not registered at any level with government institutions. In subsequent sections of this paper, profitability and productivity differentials between formal sector and informal sector enterprises are estimated to examine the relative efficiency of informality at the enterprise level. As mentioned, even in formal sector enterprises, most employment remains informal.

3.2 Dynamics of informal employment in Bangladesh

This sub-section undertakes an analysis of LFS 2015–16 data to decompose labour force participation according to the nature – formal and informal – of employment. Table 3 presents some stylised facts in this regard.

Table 3 Employment structure in Bangladesh: formal and informal

Total population	Labour force	Employed population	Formal employment	Informal employment	Unemployment
158.5 million	62.1 million	59.5 million	8.2 million	51.3 million	2.6 million
100% of total population	39.2% of total population	95.8% of labour force	13.8% of employed population	86.2% of employed population	4.2% of labour force

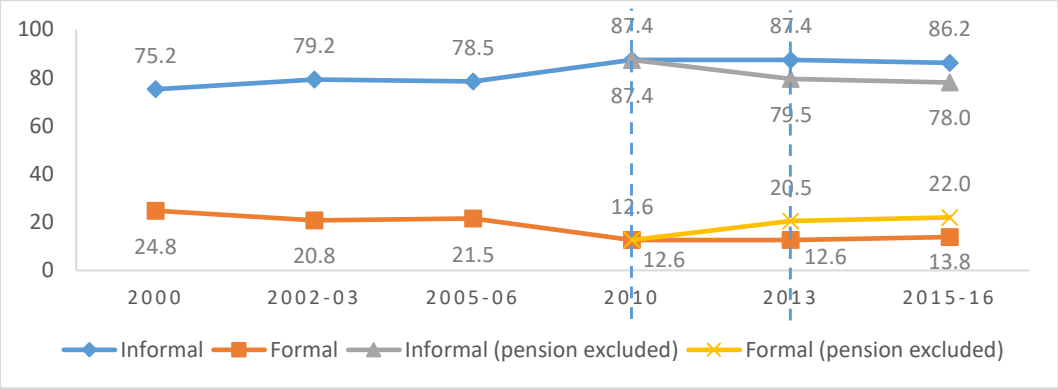
Source: BBS (2017).

According to BBS (2017), the estimated total population of Bangladesh at the time was approximately 158.5 million, of whom about 106.1 million belonged to the working-age population. The labour force participation rate of the population aged 15 and above stood at 58.5% (59.5 million). The quarterly LFS found an estimated 2.6 million people to be unemployed, with the unemployment rate being 4.2% of the labour force. Only 13.8% of those employed were in formal employment and the rest (86.2%) were in informal employment. Incidence of informal employment was the highest in the agricultural sector (97.9%), followed by the industrial sector (90.0%) and services sector (70.6%). In rural areas, 97% of all employed females were in informal employment (85.9% for males) compared to 90.6% in urban areas (73.6% for males). At the national level, only 4.6% of all employed females were engaged in formal employment compared to 17.7% for their male counterparts.[12]

3.3 Trends in formal–informal employment in Bangladesh

As mentioned, definitional changes prevent a proper comparison of the relative trends in formal and informal employment over the six time points. As seen in Figure 1, informal employment in 2000 was 75.2% of the labour force compared to formal employment of 24.8%. By 2015–16, the share of informal employment had increased to 86.2%, with the share of formal employment being 13.8%.

Figure 1 Trends in informal and formal employment in Bangladesh (%)



Source: BBS, LFS (1999-2000, 2002-03, 2005-06, 2010, 2013, 2015-16).

Note: The dotted vertical lines represent shifts in definitions.

[12] Historically, women are relatively more engaged in the agricultural sector, which is overwhelmingly informal in nature. A lower proportion of women in higher education, social factors, various barriers to entry into formal employment for females and a lack of opportunities for upward mobility (to the formal sector of the labour market) are some of the reasons for such engagement.

However, since the definitions of formal and informal employment were changed in 2010 and revised in 2013 (represented by the dotted vertical lines) to bring them more in line with standard international definitions, only the LFS datasets for 2010, 2013 and 2015–16 can realistically be considered comparable. Establishing comparability of the two groups of datasets, prior to and after 2010, proves to be problematic. The pre-2010 datasets do not have information to answer the new questions that were added after 2010 to define formality. Likewise, the post-2010 datasets do not have information that was collected earlier to define informality and formality (based on self-categorisation, people worked in either the private informal, private formal or government sector). According to LFS 2015–16 data, 86.2% of the employed population were in informal employment, with that level more or less persisting since 2010 (for which data were recalculated using the revised definition introduced in LFS 2013). If the pension condition is excluded from the definition of formal employment and estimations are redone, the proportion of the employed population in formal employment rises significantly from 13.8% to 22% in 2015–16 (shown in Figure 1 in the yellow line).

Further decomposition in Table 4 shows that among the 51.3 million informal employment people the respective shares of males and females are 67% and 33%. The number of informally employed in rural areas is 38.4 million (66.3% are male and 33.7% are female) compared to 12.9 million in urban areas (68.9% are male and 31.1% are female) when corresponding employment cohorts are considered. Overall, the male-to-female gender ratio is 9:1 in formal employment and 2:1 in informal employment.

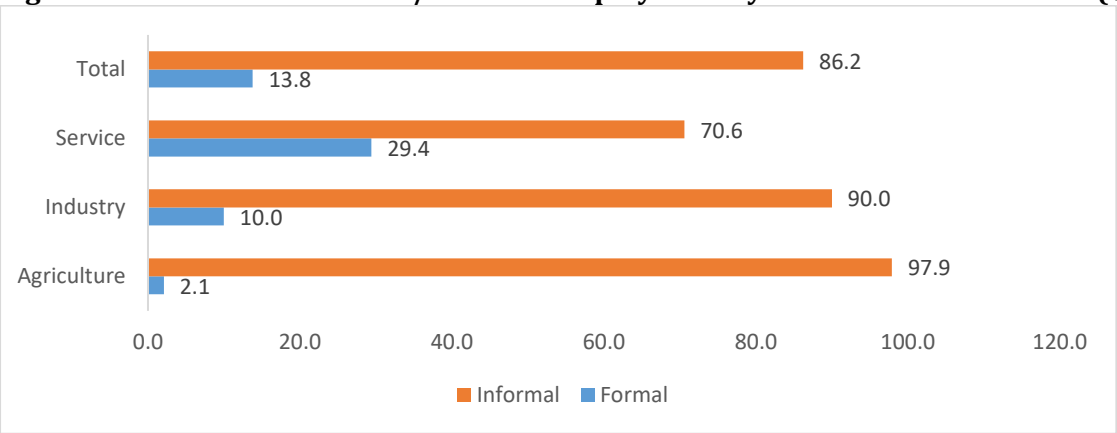
Table 4 Shares of female and male employment at rural, urban and national levels

	Rural				Urban				National			
	Male	Female	Total	Number	Male	Female	Total	Number	Male	Female	Total	Number
Formal	91.2 %	8.8%	100%	4.6	88.5 %	11.5%	100%	3.6	90%	10%	100%	8.2
Informal	66.3 %	33.7%	100%	38.4	68.9 %	31.1%	100%	12.9	67%	33%	100%	51.3

Source: BBS (2017).
Note: Numbers are in million.

The distribution of informal employment across the broad economic sectors is presented in Figure 2. Informal employment was high across all sectors. This was very high in the agriculture sector (97.9%), followed by the industrial sector (90.0%) and services sector (70.6%).

Figure 2 Distribution of formal/informal employment by broad economic sectors (%)



Source: BBS (2017).

Table 5 shows the sectoral distribution of informal employment over time. The majority of informal employment in 2015–16 was in agriculture (48.5%), followed by services (30.2%) and industry (21.3%). Interestingly, informal employment increased in the industrial sector between 2010 and 2015–16 and decreased in agriculture. These trends imply that the increasing number of workers moving away from the agricultural sector are being absorbed primarily in informal employment in the industrial and services sectors. One reason for these outcomes is that workers moving from the agricultural sector tend to be low-skilled and less educated, which means they are only able to secure employment in the urban informal sector.

Table 5 Distribution of total informal employment by sector (%)

Year	**2010**	**2013**	**2015–16**
Agriculture	52.5	50.6	48.5
Industry	15.4	21.7	21.3
Services	32.1	27.7	30.2
Total	100	100	100

Source: BBS, LFS (2010, 2013, 2015-16)

As Table 6 indicates, informality cuts across all sectors of Bangladesh's economy. Informal employment is highest in agriculture (about 42%), while formal employment is highest in the services sector (about 11%).

Table 6 Shares of formal and informal employment by sector (%)

Sector	Bangladesh		
	Formal	Informal	Total
Agriculture	0.9	41.8	42.7
Industry	2.0	18.5	20.5
Services	10.8	26.1	36.8
Total	13.7	86.2	100

Source: BBS (2017).

Notably, there is more male dominance in formal employment than informal employment, which is illustrated in Table 7. Thus, while a move towards formalisation is positive from the perspective of structural transformation of the economy, gender aspects should be kept in mind. A two-pronged strategy – catering to the welfare of female workers in informal employment and creating more scope for women to enter formal employment – is needed.

Table 7 Formal–informal employment structure in Bangladesh's labour market by sector and sex

	Formal employment			Informal employment		
Sector	Male	Female	Total	Male	Female	Total
Agriculture	88.8	11.2	100	55.2	44.8	100
Industry	90.8	9.2	100	74.9	25.1	100
Services	90.0	10.0	100	80.3	19.7	100

Source: BBS (2017).

Informal employment is dominated by those with relatively lower (or no) years of schooling (Table 8). Those with more education had a greater share in formal employment than in informal employment. It is also seen from the above that, over time, their share in formal employment has been on the rise. On the other hand, those with less education are getting stuck in the informal sector in increasing numbers.

This emerging labour market scenario corresponds well with Bangladesh's recent growth trajectory. The increasing contribution of the industrial and services sectors to the GDP (as distinct from that of the agriculture sector) and the growth of formal enterprises in these sectors are indicated by the changes in GDP composition.[13]

Table 8 Educational attainment in formal and informal sectors (%)

Education	Formal employment	Informal employment	Total (in Million)	Formal–informal ratio
None	23.2 (10.9)	76.8 (35.9)	100 (19.3)	0.2
Primary	40.0 (18.1)	60.0 (27.1)	100 (15.4)	0.5

[13] The contribution of industries and services sectors to the GDP has increased from 76.2% in FY2000 to 85.8% in FY2017, with the industrial sector's share rising from 23.3% to 29.3% over the corresponding period. The demand for trained people in the formal sector has also seen a rise, although non-Bangladeshi technical people and experts are meeting part of this demand. The number varies between 450 and 500 thousand (BAIRA, 2018).

Secondary	56.9 (38.2)	43.1 (28.9)	100 (17.9)	1.1
Higher secondary	75.7 (14.5)	24.3 (4.7)	100 (3.6)	1.4
Tertiary	84.8 (18.2)	15.2 (3.3)	100 (3.2)	7.6
Other	48.4 (0.2)	51.6 (0.2)	100 (0.096)	0.0
Total employment	13.8 (100)	86.2 (100)	100 (59.5)	0.0

Source: BBS (2017).
Note: Numbers in parentheses indicate share in total employment.

Table 9 presents the average wages in Bangladesh for formal and informal employment for various sectors of the economy. As can be seen from the table, those in formal employment earn between 28.1% and 62.9% more than those in informal employment, depending on the particular sector of the economy. If we consider an informal sector employee moving from agriculture to industry to services, there are wage gains of 32% (agriculture to industry) and 11% (industry to services). Thus, sectoral shifts within the domain of informality do entail a notable wage premium, on average.

Table 9 Average wages by sector and formal–informal divide

	Informal sector (Tk)	Formal sector (Tk)	Formal above informal (%)
Agriculture	9,097	11,657	28.1
Industry	11,975	18,641	55.7
Service	13,278	21,635	62.9

Source: Authors' calculations using quarterly LFS 2015–16.

Table 10 provides information as regards average wages by various occupations, according to the formal–informal divide. The figures corroborate the findings presented in Table 9. For each of the occupations the average wage for those in formal employment is found to be higher than those in the informal employment, in the range of 6.9% to 28.4%.

Table 10 Average wages by occupation

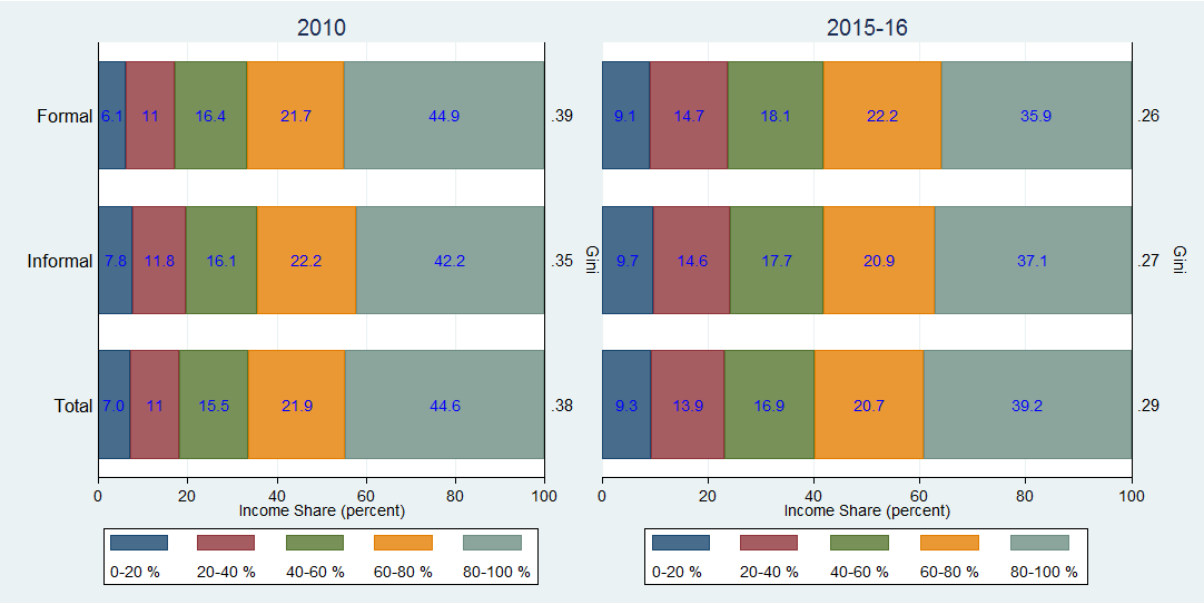
Occupation	Informal employment (Tk)	Formal employment (Tk)	Formal above informal (%)
Managers	24,449	28,765	15.0
Professionals	19,807	25,087	21.0
Technicians and associate professionals	15,352	19,222	20.1
Clerical support workers	13,181	16,892	22.0
Service and sales workers	12,032	16,811	28.4
Skilled agricultural, forestry and fish	8,842	9,496	6.9

Craft and related trades workers	11,626	15,344	24.2
Plant and machine operators, and assemblers	11,919	16,277	26.8
Elementary occupations	9,190	12,084	23.9

Source: Authors' calculation using quarterly LFS 2015–16.

To better understand the income-earning dimensions of formal and informal employment, we have estimated the Gini coefficient for wage income. The purpose was to examine the intertemporal movement of the coefficient (between 2010 and 2015–16). It is interesting to note that the overall Gini has come down from 0.38 to 0.29, while the national Gini has gone up from 0.45 to 0.48 over the same period. This reinforces the argument of reducing inequality through job creation, both formal and informal, and also that the jobs agenda must be seen as an integral part of inclusive growth in Bangladesh (Figure 3).

Figure 3 Percentage share and Gini coefficient based on wage income: 2010 vs 2015–16



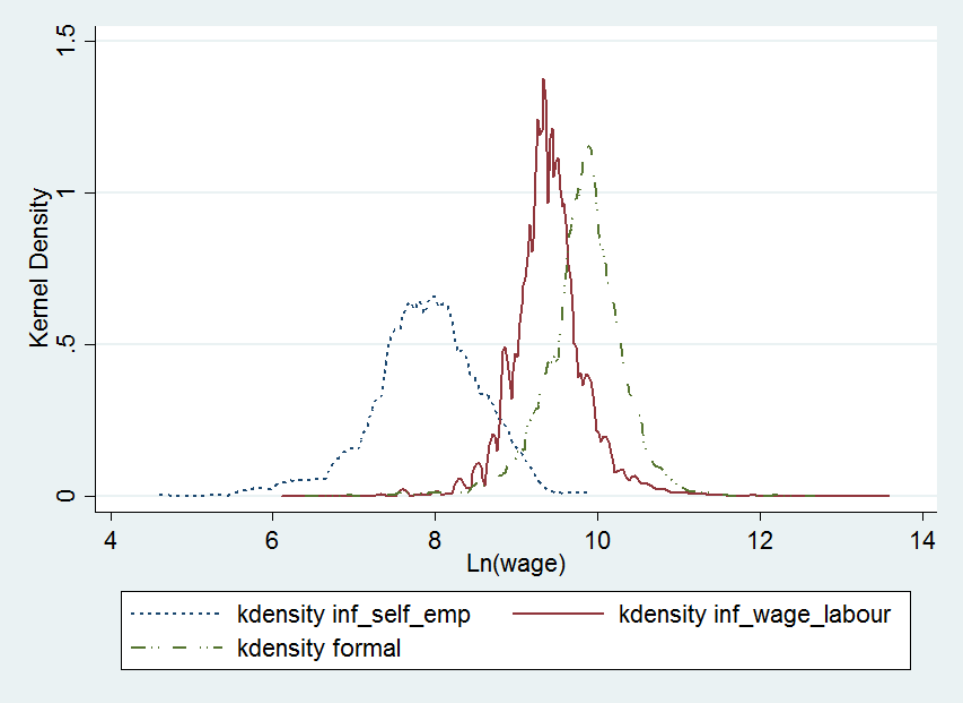
Source: Authors' calculations using LFS 2015–16.

We have estimated the Kernel density of log income by employment status, presented in Figure 4. As would be expected, the estimates indicate that in Bangladesh the mean income of those in formal employment was higher than that of those in the informal wage labour market.[14] Interestingly, the mean income of those in self-employment was found to be even lower than that of those in informal wage labour. This may be because of the observed trend of many in the Bangladesh labour being forced to engage in low-income service sector activities through self-

[14] The results are robust and, as the figure indicates, the wages for the three categories are normally distributed.

employment when they are not able to get any job even in the informal labour market as paid/waged employees.

Figure 4 Kernel density of log income by employment status



Source: Authors' estimation using BBS (2017).

What transpires from the data is that informal employment in Bangladesh is characterised by relatively low education and low wages.

3.4 Informal employment in the manufacturing sector

This section examines in some detail the nature of informal–formal employment in the manufacturing sector of Bangladesh. The discussion here focuses particularly on two of the key sub-sectors: RMG and leather and footwear sectors. The objective is to derive some in-depth insights on the nature of the formal–informal nexus in the value chain in these sub-sectors. As was pointed out earlier, informal employment has the predominant share in the manufacturing sector of Bangladesh. Of the 8.6 million employees in the sector (in 2015–16), about 88% were in informal employment. Our calculations indicate that informality has remained persistent, although the share has seen some decline between 2010 and 2016 (Table 11). A majority of firms in the manufacturing sector in Bangladesh are informal and employ workers with some form of incomplete secondary education. As would be expected, the educational attainment of those in informal employment in the manufacturing sector was lower than that of those in formal employment (Table 12). About one-fifth of those in formal employment have higher secondary education and above, compared to only about one tenth in the informal sector.

Table 11 Trends in informal employment in the manufacturing sector (%)

Year	2015–16	2013	2010
Formal employment	11.6	8.9	9.7
Informal employment	88.4	91.1	90.3
Total	100.0	100.0	100.0

Source: BBS, LFS (various years).

Table 12 Educational attainment in the manufacturing sector by formal and informal employment (%)

	2015-16	
Education	Formal employment	Informal employment
None	13.9	22.7
Primary	26.8	31.8
Secondary	39.3	35.7
Higher Secondary	9.3	5.6
Tertiary	10.8	4.1
Others	0.04	0.04
Total	100.0	100.0

Source: BBS, LFS (various years).

3.5 Formal–informal linkage

As the literature survey reveals, there is no clear demarcation between formal and informal employment in many of the production chains. Not only do formal and informal employment exist side by side in many sectors in developing economies, they tend to coexist in the value chains of many sub-sectors as well. In Bangladesh this aspect of formal–informal nexus at sub-sectoral level has not been studied in any depth. An attempt was made as part of this study to investigate this phenomenon based on limited field-level observations and focus group discussions and by undertaking an analysis of the sectoral data available from the World Bank's 2013 Enterprise Survey. One limitation of the analysis was that formality–informality could only be investigated at the enterprise level, and not at the employment status level.

It was observed that only a few formal enterprises operate in total isolation from informal enterprises in particular value chains. A formal enterprise is defined as one that is registered with a relevant government agency at national or any other level. In the context of Bangladesh's manufacturing sector, formal–informal enterprises were found to operate along the value chain in three forms: (1) informal household or small-scale enterprises-based suppliers of inputs and intermediate items catering to the demands of other informal enterprises (raw leather sector); (2) small-scale enterprises in the informal sector supplying intermediate products to formal enterprises (finished leather sub-sector); (3) suppliers of finished goods, as subcontractors, catering to formal enterprises (as in the case of the apparel sector).

While the type of employment of those employed by informal enterprises was overwhelmingly informal, it was also found that many employees of formal enterprises belong to the informal employment category as per the definition provided in the LFS.

Thus, what transpires from the literature and the field investigation is also reflected in Table 13.

Table 13 Employment characteristics in formal and informal sector enterprises

Sectors/employment	Formal sector enterprise	Informal sector enterprise
Formal employment	Yes	No
Informal employment	Yes	Yes

Source: Field observations.

3.6 Formal–informal employment nexus in selected manufacturing sectors

As is known, the RMG sub-sector is the most important manufacturing component in the Bangladesh economy, employing about 3.5 million workers in about 3,600 enterprises.[15] Following the Rana Plaza tragedy of 2013, the sector has been undergoing important changes, with increasing emphasis on worker safety and better working conditions and higher compliance assurance.

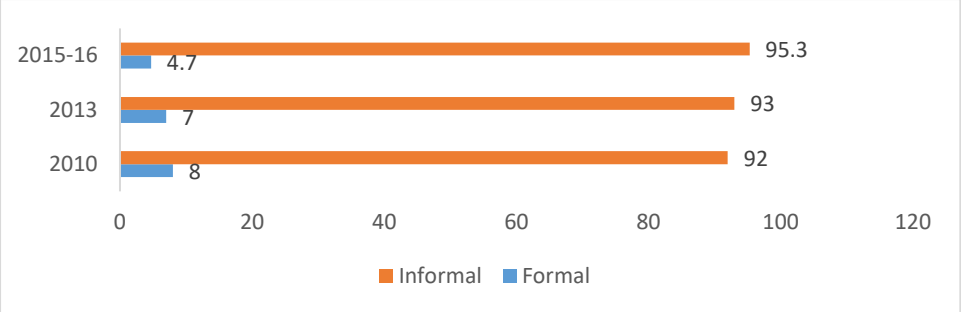
The leather and leather goods sector is also a traditionally important sub-sector in the manufacturing sector of Bangladesh. Both the RMG and the leather and leather goods sub-sector are oriented to both domestic and overseas markets.[16] The sector employs about 129,000 workers. These two sub-sectors were selected for in-depth study to examine the informality–formality continuum in labour force participation and the formal–informal nexus in the value chain. The objective is to derive insights from the perspective of more inclusive growth in the Bangladesh context.

3.7 Informality in the RMG sector

As Figure 5 shows, in the RMG sector, less than 5% of total employment belonged to the informal category, while the remaining 95% was in informal employment (LFS 2015–16).

Figure 5 Formal/informal employment in RMG sector, Bangladesh

[15] 82% of Bangladesh's total export earnings of US$34.8 billion comes from export-oriented RMG sector (FY2017).
[16] The export-oriented leather and leather goods sub-sector of Bangladesh earned about US$1.2 billion (3.5% of Bangladesh's total exports in FY2017).



Source: Based on BBS, LFS (various years).

It is interesting to note that the share of those in formal employment indeed declined between 2013 and 2016. Whether this is a consequence of the developments within the sector following the Rana Plaza tragedy is something that demands to be looked into in more detail. Field-level investigations find anecdotal evidence of workers being hired, in some cases, on a contractual basis, under informal arrangements (rather than as regular employees who, according to the amended 2013 Labour Law, and also as per enforcement of compliance requirements under the Accord-Alliance-Tripartite agreement, have to be provided with a number of rights[17]). It will be important to have a more in-depth examination of issues of informalisation in the RMG sector through detailed field-level surveys to capture this evolving scenario in the RMG labour market.

Table 14 Educational attainment in the RMG sector

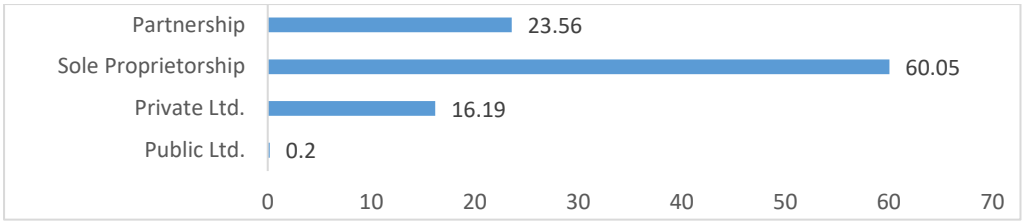
Education	Informal (%)	Formal (%)	Total	Formal–informal ratio
None	82.2 (14.3)	17.8 (3.1)	100.0	0.2
Primary	67.7 (32.2)	32.3 (15.4)	100.0	0.5
Secondary	47.7 (43.5)	52.3 (47.7)	100.0	1.1
Higher Secondary	42.1 (6.7)	57.9 (9.2)	100.0	1.4
Tertiary	11.7 (3.3)	88.3 (24.6)	100.0	7.6
Others	100.0 (0.1)	0.0 (0.0)	100.0	0.0
Total employment	95.3 (100.0)	4.7 (100.0)	100.0	0.0

Source: Authors' calculation using BBS (2017).
Note: Numbers in parentheses indicate percentage in total formal and informal employment, respectively. The total number of employed is 313,000.

As Table 14 shows, the likelihood of being in formal employment in the RMG sector rises significantly with higher educational attainment.

Figure 6 Ownership pattern in the RMG sector (%)

[17] These include issuance of an appointment letter, severance pay, entitlement from workers' welfare fund, etc.



Source: World Bank (2013).

It is also to be noted that the RMG sector is dominated by sole proprietorships and partnerships (about 84% of total firms) and only 16% of the firms are either private or public limited companies. This depicts the overall ownership pattern for all RMG units. If only 100% export-oriented RMG units are considered the respective shares would be: 3.6%, 51.7% and 18.7%. While the labour law (2013 amended) does provide the workers certain benefits and rights, a majority of workers in sole proprietorships and partnerships do not receive entitlements which would have put them in the category of formal employment.

Figure 7 Value chain of textiles

Source: Field-level observation.

As is also to be noted from the perspective of inclusive growth, in the vertical segment of employment in the RMG sector, the higher the job category, with higher income, the higher the percentage of formality. Thus, about 85% of the executives were in formal employment, whereas among other categories of employees, between 93% and 98% were in the informal category (Table 15).

Table 15 Occupational status and formal–informal employment in the RMG sector (%)

Occupation	Formal	Informal
Executives	84.6	15.4
Manufacturing Managers and Supervisor	7.2	92.8
Quality Checker	3.3	96.7
Sewing and Embroidery	2.4	97.6
Garment helper, waving and knitting workers	2.0	98.0
Sewing Machine operator	3.2	96.8
Others	5.6	94.4
Total	4.1	95.9
Estimated population in thousands (relative shares of formal and informal)	128.6 (4.7%)	3008.4 (95.3%)

Source: Extracted from BBS (2017).

If the various stages of production in the RMG/textile sector are considered horizontally, cohabitation of formality and informality in employment along the production chain is clearly discernible (Table 16). Thus, as the two tables show, in the textile/RMG value chain, formality and informality coexist in the labour market, both horizontally – in the various subcomponents of the value chain – and vertically, as is seen from formal/informal employment composition along the vertical stages in the production chain where employees with higher qualifications and skills tend to be more in formal employment. However, since in most formal enterprises pensions/contributory funds are not applicable for non-salaried workers, whether skilled or not, a majority of these workers tend to remain in informal employment. In contrast, a majority of executives enjoy the benefits that qualify them as formally employed according to the definition in LFS 2013.

Table 16 Occupational status and formal–informal employment in the textile industry (%)

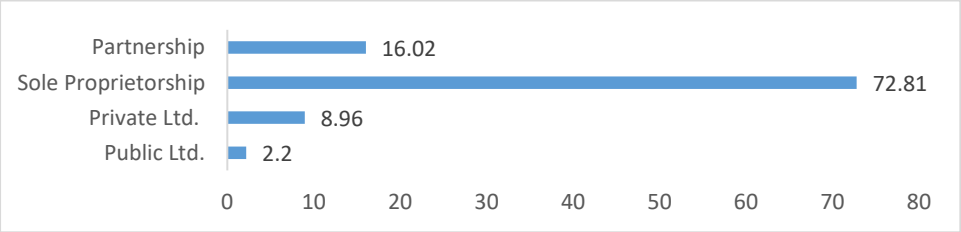
Occupation	Formal	Informal	Total
Preparation of spinning	23.6	76.4	100.0
Weaving and textiles (excluding handloom products)	8.7	91.3	100.0
Finishing of textile (dyeing, bleaching etc.)	19.1	80.9	100.0
Others	13.8	86.2	100.0

Source: Extracted from BBS (2017).

3.8 Formal–informal nexus in the leather and leather goods sector

The leather and leather goods sub-sector of Bangladesh is predominantly a sole proprietorship–partnership based industry (89%) with only a small share of private and public limited enterprises (11%), as depicted in Figure 8.

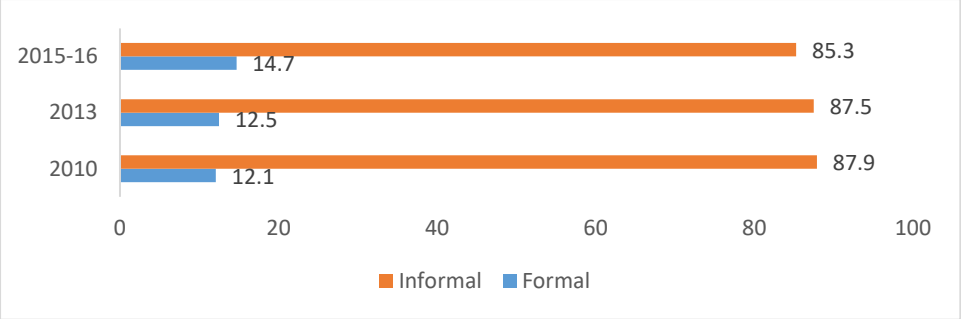
Figure 8 Ownership pattern in the leather sector



Source: World Bank (2013).

LFS data indicate that, similar to the common trend, informality is overwhelmingly present in this sector with about 85.3% of the employment belonging to the informal category (Figure 9).

Figure 9 Formal/informal employment in the leather sector, Bangladesh



Source: BBS, LFS (various years).

This trend is rather persistent, with an insignificant decline in share between 2010 and 2015–16. Here, also, a significant conditional wage gap was found to exist between average wages for male and female, to the tune of 18.1% (as would be seen from Table 24 in the next section).

Figure 10 depicts the production chain in the leather goods sector. Here also informality is visibly present along the production chain. All employment in the tanning segment is informal. Overall, around 83% of employment in the leather industry is informal in nature, and along the value chain in this industry informal employment dominates in all job categories.

Figure 10 Leather production value chain

Source: Field-level observations.

In the global literature, informality is found to be more extensive among the young and less-educated and among women. Table 18 also bears this out in the Bangladesh context, where more than half the workers are in the age group 15–29 years.

Table 17 Informal–formal employment in the leather industry by occupation

Occupation	Formal	Informal	Total
Tanning	0.0	100.0	100.0
Manufacturing of luggage	28.9	71.1	100.0
Manufacturing of footwear	14.3	85.7	100.0
Total	16.9	83.1	100.0
Est. population (in, 000)	21.8	107.2	129.0

Source: Extracted from BBS (2017).

Table 18 Informal employment by age

Age Group	RMG (%)	Leather (%)
15-29	67.4	54.9
30-64	32.3	44.3
65+	0.3	0.8

(Total) Total informal workers	(100.0) 3.3 million	(100.0) 96 thousand

Source: Estimated from BBS (2017).

A majority of informal workers have not completed primary education, in both the RMG and the leather sectors of the country (Table 19). In both these sectors there is a certain degree of gender bias in the context of the formal–informal divide. The likelihood of being in informal employment rises if the employee is a female (Table 20).

Table 19 Informal employment by education

Education (in years)	RMG (%)	Leather (%)	National (%)
0–5	46.5	65.4	63
5–10	44.4	31.2	28.9
10–12	6.0	1.3	4.7
12+	3.1	2.1	3.3
(Total) Total informal employment	(100.0) 3,211,406	(100.0) 92,006	(100.0) 59,530

Source: Estimated from BBS (2017).

Table 20 Informal–formal employment in the RMG and leather sectors by gender

Sector	RMG (%)			Leather (%)		
Gender	Formal	Informal	Total	Formal	Informal	Total
Male	5.9	94.1	100.0	18.9	81.1	100.0
Female	3.3	96.7	100.0	1.2	98.8	100.0
Total	4.7	95.3	100.0	14.9	85.1	100.0

Source: BBS (2017).

4: Determinants of informality in employment and at firm level

In this section, a number of econometric exercises are carried out to identify determinants to entry into the informal labour market and differential returns between the formal and informal sectors.

4.1 Determinants of formality–informality in employment

An econometric exercise was undertaken to understand which characteristics of an individual most affect participation in formal/informal jobs. The results are presented in Table 21. The exercise considered demographic and economic factors (education, age, gender, marital status, training, migration status, having small children) and also a dummy for the ease of doing business. The exercise was based on data from 2013 and 2015–16 LFSs. A positive and statistically significant (at 1% level) relationship was found between education and formality (the more educated tend to be in formal employment) and between age and formality (the greater the age and consequently the experience, the greater the possibility of being in formal employment). A

similar positive relationship was discerned in the case of training. Migration status (rural to urban) was found to have a positive relationship with informal employment. A separate dummy variable was taken for ease of doing business. Results show that a drop in the doing-business ranking[18] had a negative relationship with formality. This is perhaps not counter-intuitive, because a decline in terms of the 10 sub-indicators[19] included in the index (registration, credit etc.) would discourage setting up of enterprises in the formal sector. The exercise indicates the importance of providing education and skills, through higher investment in technical and vocational systems, for encouraging formalisation of employment. It also shows that propensity of enterprises to be in the formal sector, which would in turn induce formal employment, will hinge on Bangladesh's capacity to address doing-business-related weaknesses.

The result in Table 21 should be interpreted with some caution though. The dummy in the regression estimate representing the indices is based on relative rankings. However, it does not capture changes in absolute scores of the sub-indicators, rather captures the effects of only the change in ranking.[20]

Table 21 Microeconomic determinants of informal employment
Dependent variable: informal employment

		Marginal effect	
Variable	LPM	Probit	Pooled probit
Education	-0.0278***	-0.0248***	-0.0254***
	(0.000466)	(0.000353)	(0.000329)
Age	-0.0137***	-0.0153***	-0.0163***
	(0.000470)	(0.000618)	(0.000573)
Age square	0.000110***	0.000135***	0.000147***
	(5.41e-06)	(7.12e-06)	(6.66e-06)
Female	-0.0293***	-0.0250***	-0.0419***
	(0.00265)	(0.00252)	(0.00232)
Income	-3.25e-06***	-8.29e-07***	-1.13e-06***
	(4.94e-07)	(2.03e-07)	(2.20e-07)
Unmarried	-0.00741**	0.00575	0.00660*
	(0.00341)	(0.00392)	(0.00367)
Training	-0.0945***	-0.0455***	-0.0622***

[18] Bangladesh's position fell from 129th to 176th between 2013 and 2016.
[19] The sub-indicators are: a) starting a business, b) dealing with construction permits, c) getting electricity, d) registering property, e) getting credits, f) protecting minority investors, g) paying taxes, h) trading across borders, i) enforcing contracts, j) resolving insolvency. The higher the value of the index, the lower the business environment, and vice versa.
[20] It is possible to use a particular indicator as the dummy in the determinant analysis and to find out contribution of the indicator to formality/informality.

Variable	LPM	Marginal effect Probit	 Pooled probit
	(0.00788)	(0.00364)	(0.00298)
Migration	-0.000978	0.00313	-0.00301
	(0.00277)	(0.00231)	(0.00228)
Children	0.00242	0.00863***	0.00942***
	(0.00236)	(0.00234)	(0.00225)
DB_Dummy	--	--	0.0205***
			(0.00244)
Constant	1.423***	--	--
	(0.00913)		
Observations	75,316	75,316	97,421
(Pseudo) R-squared	0.24	0.33	0.29

*Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1*
Note: Detailed variable descriptions are provided in Annex 1, Table 1.1.
For the sake of brevity, we present the key results here. More comprehensive results, which include an urban-rural dummy, a regional dummy and a sectoral dummy, are presented in Annex 1, Table 1.2. The variable is not for any job-specific training. It rather indicates whether the individual received any type of job-related training in the previous year outside of his/her workplace.
Source: Estimations based on BBS LFS 2013 and 2015–16.

Table 22 shows the monthly wage gap (in nominal Bangladeshi Taka, Tk) estimated from LFS 2015–16. This is the estimated conditional mean wage (the methodology is explained in Section 1.2) in the context of formal–informal employment. It is seen that, on average, those in formal employment earned about 75% more compared to those in informal employment. The gap was found to be statistically significant at 1% level. The raw median wage for formal employment was found to be Tk11000, while for informal employment the corresponding figure was Tk9000, with the wage gap being 22.2%.[21] As can be seen from Table 22, the mean wage in the formal sector in Bangladesh was found to be Tk19150, while the mean wage in the informal sector is Tk10952. The wage gap was about 74.9%.[22]

Table 22 Wage gap by formal–informal divide[23]

Employment	Formal	Informal	Gap	Gap (%)
Average wage (Tk)	19,150.00	10,952.00	8,198.00	74.90

Source: Authors' calculation using BBS (2017).

Note: These are conditional average figures (and not arithmetic mean wages).

Table 23 Wage gap by male–female divide

Gender	Male	Female	Gap	Gap (%)
Average wage (Tk)	11,385	10,526	859	7.6

[21] One can have the figures in US$ and purchasing power parity dollar (PPP$) by using the following conversion rates: $1 = Tk82.00; PPP$ 1 = Tk36.4.
[22] This gap is statistically significant at 1% level.
[23] Heckman Two Step results confirm the robustness of results of wage gap (see Annex 2, Table 2.2).

Source: Authors' calculation using BBS (2017).

As shown in Table 23, the mean wage for males in Bangladesh was found to be Tk11385, while the mean wage for females is Tk10526. The wage gap was about 7.6%[22].

We have tried to understand the gender wage gap in a more in-depth manner and to find the underlying causes of the gap in terms of wages, and relate this to informality. For this purpose, we have carried out quantile regression analysis based on LFS 2015–16 data.[24] Details are given in Annex 2. Our results show that the wage gap is higher in the lower quantile of the wage distribution; female employees earn about 10.5% lower wage than that of men. The wage gap tends to be narrower as one moves along the higher deciles of the wage distribution. For example, the wage gap is about 5.9% in the eighth decile and 3.6% in the ninth decile. The results clearly reveal that the gender wage gap is lower in top deciles of the wage distribution in Bangladesh (all results are statistically significant at 1% level).

Table 24 Quantile regression of wage equation
Dependent variable: log of monthly wage

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Variable/quantile	Q = 10	Q = 20	Q = 30	Q = 40	Q = 50	Q = 60	Q = 70	Q = 80	Q = 90
Female	-0.105***	-0.090***	-0.082***	-0.083***	-0.084***	-0.083***	-0.069***	-0.059***	-0.036***
	(0.007)	(0.006)	(0.005)	(0.004)	(0.003)	(0.003)	(0.004)	(0.004)	(0.005)
Other variables included?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	74,951	74,951	74,951	74,951	74,951	74,951	74,951	74,951	74,951
Pseudo R^2	0.19	0.20	0.22	0.24	0.27	0.30	0.33	0.36	0.38

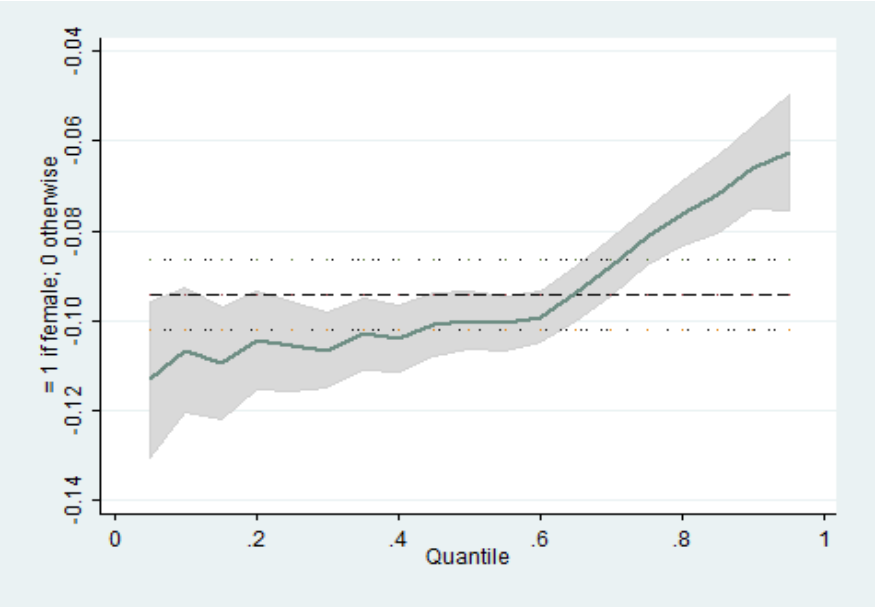
Source: Authors' calculation using BBS (2017). Robust standard error in parenthesis.

We test whether a large presence of informal employment was the major source of the gender wage gap in Bangladesh. We have taken the interaction of female workers and informal sector workers to test the hypothesis concerning 'origination of wage gap from informal sector'. We see that when we include the interaction term in the analysis, there is a dramatic change in the regression results. For the first decile, this interaction term accounts for all the gender wage gap (statistically significant at 1% level) while the gender variable (female) becomes statistically insignificant. This result shows that our hypothesis holds in the above-mentioned regard and proves that informality is the major cause of the gender wage gap in Bangladesh. To a large extent this result holds for all the deciles. In the fourth, fifth, sixth, seventh and eighth deciles we observe

[24] Machado and Mata (2005), Chernozhukov et al. (2013) and Melly (2005) and many others have suggested that to identify root causes of gender differential in wages, one needs to go beyond the Oaxaca–Blinder decomposition and deploy quantile regression techniques. This technique allows us to estimate the gender wage gap in different deciles of wages and identify the underlying reasons for this through interaction of gender and informality variables.

the presence of a gender wage gap even after including the interaction term in the analysis (which shows about two thirds of the gap originating from informality). This is not to say that gender is not a factor in the gender wage gap. The quantile regression graph provides an idea about gender wage gap across the percentiles.

Figure 11 The quantile regression and OLS coefficient



Source: Authors' calculation using BBS (2017).

This exercise indicates that reducing informality was likely to lead to a narrowing of the gender gap in wages.

However, this is not to say that informality should be reduced through regulatory steps. Such steps could lead to greater unemployment and could lower the participation of women in the labour force. What is being stated here is that as informality comes down with development there is likely to be positive impact in the form of a lower gender gap in wages.

Table 25 shows a gap of about 14% in wages received by male and female workers in informal employment in the RMG sub-sector. This was found to be statistically significant for all employees. The corresponding figure for the overall wage gap was 14.4%. The median wage of those in formal employment was estimated to be Tk13,000 and that of those in informal employment to be Tk1,000.[25]

[25] One can have the figures in United States dollars and PPP by using the following conversion rate: $1 = Tk82.00; PPP$ 1 = Tk36.4.

Table 25 Conditional gender wage gap in the RMG sector (in Tk)[26]

Sector	Male	Female	Gap	Gap (%)
Informal	12,956.2	11,358.7	1,597.5	14.1 (0.000)
Overall	12,964.1	11,330.9	1,633.1	14.4 (0.000)

Source: Authors' estimation using BBS (2017); p value in parentheses.

Table 26 Gender (conditional) wage gap in the leather sector

	Male	Female	Gap	Gap (%)
Wage	10,349.2	8,761.6	1,587.6	18.1 (0.000)

Source: Authors' calculation, p value in parentheses.

Table 26 shows a gap of about 18% in wages received by male and female workers in informal employment in the leather industry. This was found to be statistically significant for all employees. Overall the median wage for the formally employed was estimated to be Tk14,000 and that for informally employed to be Tk11,000.[27]

4.2 Informality at enterprise level

Global trends suggest there is a size dimension to informality. Most micro and small and many medium-sized enterprises remain informal. In Bangladesh, the overwhelming majority of units in the micro, small and medium-sized enterprises sectors are small scale, with investment and workforce remaining below certain thresholds (as stipulated by relevant definitions). A question that can be raised about formality and informality at the enterprise level is: Why do some firms comply with government regulations while so many others opt for going underground? It is only reasonable to assume that private firms would chose to operate, on their own volition, in the formal or the informal sector based on rational profit maximising calculations, not unlike when they make investment and production decisions. The extent to which firms comply with government regulations is likely to depend on their own calculations with regard to the various costs and benefits associated with operating formally or informally. Some of the main factors that firms are likely to take into account are the nature of the regulatory framework, the extent to which regulations are enforced, and the various opportunity costs associated with operating in the underground economy. It is pertinent to note here that, as per the statement made by the finance minister, while 850,000 firms have taken VAT registration, only 32,000 (about 3.8%) actually paid the VAT. A more in-depth field-level study could reveal the underlying reasons –

[26] Due to the small sample size, the nominal wage gap for formal employment in RMG is not possible to estimate by using Oaxaca–Blinder decomposition.

[27] $1 = Tk82.00; PPP$1 = Tk36.4.

whether it is because of lax enforcement or the costs involved, and what could be the forgone benefits.

Relevant literature comes up with several reasons for firms' incentive to remain informal and also the barriers that disincentivise firms to become formal. Loayza (1996) shows that, informality has a positive association with levels of taxation and labour market regulations, and is negatively correlated to the strength and efficiency of government institutions. Loayza and Rigolini (2006) confirm these results in a dynamic framework, and show that, in the long run, informality is negatively and robustly related to the flexibility of business regulations. In the long run, links between regulations and informality may apply differently in countries characterised by strong or weak institutions, with good or bad governance systems. The authors find that most of the available indicators of bad governance, including corruption, overregulation, and weak legal environments, are positively related to the size of the informal sector. According to Friedman et al. (2000), when tax regulations and enforcement are perceived as being fair, thus enhancing 'tax morale', low levels of tax evasion and lower levels of informality can be achieved without necessarily reducing tax burdens on firms. The inference here is that in an environment of good governance and transparency, the inducement to remain in the informal sector for purposes of tax evasion would be lower. Analysis based on firm-level data for five Eastern European countries by Johnson et al. (2000) confirms some of the above cross-country results.

In countries where formal firms face high risk of extortion by corrupt officials, entrepreneurs may decide to operate informally to reduce vulnerability to extortion. In fact, there is evidence that this was the case in several so-called transition economies where one of the main motivations for firms' going underground is to "dodge the grabbing hand" (see Friedman et al., 2000; Johnson et al., 2000; and Johnson, Kaufmann, and Shleifer 1997).

Enterprise survey data for Latin America and the Caribbean also suggest that corruption is positively and significantly related to informality. Perry et al. (2007) find that, bribing of government officials to 'get things done' is a common practice in the line of business. Alternatively, if causality runs in the opposite direction, bribes could be a condition for remaining informal. The authors also note that, firms that view the government as corrupt may also place a lower value on public goods that is provided by it, and will thus have lower incentives to become formal and to contribute to government's exchequer.

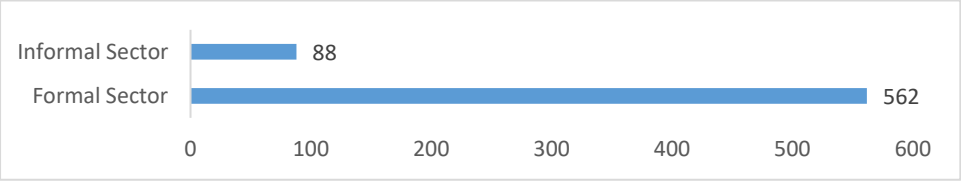
More targeted enterprise-level studies will be required to understand in a more indepth manner the barriers to formalisation in the Bangladesh context. Focus group discussions carried out for

this study corroborated many of the reasons identified in the literature survey-corrupt practices of tax officials, avoidance of tax payment, labour law (although the law does not distinguish between formal and informal enterprises, firms in Bangladesh with above a certain number of workers (20 employees and above) do have to comply with certain regulations). Focus group discussions also corroborated the fact of Bangladesh's low rank in terms of doing business index as entrepreneurs complained of cumbersome licencing and registration processes. Also respondents informed that they don't see any benefit if firms and enterprises get registered and become formal.

The above findings would indicate that both the quantity and the quality of regulations matter for explaining cross-country differences in the size of the informal sector. It would appear that reducing the number of regulations may be a good way of reducing informality in countries characterised by weak governance.

Informality does have a cost in terms of firm productivity and profitability. Many lower-tier micro firms may choose to operate informally because of low levels of productivity and a lack of growth potential. Not surprisingly, when deciding to formalise, such firms are often more motivated by fines and bribes than by incentives such as access to credit or formal contract enforcement. This, however, does not mean that increasing formality does not in itself have the potential for increasing overall productivity, through both static and dynamic channels. In the context of Bangladesh, an ILO study (ADB and ILO, 2010) found labour productivity to be significantly higher (six times) for the formal sector, when compared to the informal sector, in terms of gross value addition (Figure 12).

Figure 12 Labour productivity in the manufacturing sector



Source: ILO (2010).

The effect of informality on firm productivity and profitability was estimated by McKenzie (2010) using 2010 Informal Sector Survey. According to McKenzie (2010), firms in the formal sector earn significantly higher profits.

In the case of Bangladesh, there are four main types of legal registration for enterprises (McKenzie, 2010). These are: (1) registering for a trade licence with a local authority, (2) registering for a tax identification number (TIN) with the government, (3) registering for the Value Added Tax (VAT) system and (4) registering as a company by obtaining a Joint Stock Certificate. In fact, informality–formality at the enterprise level is a continuum. Many enterprises that take VAT registration do not pay VAT,[28] and many that have obtained TIN number do not pay taxes. The number of enterprises registered as companies is also rather small (McKenzie, 2010).

McKenzie (2010) carried out an analysis of profitability and productivity of enterprises, based on data from the Informal Sector Survey, with the enterprises grouped according to formality along a 'formalisation spectrum'. Principal component analysis was employed for this analysis. Table 25 has been put together by reorganising and collating the findings of the study. Seven categories of firms are grouped (from Business Sophistication Model [BSM] 1 to BSM 7) according to the degree of formalisation.[29]

Table 27 Percentage difference in profitability and labour productivity between formal and informal firms

	Legal segment			Business segments (in reference to to BSM 1)					
Profitability differences	Trade License	TIN	VAT	BSM 2	BSM 3	BSM 4	BSM 5	BSM 6	BSM 7
Conditional on industry and location	195%***	212%***	153%***	36%***	93%***	142%***	216%***	461%***	1410%***
+ Firm size	13%**	21%***	8%	12%	21%***	27%***	30%***	64%***	185%***
+ Owner characteristics	9%*	`17%***	4%	10%	20%***	26%***	28%***	62%***	182%***
Labour productivity differences Conditional on industry and location	137%***	106%***	70%***	36%***	58%***	133%***	180%***	325%***	412%***
+ Firm size	53%***	40%***	9%*	30%***	43%***	89%***	110%***	177%***	169%***
+ Owner characteristics	47%***	36%***	4%**	27%**	39%***	79%***	95%***	159%***	146%***

Source: Collated from McKenzie (2010).

As Table 27 shows, even when firm size and owner characteristics are controlled for, there is a clear indication that productivity and profitability experience a rise (and the results are significant) with formalisation of enterprises. For example, as is seen from the table, even when farm size and owner characteristics are controlled for, there is an increase in profitability in the range of 10% to 182%, and productivity increases from 27% to 146% along the spectrum of formalisation of enterprises (BSM2 to BSM7). These results should be carefully interpreted, however. The causation may run from lower productivity to informality, or in other words, from

[28] As noted, only 3.6% of VAT registered companies.

[29] McKenzie deployed a BSM to categorise firms into groups according to their degree of formalisation along a number of dimensions – legal, use of financial tools, technological, marketing, record keeping and whether the firm exports. The continuum of firms range from Group 1, the least sophisticated and most informal (firms with no TIN or VAT) to Group 7 (with TIN and VAT registration and other attributes of formality). Detailed methodology is available in McKenzie (2010).

higher productivity to formality.[30] But the important policy point from these results is that more support towards skills development technology upgradation and competitiveness enhancement will have positive implications on formalisation of enterprises. At the enterprise level, these initiatives will benefit both those who are in formal employment and those in informal employment.

The upshot of the above discussion can be captured in the following ways: formalisation is a spectrum in terms of both enterprises and employment. It is found that in terms of both wages and profitability, formalisation has a positive correlation. There is a strong case to induce and encourage formalisation with better policies, conducive regulatory and fiscal regimes, and credit and other supportive measures. These will result in higher income opportunities and better compliance for workers at the enterprise level. At the same time, at the workers' level, investments in better education and skills endowment for those in informal employment will help raise productivity and competitiveness of enterprises, raising their capacity to move towards formalisation. If the share of formal employment in Bangladesh is to be increased, with capacity to pay pensions and establish contributory funds, both workers and enterprises belonging to the informal–formal continuum will need to be supported through targeted policies and resource allocations.

5: Policy perspectives

In the context of developing countries such as Bangladesh, informality cannot be treated merely as a corollary of underdevelopment. While the nexus between informality and underdevelopment cannot be ignored – as was found in the study, based on global experience and Bangladesh labour market analysis – the issues involved are rather diverse and complex. As the study bears out, informality in Bangladesh is overwhelming in its presence and heterogeneity. Informality–formality in Bangladesh runs along a spectrum, both from an employment perspective and at enterprise level. This provides an opportunity to move gradually to formalisation, on both counts, through incremental steps and progression, with a view to making Bangladesh's growth process an inclusive one, with distributive justice and reduced disparity. One could also argue that such an inclusive strategy will facilitate Bangladesh's middle-income journey, where an increasing number of people will need to be offered better jobs with higher income backed by better human resources, skills endowment and higher productivity.

[30] McKenzie (2010) concedes that this may be true. This reverse causality could have been addressed if structural equation model was employed. However, the structural equation modelling under the principal component analysis framework does not allow for this exercise to be undertaken.

The present study has examined the underlying drivers of informality in its various dimensions – macro- and micro-level drivers, demand and supply side factors, and decisions by market participants, the workers and entrepreneurs. Data reveal male dominance in Bangladesh's formal sector employment, and gender-based wage difference along all segments of the labour market, including the two sectors that were particularly looked at, RMG and textile and leather sub-sectors in the manufacturing sector. Formality and informality were found to coexist in the Bangladesh labour market, both horizontally and vertically, which speaks of the complexity of the issues involved.

Location (rural migrants), education (lower), training (lack of) and age (young) are attributes that contribute to informality in the Bangladesh labour market, with the relationships found to be statistically significant (at 1% level). The study has presented evidence of the wide-ranging and wide-scale presence of informal employment in Bangladesh, which is of heterogeneous nature. However, focus group discussions carried out for the study indicate that, a forced march towards formality could be counterproductive in the sense that firms may be induced against scaling up and instead may go underground. Rather, a gradualist transition appears to be the way forward, with supportive initiatives both at enterprise level and at workers' level, in the form of conducive regulatory and fiscal regimes and access to credit and other supportive measures. Our analysis (Table 21) bears out that, at the workers' level, investment in better education and skills development for those in the informal sector would enhance their capacity to move towards formal jobs in the labour market. The exercise carried out in the study shows that both profitability and labour productivity tend to rise as elements of formality are incrementally added to the production practices and regulatory regimes that guide the informal sectors.

Attaining full employment ought to be integral to an inclusive growth strategy in the Bangladesh context, which also aligns with the country's SDG 8 aspirations. If this be the case, informality in the Bangladesh labour market deserves to be studied in a more in-depth manner. Bangladesh will need to pursue a two-track strategy in view of this: reducing informality in employment through targeted policies and improving the environment in the informal labour market segment in terms of income, labour market conditions, labour rights, job security and other factors. The ILO has emphasised the need for full employment and decent jobs to break the cycle of poverty. In order to ensure that jobs do lead to poverty alleviation, countries will have to pursue policies that ensure graduation from the 'working poor' syndrome. In the context of developing countries such as Bangladesh, this will entail safeguarding the interests of those in informal employment as well as structural transformation of the economy that encourages development of entrepreneurship,

productivity enhancement and technological upgradation, which would lead to greater opportunities for formal employment and growth of formal sectors in the economy.

This study has examined informality in its various dimensions and in a comparative setting, based on a review of literature, relevant government documents and analysis of data from LFSs 2010, 2013 and 2015–16, 2013 Bangladesh Enterprise Survey and 2010 Informal Sector Survey. A number of suggestions have been put forward in the study, and these may be clustered into three groups: (1) addressing data-related challenges; (2) encouraging a move towards formality; and (3) dealing with informality through an inclusive growth strategy. Since informality–formality is present in the Bangladesh context as a continuum, as in many other developing countries, the progression towards formality will (although definitions tend to be contextual and country-specific) need to be achieved in a gradualist way, with the overarching objective of maintaining inclusiveness of the growth process in Bangladesh. As noted above, the objective should be not to reduce informality per se but to address the many challenges that the informal sector and those in informal employment face in Bangladesh. Informality is to be treated as a key component of addressing the job agenda, from the perspective of the inclusive growth agenda to which Bangladesh aspires. The study has underscored that addressing informality should be seen from the perspective of Bangladesh's aspirations in view of the 2030 Agenda for Sustainable Development, the pledge to 'leave no one behind' and the target 8.3 of reducing informality in the economy.

As was stressed earlier, informal employment ought to be seen as an important part of the jobs agenda in the context of Bangladesh. The agenda will have to address the interests of the vast majority of the population associated with informality, which accounted for 86.2% Bangladesh's labour force and 32.4% of the total population. Our analysis has revealed the need for a more in-depth understanding about the various issues concerning the dynamics of the informal labour market in Bangladesh. We have argued that consideration of 'informality' issues within the broad rubric of overall labour market issues in Bangladesh leaves out many of the concrete issues associated with informality that need to be addressed through targeted policies and interventions. This is of particular importance from the vantage point of inclusive growth, which Bangladesh has set as a development strategy and policy priority. The Perspective Plan (2010-2021) and the Seventh Five Year Plan have chartered a 'high growth and inclusiveness pathway' for the country. The latter defines inclusive growth as 'growth that is both sustainable, broad-based in terms of employment opportunities and reaches out to people on the margin'. It is logical to infer from this that the jobs agenda has to be an integral component of Bangladesh's inclusive

growth agenda. And this can be realised only by addressing the challenges originating from informality in its various dimensions, through appropriate initiatives and measures.

Indeed, the SDGs – which Bangladesh has accepted as a national aspiration – talk of leaving no one behind, and particularly in SDG 8, sets out the ambition of rights, safety, security and good livelihood for all in the labour force. SDG 8 also aims at decent labour for all. Achieving this goal in Bangladesh's context will necessitate creating a conducive working environment for workers, ensuring their labour rights and providing decent wages. In fact, one of the indicators related to the target 8.3 refers to 'reduction in the share of informal employment in the labour force'. This is a valid concern and welcome objective. Three issues need to be addressed in this context. First, measuring and monitoring informality in Bangladesh. Second, pursuing policies to expand formality in terms of both enterprises and employment. Third, taking targeted steps to safeguard the interests of workers in informal employment as part of attaining the aspiration of decent jobs in light of SDG 8.

As is known, Bangladesh achieved lower-middle-income country status in 2015 and is set to graduate out of the least developed country group by the year 2024. Being a lower-middle-income country, Bangladesh is no longer eligible for the International Development Assistance (IDA)-type soft-window credit of the World Bank as well as many of the current international support measures. In view of these emerging challenges, Bangladesh's development strategy ought to be guided by the urgencies of productivity enhancement and higher competitiveness to sustain the current growth momentum and avoid the oft-observed 'middle-income trap'. A targeted strategy in support of informality – taking note of its heterogeneous nature, and in the context of a continuum towards formality – is thus crucially important for Bangladesh in going forward.

In view of the above, and guided by the study findings, a number of policy and institutional actions need to be taken up for inclusive integration of the informal labour market in Bangladesh's sustainable growth strategy.

Streamlining definition and data need

Our discussion shows that there is a dearth of the relevant data on informality in Bangladesh. The definition of formal employment, vis-à-vis informal employment, has evolved over time, with the current definition of formal employment having been set in 2013. In the earlier definition there was a concordance between informal–formal enterprise, and informal–formal employment. All jobs in the informal (unregistered) sector were treated as being informal while all jobs in formal (registered) enterprises were considered as formal employment. However, the current definition

of informal employment includes those who do not have pensions or do not contribute to retirement funds, even though they may work in formal enterprises. As was pointed out, this would mean that an overwhelming proportion of workers in formal enterprises are actually in informal employment (e.g. in the RMG sector). The current definition of formal/informal employment is in tune with what is evolving as standard practice in many countries. Labour force surveys should be geared to generating more detailed information on informality in both the informal and formal sectors of the Bangladesh economy to enable tracing of the dynamics of the concerned correlates.

As noted earlier, the most recent Enterprise Level Survey in Bangladesh (2013) did not make the distinction between informality and formality in terms of employment. The 2010 Informal Enterprise Survey did not follow the definition of informality used in the LFS 2010. This creates ambiguity and confusion in dealing with the attendant issues. A well-crafted survey on informality, with correspondence in definitions, will help gain important insights about the dynamics of changes in the context of informality, both at enterprise level and at the level of employment. This would help in designing appropriate policies towards informality-sensitive inclusive growth in Bangladesh.

It has also become necessary to establish a scientifically defined benchmark and to trace reduction in informality in light of SDG 8. For example, as may be seen from Table 28, SDG Target 8.3 requires Bangladesh to monitor the proportion of informal employment in non-agriculture employment, by sex. Generation of this data will enable Bangladesh to provide relevant information for the Voluntary National Reviews (VNRs) regarding progress in SDGs implementation.

Table 28 Informality and need for disaggregation data in view of SDG 8 targets

Target	Target description	Proposed indicators[31]
8.3	Promote development-oriented policies that support productive activities, decent jobs creation, entrepreneurship, creativity and innovation, and encourage the formalisation and growth of micro, small and medium-sized enterprises, including through access to financial services.	Proportion of informal employment in non-agriculture employment, by sex
8.8	Protect labour rights and prompt safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment	Frequency rates of fatal and non-fatal occupational injuries, by sex and migrant status
8.b	By 2020, develop and operationalise a global strategy for youth employment and implement the	Existence of a developed and operationalised national strategy for

[31] Global indicator framework for the Sustainable Development Goals and targets of the 2030 Agenda for Sustainable Development (United Nations, 2017).

	global jobs pact of the International Labour Organization.	youth employment, as a distinct strategy or as part of a national employment strategy

Source: UN (2017).

Reforming the labour laws

Generally speaking, labour laws and labour market reforms play an important role in addressing the challenges faced by informality in terms of both income (e.g. minimum wage provisions) and rights (e.g. enforcement of trade union rights, safety and security of work, better compliance). As mentioned, successive LFSs in Bangladesh have defined formality in a progressive manner, with LFS 2013 defining that formal employment will need to ensure payment of pension to workers or contribution to a retirement fund. On the other hand, the Amended Labour Law (2013) does not make a distinction between formal and informal labour. Manufacturing units of certain specified attributes (having more than 100 workers or Tk10 million investment etc.) are required by the Labour Law to contribute 5% of respective net profits to welfare funds to be distributed according to certain proportions among the three designated funds (80:10:10).[32] The Labour Law does not mention payment of pensions or establishment of retirement funds.

Policy-makers need to amend the Labour Law to distinguish between formal and informal enterprises by making a further differentiation among firms, perhaps by creating an upper threshold in the criteria mentioned above. Incentives may also be considered (e.g. tax breaks), by aligning with fiscal policies, to encourage formal (registered) enterprises to have increasing numbers of employees in formal employment (with insurance, contributions to retirement funds).

This will also ensure alignment between the definition of formality in LFS and the labour laws. This is not to suggest that labour market rules and regulations be so tightened that enterprises are discouraged from becoming formal.[33] However, from a medium-term perspective a move towards more formalisation is desirable, and to be expected, as Bangladesh moves forward. Policies should be calibrated to encourage formal enterprises to increase the number of their employees in formal employment, and to ensure increasing entitlements and rights for those in informal employment.

Encouraging formality in formal enterprises

[32] Mentioned earlier, these are Workers' Participation Fund, Workers' Welfare Fund, and Workers' Welfare Foundation.
[33] This is borne out by the experience of many developing countries.

Our analysis shows a high degree of heterogeneity in the Bangladesh labour market. Informality runs across the formal–informal divide at the enterprise level. With regard to formal enterprises (those registered under the Companies Act), policies should be enacted to encourage formality of employment through specific criteria, in accordance with the definition of formality in the labour force survey. This would ensure enhancement of benefits and employment security for workers in the formal sector. Formal enterprises may be incentivised towards this. Initiatives will also need to be put in place, and a mechanism for enforcement of the policies. Focus group discussions undertaken for this study have suggested that tax breaks may be given to enterprises that provide this type of benefits to workers.

New VAT law as an opportunity towards formalisation

Our analysis shows that informality–formality runs in a continuum in many production and value chains in Bangladesh. The nature of employment in RMG and leather and leather goods sectors, which was investigated as part of the present study, corroborates this observation. While front-end production units tend to be more formalised, back-end production continues to be dominated by informal enterprises. While such enterprises have TIN/VAT etc. registration (stipulated by law), they overwhelmingly remain outside the purview of fiscal authorities. These enterprises also tend to remain outside the formal financial system and face difficulty in accessing bank credit and other support measures. The scope for scaling up a technological upgradation and attaining higher productivity remains severely limited in such circumstances. As a result, the willingness and ability to pay better wages to workers is significantly constrained.

Implementation of the proposed VAT laws can be seen as an opportunity to bring the entire value chain in the production of goods and services within the ambit of the fiscal purview. The law, when implemented (gradually), will bring business/production entities within the legal framework, from the fiscal perspective (encouraging business units to register and get tax credit). What is proposed here is that the implementation of the VAT law be taken advantage of to trace and track labour market dynamics along the informal–formal enterprise nexus and the informal–formal employment continuum along the horizontal and vertical value chains. This will help design policies to address the needs of those in informal employment, by taking supportive measures both for the informally employed and for informal enterprises.

Policy support for those in informal employment

Our analysis shows that informality in Bangladesh, as is the case in many other developing countries, has close correlation to age, sex and education. With age (used as a proxy for experience) and education, employability in the formal sectors significantly rises. Our conditional

wage analysis in section 4 clearly reveals that there is a wage premium in formal employment. In view of this, opportunities for skills development through on-the-job training and apprenticeships – creating scope for workers to move up the skills/employment ladder/grades – assume heightened importance. While these may be considered as general labour market policy issues in the Bangladesh context, there is a danger that many of the challenges originating from 'informality' may not be adequately addressed if a 'generalised' approach is pursued. If growth is to be of an inclusive nature, the particular problems faced by those in informal employment and informal sectors will need to be addressed with focused initiatives.

The Labour Law of Bangladesh, 2006, stipulates the rights and entitlements of workers in enterprises, business units and clusters. However, to be eligible, the units need to have a threshold number of employees (e.g. 20 as per Article No. 183 in 2013 Amended Labour Law). A vast number of informal workers are in micro and home-based enterprises where the vicious cycle of 'low-productivity – low-income' is pervasive. Many informal workers are involved in low-earning self-employment activities. A large number of informally employed are also involved in various hazardous activities. From an inclusive growth perspective, there is thus an urgent need to address the particular challenges faced by informality. National policies such as the National Social Security Strategy (2015) may need to be revisited from this perspective.

Macroeconomic management

The objective of achieving increasingly lower levels of informality should be seen as an integral part of Bangladesh's inclusive growth strategy. Our quantile estimates of wage differentials between male and female shows that, a reduction in informality will lead to a narrowing of the existing gender gaps in wages. The study has identified some of the key determinants of formality-informality in the Bangladesh labour market. From a macroeconomic management perspective, reduction in informality will critically hinge on raising aggregate productivity, higher human resource endowment and the resultant higher wages and income. Ensuring inclusive growth, from an informality perspective, means investing in skills development for the relatively poor so that they are able to find jobs in more dynamic sectors, and in segments within sectors which offer higher wages and income. This will also hinge on a conducive investment environment and supportive fiscal-financial-institutional policies that attract investment from domestic and foreign sources. These investments in production of goods and services would create opportunities of decent jobs, which is important in safeguarding the interests of those in informal employment, as also in reducing informality in the Bangladesh economy.

As was seen from the study, informality and formality runs in a spectrum. As the World Bank (2007) suggests, both carrots (in the form of reforms and actions which reduce the costs and increase the benefits of formalisation e.g. fiscal incentives, access to credit and financial services) and sticks (enforcement of improved laws and regulations relating to minimum wage provisions, labour rights) will need to be deployed to encourage and incentivise the move from informality to formality. This is indeed true from the perspectives of both employment and enterprise. It will also be important to identify barriers (fiscal, regulatory) to formalisation, at both the aforesaid levels, and take gradual steps (simplification of tax laws, facilitation of compliance, easing of entry as a formal entity, a supportive regulatory regime) to promote formal employment and formal sectors in the economy.

The above-mentioned analytical issues and the proposed reform agenda need to find space in the ongoing development discourse in Bangladesh. Indeed, Bangladesh's approach towards addressing the challenges of informality (in employment and production chains) may resonate with other developing countries in similar circumstances.

In the section on scope and limitations, we have identified various gaps in the context of the labour market data which is currently generated in Bangladesh through the LFS. This lack of data and adequate information limits the scope for undertaking a more rigorous analysis of labour market mobility (between formal and informal), occupational choice and within segment analysis as regards informality/formality continuum in the value chains. Policymakers should give adequate attention to generating the needed information to address these weaknesses. It is mentionable here that, the one international labour convention (of the 27) which Bangladesh is yet to sign is the minimum working age. Bangladesh's policymakers should actively consider signing this Convention. Generation of relevant data on child labour, mostly in informal employment and in hazardous jobs, will provide the much needed relevant information which will, in turn, help address the attendant challenges in dealing with issues of child labour in the Bangladesh context. The paper also brings out the need to establish concordance as regards generation of labour market related data among the key surveys carried out by the BBS – the LFS, Household Income and Expenditure Survey and enterprise-level surveys. This will then make it possible to undertake more in-depth analysis concerning the drivers and determinants, regulatory barriers and policy constraints that inform formal–informal labour market dynamics in Bangladesh's context.

References

ADB – Asian Development Bank (2016) *Employment and the Labor Market in Bangladesh: Overview of Trends and Challenges*. Manila: ADB.

ADB and ILO – Asian Development Bank and International Labour Organization (2012) *Informal Sector and Informal Employment in Bangladesh*. Mandaluyong City: ADB.

Ahmed, M. (2017) *Selected Readings on the Strategies for Inclusive development in Bangladesh*. Dhaka: Academic Press and Publishers Library.

Al-Samarrai, S. (2007) 'Changes in Employment in Bangladesh, 2000-2005: The impacts on poverty and gender equity'. World Bank South Asia Region.

BAIRA – Bangladesh International Recruiting Agencies (2018) *http://www.baira.org.bd/.* Dhaka

BBS – Bangladesh Bureau of Statistics (2001) *Report on Labour Force Survey 1999-2000*. Dhaka: BBS.

BBS (2004) *Report on Labour Force Survey 2002-03.* Dhaka: BBS.

BBS (2007) *Report on Labour Force Survey 2005-06.* Dhaka: BBS.

BBS (2011) *Report on Labour Force Survey 2010.* Dhaka: BBS.

BBS (2014) *Report on Bangladesh Labour Force Survey 2013*. Dhaka: BBS.

BBS (2016) *National Accounts Statistics 2015-16.* Dhaka: BBS.

BBS (2017) *Quarterly Labour Force Survey 2015-16*. Dhaka: BBS.

Becker, K. F. (2004) *The Informal Economy*. Stockholm: Swedish International Development Cooperation Agency.

Blinder, A. S. (1973) 'Wage Discrimination: Reduced form and Structural Estimates', *The Journal of Human Resources* 8(4): 436–455.

Botero, J., Djankov, S., La Porta, R., Lopez-de-Silanes, F. and Shleifer, A. (2003) 'The Regulation of Labour', *Quarterly Journal of Economics* 119(4): 1339–1382.

Capp, J., Elstrodt, H. and Jones, Jr., W. (2005) 'Reining In Brazil's Informal Economy', *McKinsey Quarterly*. Retrieved from http:// www.mckinseyquarterly.com

Chen, M. A., Jhabvala, R. and Lund, F. (2002) *Supporting Workers in the informal economy: a policy framework.* Geneva: International Labour Office.

Chernozhukov, V., Fernández-Val, I., & Melly, B. (2013). Inference on counterfactual distributions. *Econometrica* 81(6): 2205–2268.

CPD – Centre for Policy Dialogue (2018) *Bangladesh Economy in FY 2017-18 Interim Review of Macroeconomic Performance*. Dhaka: CPD.

Cunningham, W. and Maloney, W. (2001) Heterogeneity among Mexico's Microenterprises: An Application of Factor and Cluster Analysis. Economic Development and Cultural Change 50(1): 131–156.

de Soto, H. (2000) Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else. London: Bantam Press.

Djankov, S., La Porta, R., Lopez-de-Silanes, F. and Shlefier, A. (2002) 'The Regulation of Entry', *Quarterly Journal of Economics* 117(1): 1–37.

Elstrodt, H., Lenero, P. and Urdapilleta, E. (2002) 'Micro Lessons from Argentina', *McKinsey Quarterly* 2: 1–8.

Fajnzylber, P., Maloney, W. F. and Rojas, G. (2006) 'Does Formality Improve Microfirm Performance? Quasi-experimental Evidence from the Brazilian SIMPLES Program'. Washington DC: World Bank.

Farrell, D. (2004) 'The Hidden Dangers of Informal Economy', *McKinsey Quarterly* 3: 27–37.

Fields, G. S. (2005) 'A welfare economic analysis of labor market policies in the Harris–Todaro model', *Journal of Development Economics* 76(1): 127–146.

Fields, G. S. (2011). Labor market analysis for developing countries. *Labour Economics* 18: S16–S22.

Friedman, E., Johnson, S., Kaufman, D. and Zoido-Lobaton, P. (2000) 'Dodging the grabbing hand: the determinants of unofficial activity in 69 countries', *Journal of Public Economics* 76: 459–493.

Ghani, E., Kerr, W. R. and Segura, A. (2015) *Informal tradables and the employment growth of Indian manufacturing*. Washington DC: World Bank.

Gibson, B. (2014) *Informality in manufacturing and the economy*. Vienna: United Nations Industrial Development Organization.

xGoldstein, R. (2000) *Non-Labour Market Coping Strategies in Argentina*. Washington DC: World Bank.

Government of Bangladesh (2013) Bangladesh Labour Law (Amendment) 2013. Dhaka: Government of Bangladesh.

Government of Bangladesh (2016) National Industrial Policy 2016. Dhaka: Government of Bangladesh.

Guha-Khasnobis, B. and Kanbur, R. and Ostrom, E. (2006) *Beyond formality and informality*. Oxford: Oxford University Press.

Hale, A. (2004) International Garments Subcontracting Chains. [book auth.] Angela Hale and Jane Wills. *Threads of Labour: Garments Industry Supply Chains from the Workers' Prespective.* s.l. : Manchester University: Women Working Worldwide.

Harris, J. R. and Todaro, M. P. (1970) 'Migration, Unemployment and Development: A Two Sector Analysis', *American Economic Review* 60(1): 126–142.

Henley, A., Arabsheibani, R. and Carneiro, F. (2006) *On Defining and Measuring the Informal Sector.* Washington DC: World Bank.

Hossain, M., Bayes, A., and Islam, S. F. (2017) *A Diagnostic Study on Bangladesh Agriculture*. Dhaka: BRAC.

Hussmanns, R. (2004) *Defining and Measuring Informal Employment*. Geneva: Bureau of Statistics, International Labour Organization.

ILO – International Labour Organization (2001) *Stopping forced labour: Global Report under the follow-up to the ILO Declaration on Fundamental Principles and Rights at Work*. International Labour Conference. Geneva: ILO.

ILO (2014) *Reduction of informal Unemployment in Uruguay: Policies and Outcomes*. Geneva: International Labour Organization.

ILO (2002) Decent work and The Informal Economy. International Labour Conference. International Labour Organization. Geneva: International Labour Organization.

Islam, R. (2014) 'The Employment Challenge Faced by Bangladesh: How Far is the Lewis Turning Point?' *Indian Journal of Labour Economics* 57(2): 201–225.

Jann, B. (2008) 'The Blinder-Oaxaca decomposition for linear regression models', *Stata Journal* 8(4): 453–479.

Johnson, S., Kaufmann, D. and Shleifer, A., 1997. Politics and entrepreneurship in transition economies.

Friedman, E., Johnson, S., Kaufmann, D. and Zoido-Lobaton, P., 2000. *Dodging the grabbing hand: the determinants of unofficial activity in 69 countries.* Journal of public economics, *76*(3), pp.459-493.

Kapsos, S. (2008) *The gender wage gap in Bangladesh*. Bangkok: ILO-Asia Pacific Working Paper Series.

Khatiwada, S., Lennon, C. and Morano, C. P. (2013) *Bangladesh: Seeking better employment conditions for better socioeconomic outcomes*. Geneva: International Labour Organization.

King, G. and Nielsen, R. (2016) *Why Propensity Scores Should Not Be Used for Matching.*

Koenker, R. and Bassett, G. (1978) 'Regression Quantiles', *Econometrica* 46(1): 33–50.

Kucera, D. and Roncolato, L. (2004) 'Informal Employment: Two Contested Policy Issues', *International Labour Review* 147(4): 321–348.

Kushnir, K., Mirmulstein, M. L., & Ramalho, R. (2010). Micro, small, and medium enterprises around the world: how many are there, and what affects the count. *Washington: World Bank/IFC MSME Country Indicators Analysis Note*, 1–9.

Lewis, W. A. (1954) 'Economic development with unlimited supplies of labour' *The Manchester School* 22(2): 139–191.

Loayza, N. (1996) 'The Economics of the informal Sector: a simple model and some evidence from Latin America' *Carnegie-Rochester Conference Series on Public Policy* 45: 129–162.

Loayza, N., Oviedo, A. M. and Serven, L. (2005) *The impact of regulation on growth and informality – cross-country evidence.* Washington DC. World Bank.

Loayza, N. and Rigolini, J. (2006) *Informality Trends and Cycles*. Washington DC: World Bank.

Losby, J. L., Else, J. F., Kingslow, M. E., Edgcomb, E. L., Malm, E. T. and Kao, V. (2002) *The Informal Economy Literature Review*. Washington DC: The Aspen Institute.

Machado, J. F. and Mata, J. (2005) 'Counterfactual Decomposition of Changes in Wage Distribution Using Quantile Regression', *Journal of Applied Econometrics* 20(4): 445–465.

Maligalig, D. S., Cuevas, S. and Rosario, A. (2009) *Informal Employment in Bangladesh.* Manila: Asian Development Bank.

Maloney, W. (2006) *Informality Deconstructed*. Washington DC: World Bank.

McKenzie, D. (2010) 'Dimensions of informality in Bangladesh'. Mimeo.

Melly, B. (2005). Decomposition of differences in distribution using quantile regression. *Labour Economics* 12(4): 577–590.

Ministry of Planning (2015a) National Social Security Strategy (NSSS) of Bangladesh. Dhaka: Ministry of Planning.

Ministry of Planning (2015b) Seventh Five Year Plan FY2016-FY2020. Dhaka: Ministry of Planning.

Ministry of Planning (2017) *SDGs Needs Assessment and Financing Strategy: Bangladesh Perspective*. Dhaka: Ministry of Planning.

Mirdha, R.U. (2017, 01 28) 'Foreign employees on the rise in Bangladesh'. T*he Daily Star*, 28 January (www.thedailystar.net/business/foreign-employees-the-rise-bangladesh-194584)

Monteiro, J. and Assunção, J. (2006) *Outgoing the Shadows: Estimating the Impact of Bureaucracy Simplification and Tax Cut on Formality and Investment.* Department of Economics, Pontifícia Universidade Católica do Rio de Janeiro, Brazil.

Moreno-Monroy, A. I., Pieters, J. and Erumban, A. A. (2012) *Subcontracting and the Size and Composition of the Informal Sector: Evidence from Indian Manufacturing.* Bonn: Institute for the Study of Labor (IZA).

Mujeri, M. K. (2004) *Bangladesh Decent Work Statistical Indicators: A Fact-Finding Study*. Geneva: International Labour Office.

Muqtada, M. (1996) 'Macroeconomic Stability, growth and Employment', chapter in *Nepal: An Employment Strategy*. Geneva: International Labour Organization.

Oaxaca, R. (1973) 'Male-Female Wage Differentials in Urban Labor Markets', *International Economic Review* 14(3): 693–709.

Paul, H. L., Antunes, A., Covington, A., Evans, P. and Philips, P. (2013) 'Bangladeshi leather industry: An overview of recent sustainable developments', *Journal of the Society of Leather Technologists and Chemists* 97(1): 25–32.

Perry, G. E., Maloney, W. F., Arias, O. S., Fajnzylber, P., Mason, A. D. and Saavedra-Chanduvi, J. (2007) *Informality: Exit and Inclusion*. Washington DC. World Bank.

Rahman, R. (2004) *Employment Route to Poverty Reduction in Bangladesh: Role of Self-employment and Wage Employment.* Geneva: ILO Recovery and Reconstruction Department.

Rahman, R. and Islam, K. M. (2003) *Employment-Poverty Linkages: Bangladesh*. Geneva: ILO Recovery and Reconstruction Department.

Rahman, R. and Islam, R. (2013) *Female Labour Force Participation in Bangladesh: Trends, Drivers, and Barriers.* New Delhi, India: ILO Asia Pacific Working Paper Series.

Raihan, S. (2010) 'Informal Sector in Bangladesh: Implication for Growth and Poverty', *Indian Journal of Labour Economics* 53(2): 251–265.

Raihan, S., Alberto Leema, Bazlul Haque Khondker, and Farazi Binti Ferdous (2017) '*Bangladesh Sectoral Growth* Diagnostic', The Asia Foundation

Raihan, S., Ifteakhar, K. and Angkur, M. (2016) 'Dynamics of Employment in the Urban Informal Sector in Bangladesh' in S. Raihan, *Structural Change and Dynamics of Labor Markets in Bangladesh: Studies on Labor and Employment* (53–61). Dhaka: South Asian Network on Economic Modeling.

Rashid, M. (2006) 'Rise of the Readymade Garments Industry in Bangladesh: Entrepreneurial Ingenuity or Public Policy'. World Bank Workshop on Governance and Development. Dhaka.

Rodrik, D. (1997) 'Has globalization gone too far?' *California Management Review* 39(3): 29–53.

Schoar, A. (2010) 'The Divide Between Subsistence and Transformational Entrepreneurship' in J. Lerner and S. Stern (eds), *Innovation Policy and the Economy (Vol. 10).* Chicago: University of Chicago Press.

Tybout, J. (2000) 'Manufacturing Firms in Developing Countries: How Well They Do, and Why?' *Journal of Economic Literature* 38(1): 11–44.

UNIDO – United Nations Industrial Development Organization (1974) *Subcontracting in Modernizing Economics*. New York: United Nations.

United Nations (2017) 'Global indicator framework for the Sustainable Development Goals and targets of the 2030 Agenda for Sustainable Development'. New York: United Nations.

Unni, J., Bali, N. and Vyas, J. (1999) *Subcontracted Women Workers in the Global Economy: Case of Garment Industry in India*. Ahmedabad: Gujarat Institute of Development Research and SEWA.

World Bank (2007) *Informal Employment in Argentina: Towards understanding its cause and consequences.* In Argentina: Poverty Assessment. Washington DC: World Bank.

World Bank (2010) Informal Sector Survey. Dhaka: World Bank.

World Bank (2013) Enterprise Survey. Retrieved 08 01 2017 from http://www.enterprisesurveys.org

World Bank (2017) Doing Business, *The World Bank* (http://www.doingbusiness.org)

Annex 1

Table A1: Variable descriptions

No	*Names*	*Description*
1.	Informal employment	Dependent Variable, 1 = informal employment; 0 otherwise
2.	Education	Highest class/grade passed by an individual
3.	Income	Income of an individual
4.	Sex	Gender of an individual, 1= male; 0 otherwise
5.	Age	Age of an individual
5.	Migration	Whether the individual migrated from rural to urban area or not. 1 = migrated; 0 otherwise
6.	Married	Marital status of an individual. = 1 if married, 0 otherwise
7.	DB _Dummy	=1 for 2015–16 and 0 for 2013
8.	Training	=1 if individual received any form of training; 0 otherwise
9.	Kids6	Having a son/daughter under 6 years old. = 1 if yes; 0 otherwise

Table 1.2 shows the microeconomic determinants of informal employment. Empirical analysis revealed that the regression results have expected sign what we observed from the literature. In this research paper, we will only give interpretation of logit model and we kept the probit model for reader's discretion. Given that all at their mean values (education = 5.85 years, income = 13242.47, sex = 0.76, age = 35.13 years, migration = 0.18, and married = 0.76) we see that a person with this profile has 95.43% chance of entering into informal jobs.

We also tested our model with different values of different factor variables. For example, an individual with a profile (12 [HSC] years of education, Tk15,000 income, male, did not migrate, 20 years old and unmarried) has a predicted probability of 0.86, i.e. he has 86% chance that he will accept informal employment. With the same profile, a female has 78.83% chance of accepting informal jobs, 7.27% less than a male. The probability changes dramatically for a male with the same background but a master's degree; with more educational attainment, the probability falls by 10.58%. Holding the other things at the same level as above but for a male of 30 years old, the predicted probability is 64.56% that he will accept informal jobs, and it is 51.81% at age 40. Another profile, let's say a male with a master's degree; the average income of his family members is Tk15,000, he is 30 years old, and he did not migrate; the predicted probability that he will enter into informal employment is 62.23%. For a female the probability is 49.82%. All these probability estimates are significant at 1% level.

In sum, the situation is that when a young person enters the labour market with fewer years of experience (and is coming from a low-income cluster), he or she has a high probability of entering

into informal employment. This probability is higher for individuals who have migrated, and is higher for men compared to women.

One caveat of this model is that there might be a problem of reverse causality; that is, lower income is a cause of a person accepting an informal job, and meanwhile it may be true that the person has a lower income because of the informal job. To tackle this problem, we employed an instrumental variable (IV) probit model and we considered a divisional dummy as an instrument for income. However, the endogeneity problem was not found to be significant.

Table A2: Determinants of informal employment
Dependent variable: informal employment

Variables	Marginal Effect	
	Probit	Logit
No education (base group)	--	--
Primary education	-0.0596***	-0.0608***
	(0.00187)	(0.00186)
Secondary education	-0.140***	-0.144***
	(0.00195)	(0.00194)
Higher secondary education	-0.245***	-0.242***
	(0.00401)	(0.00385)
Tertiary education	-0.296***	-0.285***
	(0.00401)	(0.00377)
Age	-0.00378***	-0.00386***
	(8.04e-05)	(7.99e-05)
Female	0.116***	0.126***
	(0.00421)	(0.00477)
Married	-0.0341***	-0.0347***
	(0.00268)	(0.00271)
Log (family income)	-0.00367***	-0.00489***
	(0.000458)	(0.000507)
Has children	-0.00292	-0.00316
	(0.00208)	(0.00210)
Rural	0.00609***	0.00612***
	(0.00173)	(0.00173)
Barisal (base group)	--	--
Chittagong	-0.0128***	-0.0156***
	(0.00331)	(0.00327)
Dhaka	-0.00349	-0.00554*
	(0.00310)	(0.00304)
Khulna	-0.0104***	-0.0117***
	(0.00339)	(0.00333)
Rajshahi	0.0108***	0.00960***
	(0.00335)	(0.00330)
Rangpur	0.0203***	0.0167***
	(0.00337)	(0.00334)
Sylhet	-0.0562***	-0.0560***
	(0.00401)	(0.00393)

Agriculture (base group)	--	--
Industry	-0.0779***	-0.0800***
	(0.00202)	(0.00200)
Service	-0.206***	-0.209***
	(0.00191)	(0.00187)
Rural–urban migration	0.0193***	0.0189***
	(0.00238)	(0.00235)
Obs.	169,931	169,931
Pseudo R^2	0.27	0.27

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

Table A3: Heckman Two Step Regression for wage equation for female
Dependent variable: log (monthly wage)

Variables	Heckit
Education	0.062***
	(0.0007)
Age	0.006***
	(0.0003)
Inverse Mill's Ratio	-0.005
	(0.010)
Constant	8.717***
	(0.019)
Observations	16,763
R-squared	0.303

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Note: In the wage equation for females, the Inverse Mill's ratio is statistically insignificant. As a result, excluding the Mill's variable will not affect our regression equation.

Annex 2

Table A4: Quantile regression of wage equation
Dependent variable: log of monthly wage

Variable/Quantile	Q = 10	Q = 20	Q = 30	Q = 40	Q = 50	Q = 60	Q = 70	Q = 80	Q = 90
Female	-0.000023	-0.013	-0.023	-.034**	-0.034***	-0.038***	-0.029***	-0.027**	-.009
	(.014)	(0.014)	(0.011)	(0.009)	(0.011)	(0.009)	(0.009)	(0.011)	(0.016)
Informal employment	-.024*	-.059***	-0.069	-0.085***	-0.082***	-0.087***	-0.087***	-0.089***	-0.076*
	(.013)	(0.009)	(0.008)	(0.007)	(0.006)	(0.007)	(0.006)	(0.008)	(0.011)
Informal employment * female	-0.13***	-.090***	-0.069	-0.058***	-.058***	-.052***	-0.046***	-0.037***	-0.032***
	(.015)	(0.015)	(0.012)	(0.010)	(0.011)	(0.009)	(0.009)	(0.012)	(0.017)
Others controls included?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	74,951	74,951	74,951	74,951	74,951	74,951	74,951	74,951	74,951
Pseudo R^2	0.19	0.20	0.22	0.24	0.27	0.30	0.33	0.36	0.38

Source: Authors' calculation using BBS (2017). Note for Table 2.1: Robust standard error in parenthesis, *** p<0.01, ** p<0.05, * p<0.1