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Does Human Capital Endowment Correspond to Employment Status of the Migrant Informal Workers in Khulna City, Bangladesh?

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Abstract: Inadequate human capital is one of the common characteristics of the migrant dominated informal sector in developing economies. The objective of this study is to measure employment vulnerability of informal workers in Khulna city, Bangladesh. In doing so, this study tries to classify the informal workers in Khulna city, Bangladesh using a two-step cluster analysis based on homogeneous human capitals. The human capitals include education, age, experience, training, skills, communication and decision making power. Data on these attributes is collected through questionnaire surveys from 150 migrant informal workers. Thereafter, the human capital deprivation score has been calculated in order to check the extent of employment vulnerability of those classified groups. The results show that the migrant traders and construction workers are vulnerable whereas service providers, manufacturing and transportation workers are extremely vulnerable. The relative economic wellbeing of migrant informal workers depends on job availability, payment process and demand.

Keywords: Growing economy; urban migration; informal workers; economic wellbeing.

1. Introduction

Migrant dominated informal sector is one of the major concerns for urban economists and policy makers. This sector plays an important role in the urban employment of developing economies. For instance, in 2016, 87.8% of the total employment in the South Asian region was informal (ILO, 2018). Bangladesh represents over 13 percent of the total South Asian labor force, having 87% informal employment for its total labor force (World Bank, 2004; Chen and Doane, 2008). Despite the huge contribution in employment, the informal sector is regarded as inefficient due to its low productivity and job insecurity. According to ILO (2004), "*informality is itself a trap for unskilled workers, perpetuating a vicious circle of limited human capital and low pay*" (Garcia, 2013). Productive labor force is therefore essential for promoting sustainable economic growth and eliminating poverty and inequality (Sachs *et al.* 2019). Different human capitals like skill, education, experience, knowledge, and training help to increase the productivity of laborers. Additionally, the human capital increases their chances of being

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hired by the formal job market. Labor employment further depends on demand and supply of labor. For instance, when supply exceeds demand, qualified people find their employment only in some segments of the formal economic sectors and the rest are employed by the informal sector. Employment of the skilled labor in the low-paid precarious informal sector indicates the shortage of demand (Palmer, 2017).

In most developing countries, the informal sector is booming by absorbing the excess supply of unskilled laborers resulting from the massive rural-urban migration. For instance, two-third of the total job seeking urban migrants in Bangladesh are rural to urban migrants (Afsar, 2003). This growing supply of laborers surpasses the threshold capacity of the already stretched urban employment of the country. Consequently, a substantial part of them with low human capital (92% migrants who are unemployed in the origin) join the informal sector, and create their own employment opportunity to the extent that their human capital permits (Kundu and Sarangi, 2007; Bezu and Holden, 2008). From these two confronting points of views (demand shortage and excess supply), labor market policies and programs focusing on human capital development might not be successful unless the fact behind over-supply or shortage of demand in the labor market is unveiled.

Against this background, the objective of this study is to classify the migrant informal workers in Khulna city, Bangladesh based on their human capital endowment. In doing so, a human capital deprivation score is developed to trace their extent of employment vulnerability. Khulna city, located in the south-western part of Bangladesh, is considered one of the hubs of informal livelihoods for a massive number of footloose migrants (90 % of total population in Khulna city are informal labor force) (Asian Development Bank, 2010; Sikder *et al.* 2015). There are plenty of studies about the informal sector in south Asia. However, none of the literature has discussed the relationship between the human capital endowment and job attainment of the informal workers in south-western coastal Bangladesh. Besides, implication of human capital deprivation score calculation method in this context (inspired by multi-dimensional poverty index (MPI)) is also rare in the literature. This study is, therefore, expected to contribute to the dearth of literature on human capital of informal workers by highlighting the productivity of the migrant informal workers of the south-western Bangladesh. To the best of our knowledge, this is the first ever study that classifies informal workers based on their human capital in Bangladesh.

Following the above background, the second section of the paper reviews literature on human capital of the informal workers. The third section is methodology. The fourth section is analysis followed by discussion in the fifth section. The sixth section is concluding remarks.

2. Human Capital of Informal Workers

The informal sector first appeared in the economic development literature in the early 1970s through the World Employment Programme organized by the International Labour Organization (Bangasser 2000). Since then, different authors have defined and classified the informal sector from different perspectives (Chi *et al.* 2010; Charmes, 2012; Meghir *et al.* 2015). However, Hart's informal sector characterization and workers' classification are still popular among the researchers. He classified the workers of this sector as: (1) wage earners; and (2) self-employed. He also mentioned the following activities as informal: (1) tailors, farming, shoe makers, artisans and so forth; (2) housing and road construction work; (3) petty traders, street hawkers, food caterers and other small scale entrepreneurs; (4) barbers, shoe-shiners and other services; (5) beggars; and (6) illegal

activities, e.g., drug pushing. On the contrary, the formal sector activities include: (1) wage earners in the public sector; and (2) wage earners in the private sector on permanent contracts (Hart, 1973; Shonchoy *et al.* 2014). However, this classification only gives an idea about two broad and general categories of informal workers and their activities. At the same time, it fails to specify the heterogeneity of informal workers. Thereafter, incorporating the heterogeneity issue, Amin (2002) provided a meaningful classification of the informal sector as well as informal workers for the Asian cities. His classification of the Asian informal sector comprises several perspectives that are mentioned in table 1.

Table 1: Informal sector classification

Employment status	Employers, self-employed, own-account workers, wage workers, unpaid family labour, and price rate workers (Hussmanns, 2004)
Industrial classification	Trade, service, manufacturing, construction, and transportation
Location	Mobile, Semi-mobile, and fixed
Size based classification	1-person units (own-account worked) 2-4 person units (micro intersperses) 5-9 person units (small-scale enterprises)
Age group	<15 years (Child labor) 15-24 years (youth) 25-45 years (prime working) 45+ years (Higher age)
Spatial standpoint	Rural and urban informal sector
Urban spatial structure standpoint	Informal sector in the central Business district (CBD) and informal sector in the suburban areas

From the classification mentioned in table 1, it is evident that, similar to the formal sector employment, there are also some distinct categories of employment in the informal sector. However, the placement of an informal labor in the job market depends on the human capital endowment of that labor. Several literature cover a wide variety of human capitals required for employment such as, social attributes (housing and health) and personal attributes (skills, education, age, training, experience, communication, decision-making skills and so forth) (see for example, Suharto, 2002; Adams *et al.* 2013). However, this review focuses on the personal attributes of laborers that have emerged repeatedly throughout the scholarly literature concerning the quality of workforce (Suharto 2002; Adams *et al.* 2013). Income, decision making and communication power have also been included in the analysis. This is because income is essential to measure the economic wellbeing of the informal workers, while decision making and communication power help to avail new opportunities, customers and employers.

Among the personal traits, education is the first and foremost necessary attribute to obtain gainful, productive and remunerative employment. However, workers in the informal sector are usually characterized by low levels of formal education and limited numeracy as compared to the formal workers, forcing them to work in low paid industries (Kanna and Papola, 2007). In China, it is found that less educated are more likely to join the wage-earning sectors (Meng, 2001). In Indonesia, the highest level of education was found among the small enterprise holders. A 12 years of schooling was found among good sellers, and a nine and six years of schooling were common among the service providers and food traders, respectively (Suharto, 2002). Level of education of informal workers also increases the tendency to take part in training. A study in Tanzania found that people completing primary education have 40% more likelihood to join in any

training than their un-educated counterparts (Adams *et al.* 2003). Furthermore, increasing levels of education and training help to gain different skills to pursue better job opportunities. Informal apprenticeship, on-job training, vocational training and so forth account for almost 86% of total training in the informal sector in Tanzania (Adams *et al.* 2013). Whereas, apprenticeship is an important source of training for the informal workers in Kenya. Informal training increases the probability of being an informal worker by more than 30% (Mincer and Higuchi, 1988).

Age and experience increase trainability, responsibility and job performance potential (Banarjee, 1983). It is evident that in the initial years in the labor market, young people mainly join informal jobs; they tend to move to formal ones with experience. For example, in China, it is found that an extra month of city work experience increases an individual's chances of being self-employed as both the young and old join informal jobs (Meng, 2001). Evidently, the age-informality relationship curve is likely to be U-shaped (Hazans, 2011). The young and old workers are usually less productive compared to middle-aged groups in the informal sector. A major chunk of child labor is also found to be engaged in informal employment. Age-wise distribution of workforce in Ukraine shows that a majority of formal workers belong to the 36-60 year age group against the 15-35 years age group of informal workers (Lehmann and Pignatti, 2008). The likelihood of a young worker in Kenya being in the informal sector was higher than that of older workers (Mincer and Higuchi 1988).

Informal workers face deprivation in the workplaces due to their limited decision-making power and extremely low wages compared to the formal workers (Chen *et al.* 2004; Kabeer, 2005 in Ramadi, 2015). For instance, in India, 85% of informal wage earners are in the rural area and 57% of such workers in urban areas receive wages below the nationally recommended minimum wage (Mukherjee, 2008). The earning of these workers depends on factors such as employment status (casual, salaried and self-employed or piece-rate worker), working hours, seasonality, communication and decision making power, and so forth.

Finally, it can be concluded that human capital endowment of informal laborers is far lower than their formal counterparts. It is also evident from the above discussion that earnings in the informal labor market also depend on their human capital endowment, where education, training and skills determine productivity, age and experience increase job performance potentiality, supportive transferable skills such as communication and decision making power to grab the opportunity. Finally, income attributes help to measure the combined result of all of these attributes through economic wellbeing. The ILO (2004) further classified education, training and skills associated with different occupations as technical and vocational skills; experience, honesty, integrity, work ethics, etc. as personal or professional skills; and problem solving, creativity, communication skills, entrepreneurial ability and so forth as transferable skills (Palmer, 2017). Therefore, in the line with the ILO (2004), all of these personal attributes can be classified into three broad categories: 1) technical and vocational skill, i.e., education, skill set and training; 2) personal skills/job performance potentiality, i.e., age and experience; and 3) transferable skill, i.e., communication and decision making power.

3. Methodology

3.1 Data collection Method

The respondents were selected from several slums in Khulna city using snowball sampling method (figure 1).The slums are *Bihari coloni, Boroitola, Kodomtola, Sornali*

coloni and Khora bosti. These slums were selected because of their accommodation of a large number of migrant informal workers, and ease of access. Afterwards, quantitative data was collected through a total of 150 random questionnaire surveys on different human capital attributes and some other attributes such as origin, occupation and reason of migration. The human capital attributes include education, age, experience, training, present and past skills, income, communication and decision-making power.

Initially, a pilot survey was conducted in the slums to capture all the possible answers and check the understanding capacity of the respondents about the questions. The questionnaire was modified thereafter to incorporate different aspects of human capital.

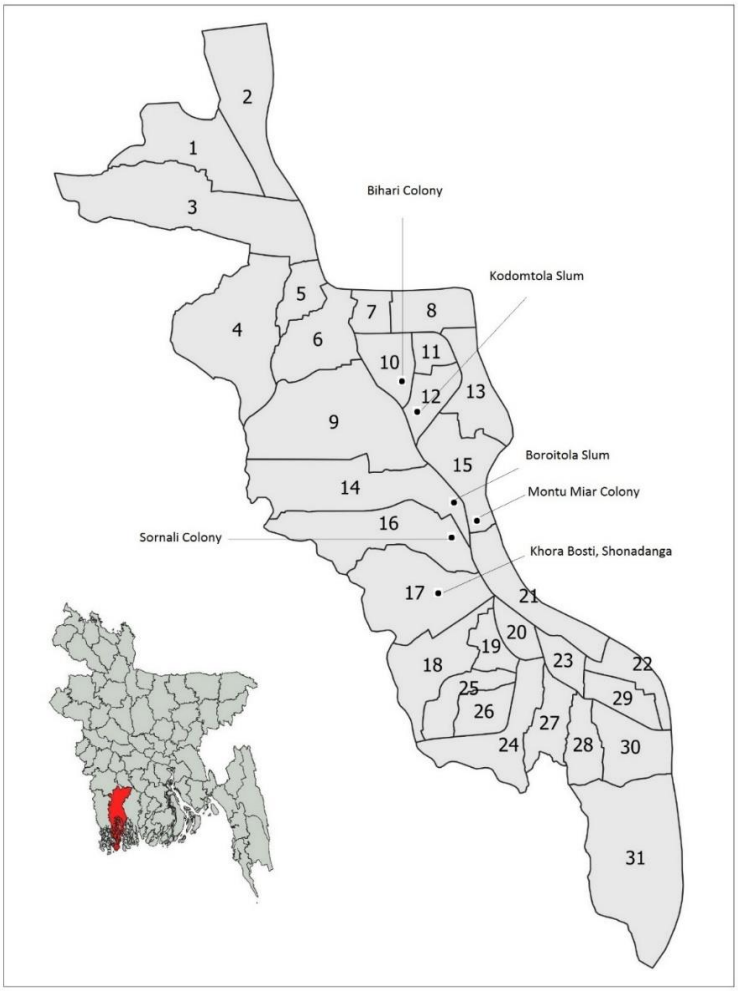

Figure 1: Location of the surveyed slums of Khulna city

3.2 Analysis Method

A two-step cluster analysis and human capital deprivation score were estimated. In the two-step cluster analysis, the human capitals of the migrant informal workers were classified based on their similarity. Thereafter, human capital deprivation score was calculated in order to check the extent of employment vulnerability of each group. The employment vulnerability of the migrant informal workers is expressed as human capital deprivation score. This individual human capital deprivation score is calculated as the

sum of weighted deprivation value of each human capital indicator (equation 1). This deprivation score is generated following the deprivation score calculation process of the multidimensional poverty index (MPI) stated in the Human Development Report 2013. Finally, the group wise human capital deprivation is expressed as an average of total weighted values (equation 2).

Individual human capital deprivation score (IHDS):

$$\sum w_1 v_1 + w_2 v_2 + w_3 v_3 + \cdots \ldots\ldots\ldots\ldots\ldots\ldots w_n v_n$$

……(1)

Where, w = indicator weight & v = value

Group human capital deprivation score (GHDS)

$$= \frac{\sum_{i=1}^{i=n} IHDS\,(i)}{total\ number\ of\ workers} \ldots\ldots\ldots\ldots..(2)$$

Where, deprivation value in each indicator has been assigned as 1 and non-deprivation value as 0. The value of each indicator is given in (appendix table 1).

All the indicators have been assigned under three equally weighted broad dimensions (out of 100). The dimension weights are equally distributed among their respective indicators as in table 2. The group vulnerability has been determined based on a cut-off point (33.3). Finally, the vulnerability scale is determined as follows: secure group→ GHDS<33.3, vulnerable group→33.4≤GHDS ≤ 66.6 and extremely vulnerable group → GHDS≥ 66.6.

Table 2: Calculation process on hypothetical data

Respondent	**1**	**2**	**3**	**4**	**Weight**
	Yes=0, No=1				
Technical and Vocational Skills					**33.3**
Has any worker completed primary education?	0	1	1	0	11.1
Has any worker previous training?	1	1	0	0	11.1
Has any worker previous skill in different employment sector?	0	0	0	1	11.1
Personal Skills/Performance Potentiality					**33.3**
Is the worker (15-60) year old?	1	0	1	1	16.5
Has the worker more than 10 years city work experience?	1	0	0	1	16.5
Transferable Skills[1]					**33.3**
Has the worker moderate /satisfactory decision making power?	0	1	1	0	16.5
Has the worker moderate/satisfactory communication power?	1	0	0	1	16.5

[1] This dimensions are subjective and difficult to assess individual decision making and communication power with a single question. Therefore, a mind tool has been used to assess these dimensions where an individual's decision making and communication power have been assessed using 10 questions containing five answer scores each. After adding all the scores, their level of decision making and communication skill ability has been decided based on the total scores. The process is explained in table 2 (see also appendix table 3).

Individual Human Capital Deprivation Score (IHDS)	60.6	55.2	44.1	60.6	100%
Group Human Capital Deprivation Score (GHDS)	$\frac{60.6+55.2+44.1+60.6}{4}$ = 55.13				
The vulnerability scale: Secure group = GHDS<33.3, Vulnerable group = GHDS (33.4-66.6) and Extremely Vulnerable group = GHDS (66.6-100)	**Vulnerable group**				

4. Analysis And Finding

4.1 Migration flow in Khulna city

Khulna is a divisional (first tier administrative unit) city, and is surrounded by Satkhira, Bagherhat, Barisal and Jessore districts (second tier administrative unit). The study shows that the surrounding coastal districts of Khulna are the origin of more than two-third of the migrant workers. For instance, migrants come from Bagherhat and Barishal district equally (28% separately), 14% are from Satkhira and only 7% are from several sub-districts (upazillas) of Khulna (Koira, Paikgacha, Terokhoda, Dogholiaand). The remaining 30% come from several parts of the country such as Faridpur, Jessore, Gpalgong, Dhaka, Mymensing, Chittagong and Noakhali districts (figure 2).

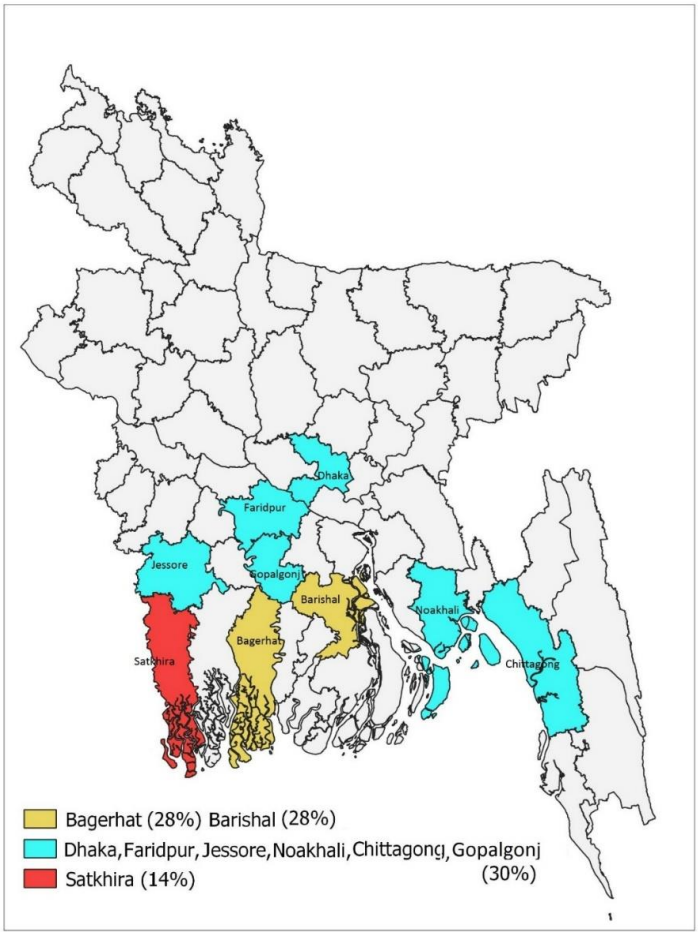

Figure 2: Migration flow from different districts to Khulna

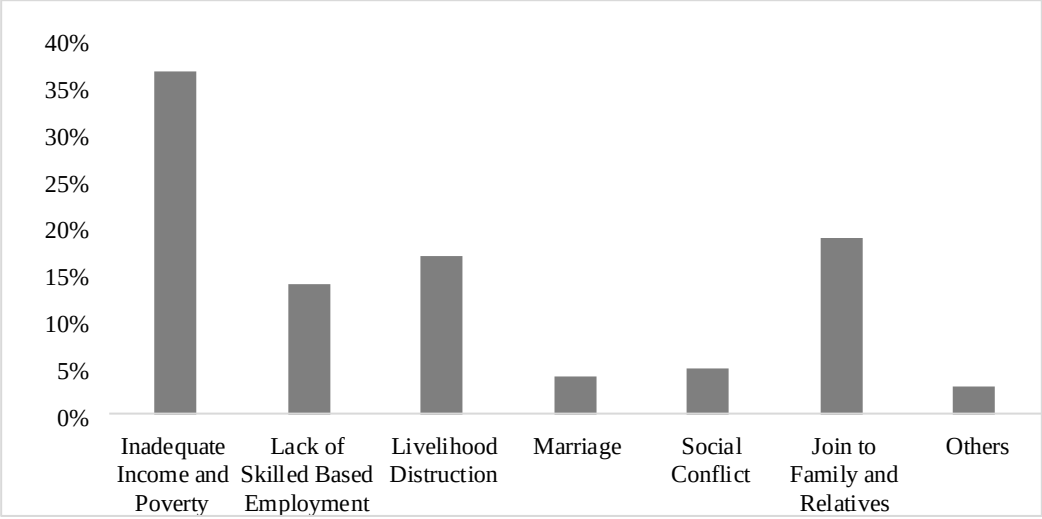

Figure 3: Reasons of migration

4.2 Reasons of Migration

Several push factors are responsible for migration of the informal workers to Khulna city. For example, more than 50% of the migrants indicate unemployment and poverty issues as reasons for their migration decision. More specifically, about 37% of the migrants faced inadequate income or poverty at their origin and 14% lack of skilled based employment. About 29% of the respondents marked several social issues for their migration to Khulna city. Among these, 19% were forced to migrate with their family. Different social conflicts pushed 5% to migrate to the city and another 4% migrated due to marriage, loan, seasonal unemployment and other social issues (figure 3).

The rest of the 17% respondents identified livelihood destruction as a factor for their displacement. More specifically, 13% of the livelihood destruction happened by natural disaster while 4% by police, especially those who used to run petty businesses like grocery and tea stalls on footpaths at their origin (figure 3).

4.3 Classification of the Migrant Informal Workers in Khulna City

Using a two-step cluster analysis, five distinct groups/clusters of migrant informal workers were found in Khulna city: 1) traders, 2) service providers, 3) manufacturing workers, 4) construction workers and 5) transportation workers. The cluster quality was found fair (figure 4), which suggests that the cluster analysis was fairly appropriate for the data. Transportation sector is the highest (26%) and trading sector is the lowest (16%) sector of the migrants' informal employment in Khulna city (table 3). From the point of view of the human capital characteristics of the five groups, it can be generalized that informal migrant workers in Khulna city are mainly composed of physically able people. They all have on an average very limited education (none of the groups has completed primary level or 5 years of schooling), and most

of them have some sorts of previous skills in different informal sectors. Almost all groups have moderately improved decision making and communication power except group 3, which mostly consists of service providers who are the lowest income earners (table 3).

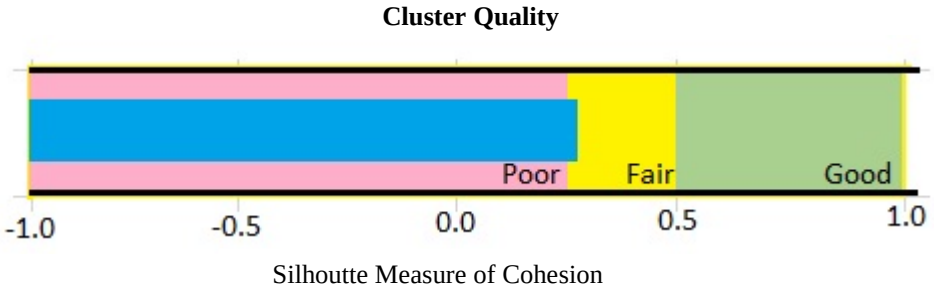

Figure 4: Model summery of the two-step cluster analysis

Table 3: Migrant informal worker classification based on human capital
(Customized from the output of the two-step cluster analysis)

Group	Size (%)	Current Skill	Age	Education	Income (in ,000 BDT)*	Experience	Training (%)	Previous Skills (%)	Decision Making Power	Communication Power	Employment Vulnerability**
G-1	16	Trading	37	3	11	17	30	18.75	Satisfactory	Moderately Improved	vulnerable
G-2	14	Construction	35	3-4	10	16	54	31.25	Satisfactory	Moderately Improved	
G-3	20	Service Provider	45	2-3	6	15	16	11.75	Poor	Destructive	Extremely Vulnerable
G-4	20	Manufacturing	38	3	8	14	34	10.75	Satisfactory	Moderately Improved	
G-5	26	Transportation	35	3-4	9	13	16	10.6	Satisfactory	Moderately Improved	

***$1 USD = BDT 84**
******This employment vulnerability has been calculated using human capital deprivation score

4.4 Employment Vulnerability of the Informal Workers

Migrants' job extension ladder depends on their human capitals (Banarjee, 1983; Hart, 1973; Adams *et al.* 2013). Therefore, based on their human capital deprivation score, vulnerable and extremely vulnerable groups of informal workers are estimated. Notably, no secure group of informal workers are found in Khulna city.

In this study, service providers (GHVS=83%), transportation (GHVS=78%) and manufacturing workers (GHVS=77%) are found to be extremely vulnerable groups of informal workers. Whereas, traders (GHVS=58%) and construction workers (GHVS=46%) are categorized as vulnerable workers (figure 5). Human capital characteristics of the vulnerable groups consist of middle-aged workers with less than five years of schooling. About 30-54% of them have on job training and 18-37% have previous skills in different informal sectors, and their decision making and communication powers are moderate (table 3).

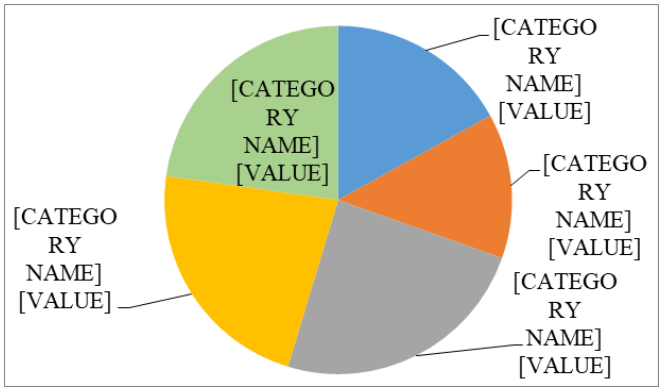

Figure 5: Employment status wise human capital deprivation score
Note: Scale: Secure group= <33.3%; vulnerable group= G.H.V.S (33.4%-66.6%); extremely vulnerable group = GHVS (66.6 %-100%)

On the other hand, all the extremely vulnerable workers are on an average 49 years of age, and they all have less than five years of schooling. 16-30% of them have on job training and almost 11% are skilled workers. Among the extremely vulnerable workers, manufacturing and transportation workers have satisfactory and moderately improved decision-making and communication power whereas the service providers are poor both in decision making and communication skills (table-3).

4.5 Economic wellbeing and employment vulnerability

Income and human capital discrepancy among different vulnerable informal worker groups are evident in Khulna city. For instance, among the vulnerable group of workers, construction workers earn (10,000 BDT/month or 117$/month) less than the traders (11,000 BDT/month or 129$/month) in spite of having more percentage of on-job training and previous job skills (table 3, column 6 and 12). Their income depends on the job availability and demand with varying working days between 15 and 25 days/month. Therefore, the informal construction workers earn less than others.

Among the extremely vulnerable groups, transportation workers earn (9,000BDT/month or 106$/month) more in spite of having less human capital (experience, training tendency and previous skill set) than the manufacturing (8,000 BDT/month or 94$/month) and service providers (6,000 BDT/month or 70$/ month) (table 3). This is due to, firstly, transportation workers have flexible working hours along with having high demand. Secondly, manufacturing workers earn less because of their irregular and partial payment system as they rarely receive full payment in every month/week. Finally, the service provider group is mainly dominated by female domestic workers and their working hours

are less than others and they receive lower wages than the nationally recommended wage. Furthermore, in terms of present skills/employment status (table 3, column 3), it is found that retailers/ traders are the highest average income group whereas service providers are the least income earning group (table 3, column 6). The values of income in table 3 suggests that their average income and present employment status follow a hierarchical relationship. In other words, it can be explained from table 3 (column 6) that almost every 1000-2000 BDT (11-23$) increase in income increases the chance of being in the upper level monthly average income in the following hierarchy:
Retailer < Construction worker < transportation worker < manufacturing worker < service provider 11000 BDT (129$) < 10000BDT (117$) < 9000 BDT (106$) < 8000 BDT (94$) < 6000 BDT (70$). The hierarchical relationship in income and present employment status/skill indicates a distinctive income difference in different informal sectors in Khulna city.

5. Discussion

Most of the migrant informal workers in Khulna city have come from the surrounding coastal areas. According to Cazzuffi (2016), place of origin and neighbourhood have an impact on a person's human capital formation, earnings and occupation depending on the accessibility to education, health and income opportunity. The huge influx of low income migrant informal workers in Khulna city signals the spatial inequality of this region.
According to Bernzen *et al.* (2019), climate induced displacement plays an important role for the migration to cities in Bangladesh. However, this research finds that despite being a coastal city, most of the migrant informal workers in Khulna city have come because of unemployment and poverty at their origin rather than natural disasters. Because of severe cyclones "Aila" and "Sidr" in the coastal area in 2007 and 2009, respectively, the unemployment and poverty might be caused either by spatial inequality or indirectly by the climatic extremes. Therefore, further exploration is required to find out the exact driver of their migration.
It is evident that most of the informal occupations require limited human and financial capital except the trading sector. Trading sector requires financial capital along with numeracy skills. But this is the lowest preferred job among the poor migrants. On the other hand, the other job sectors such as the transportation sector (migrant informal workers drive the rickshaw and battery-bike that are hired from the local garage on daily or weekly basis), manufacturing, construction, and service providing sectors only require physical labor. According to Nord (1998), emigrants choose their job destination that matches their skills. In line with this argument, it can be concluded that migrant informal workers join this low-skilled informal sector in Khulna city due to their human capital deficiency.
According to Bangladesh General Economic Division (2018), 15% of the labour force in Bangladesh is engaged in the formal sector. Half of the formal sector employment requires less than secondary education and a larger part of the job requires university graduation. Therefore, the informal workers in Khulna city, Bangladesh are not even capable of competing in the formal labor market due to their low human capital endowment.
According to Weaver (2012), human capitals have a positive impact on the economic wellbeing of a person. However, the economic wellbeing and human capital relationship in the urban informal sector in Khulna city is not that straight forward. Some groups of

workers are earning less than their counterparts due to lack of job availability. Despite having lower human capital, transportation workers are earning more than others due to high demand. Therefore, along with human capital improvement, policy makers should also consider the demand side factors like employment opportunity and decent working conditions.

6. Conclusion

Human capital plays an important role in increasing labor productivity. In a developing economy like Bangladesh, where migrant informal workers have already occupied a large share of the total labor force, the human capital endowment as well as labor productivity in the informal sector needs to be explored. The findings of this research show that there are vulnerable and extremely vulnerable groups of informal workers in Khulna city, Bangladesh. The vulnerable group includes traders and construction workers, whereas the extremely vulnerable group consists of transportation workers, manufacturing workers and service providers. The employment vulnerability of these groups is severe in a way that they are not able to compete in the formal labor market. Economic wellbeing of the migrant informal workers in Khulna city not only depends on their human capital endowment but also on the job availability. Therefore, policy makers should consider both labor demand and supply-side issues to reduce employment vulnerability of the migrant informal workers in Khulna city.

Majority of migrant informal workers come to this coastal city from surrounding coastal districts pushed by poverty and other unemployment, and are not climate migrants. These unemployment and poverty issues indicate the spatial inequality of the south-western region. At the same time, further research is required to find out the link between their poverty and climatic extremes.

There are a few limitations of this study that need to be addressed for better understanding of the state of informal employment in Khulna city. Firstly, this study only covers the migrant informal workers – thus, the findings may vary for the non-migrants. Secondly, limited data (150 questionnaire survey) is a major drawback. Therefore, inclusion of a large data set can provide better understanding about the dynamics of human capital of informal workers in Khulna city, Bangladesh.

Declarations

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Conflicts of interest/Competing interests: The Authors declare no conflict of interests. All information sources are cited and referenced accordingly.

Availability of data and material: Not applicable

Code availability: Not applicable

Conflict of Interests : There is no conflict of interest to report.

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