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LOCATION THEORY AND REGIONAL DEVELOPMENT: AN EXPLORATION IN INDIA

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Abstract: In Eastern India, natural resources and a cheap labour force are abundant, and infrastructural facilities are moderate. Any importance on small-scale production units, which often use labour-intensive techniques in artistic domains, may thus create high market demand for products. Eventual growth of these units may also call for regional development, which the present study attempts to inspect for the State of West Bengal, India. Although this study goes with the *cluster approach* of regional development, it goes beyond the traditional analysis which only focuses on the production process; rather examines why decent work practices are fundamental and how the workplace, together with home front, community and society, is connected to workers' objective and subjective well-being, rise in productivity, and regional development in the end. The study blends early Location Theories with empirics to explain regional development, and thereby uses primary data, conducting Focus Group Discussions and interviews of the targeted population, employing simple statistical tools and a Likert scale to form an index. To analyse the growth potential and persisting threats of the production units, a *SWOT* analysis was also undertaken. Since this study analyses the progression from manufacturing industry-oriented intrusion to a total regional development with government support and people's participation through a political economy of development approach, the perception magnifies *sustainable growth*.

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I. INTRODUCTION

Regional development is recognised as a means of reducing regional inconsistencies through the support of economic activities. The Location Economics, and thereby the theory of Growth Pole, significantly contributes to this area of research. A Growth Pole refers to a geographic concentration of interconnected institutions in a particular location. Comprehensive regional planning links these urban centres with their peripheries to ensure the advantages of robust growth to every individual residing within the Growth Pole area. French economist Francois Perroux (1949) introduced the concept of Growth Pole, where the theory illustrates that economic development or growth is not even over an entire region; rather, it takes place around an explicit pole. These poles are characterised by core industries and by some linked industries around them that are developed mainly through direct and/or indirect effects. These direct and indirect effects support the development and expansion of economic activities by creating demand for their products. Growth Poles are at once a theory of development strategy or policy application.

While coming to India, Mehrotra et al. (2014) revealed a very high informal workforce in almost every type of economic activity in 2004. The Common Minimum Programme (CMP) of the United Progressive Alliance (UPA) Government, therefore, recognised the requirements to enhance the welfare of people in the unorganised sector. As a follow-up, the Government of India constituted the National Commission for Enterprises in the Unorganised Sector (NCEUS) in 2004. In the 11th 5-Year Plan (2006), the Planning Commission declared that the *cluster approach* could be a help in this direction. The scope for adaptation of the Growth Pole Strategy in India articulated selecting a region for development, which must have at least one important sector with the potential to push forward the economic growth in that region. Growth Pole was best put forward in the Finance Minister's Budget Speech of 2005-2006.

Based on the objectives and guidelines of NCEUS (2007), the Growth Pole was also defined as the pilot projects from different parts of the country

to identify the number of multi-product, artisan, handloom and handicraft clusters that had the potential to evolve and flourish. NCEUS, in 2008, declared the six pilot project poles, where one of them was Panchla and adjoining areas of Domjur Blocks in Howrah District of the state of West Bengal, which are famous for gems & jewellery, and zari & embroidery works. It was expected that an attempt for regional development utilising the theory of Growth Pole could be beneficial for the confined people in that unorganised sector. New job opportunities would create employment for locals, and thereby they would get rid of the miserable economic conditions they were facing due to the closure of several production units, due to the deceleration of industries in the Eastern regions after independence. Eventually, reduction of economic and social inequalities would help well-being of commons, and thereby, several intended Sustainable Development Goals (SDG) would be achieved; especially SDGs 1, 3, 8, 9, 10 and 11, which highlight end of poverty, healthy life and well-being, decent work and economic growth, inclusive and sustainable industrialisation, reducing inequality, making human settlements safe, resilient and sustainable, respectively.

Saha (2016) once discussed the growth of informal industries and their impacts on regional development in the same study region; however, the objective and subjective well-being of the workers were not examined. The present study considers production and supply sides of the informal industries, alongside workers' well-being through a holistic approach and future prospects of the region with theoretical arguments. Therefore, this study is expected to contribute to the existing literature since no such extended research work has been undertaken yet, though the future of these industries is very promising as once thought. Moreover, the study attempts to inspect the reasons for inadequate progress of the study region, and the way outs for *inclusive growth,* familiarising a political economy of development approach. Therefore, the precise objectives of the study are to examine the production process, supply chain and market promotion strategies of gems & jewellery and zari & embroidery industries in the study region, socio-economic conditions of the commons that are associated with these industries, and their well-being, both objective and subjective, theoretical support for treating the study region as a Growth Pole, and recent trends of gems & jewellery and zari & embroidery works, future scopes considering the present challenges.

II. METHODOLOGY

India not only possesses a large domestic market for jewellery and embroidery works, but also has an international recognition for such works. Domjur and Panchla Blocks in Howrah District of the State of West Bengal in India are famous for such works, and hence this study is restricted to this region. The study uses primary data for analysis, for which a field survey was conducted. Data were collected through a well-designed interview schedule after having Focus Group Discussions (FGD) in the study area for the intended population. The respondents were the owners of the targeted production units and a sample of workers engaged in those units.

The study used a purposive sampling method for the selection of two Blocks in West Bengal (as per research objectives). However, the quota sampling method was used in the selection of production units. From each Block, 15 production units were chosen at the convenience. In Domjur Block, the average number of workers in a production unit was 35, while this number was 32 in Panchla Block. To get the labour profile from each production unit in both the Blocks, almost one-third of the workers were selected through a random sampling method. Although the response rate was 100 per cent, the study considers 320 valid data points for further analysis among 335 workers. The sample profile is depicted in Table 1.

Table 1: Sample profile

Blocks	*Number of production units in each Block for collecting a sample*	*Average workers per production unit*	*Sample collected*
Domjur	15	35	175 (170)
Panchla	15	32	160 (150)

Note: Figures in the parentheses represent valid data points
Source: Prepared by the author

The objective and subjective well-being of the workers were studied with the help of simple statistical tools and using a Likert scale to form an index. Diagrammatic representations have been made defining workers' well-being through an all-inclusive approach. The relationship among well-being, rise in productivity and regional development is illustrated, to protect the interests of marginalised communities and the environment. To analyse the growth

potential and persisting threats of the production units, *SWOT (Strengths-Weaknesses-Opportunities-Threats)* analysis was undertaken.

III. RESULTS AND DISCUSSION

1. Production process, supply chain and marketing

The art of jewellery making has an ancient history. The early civilisations used to craft jewellery for their personal interests. Nowadays, the gems & jewellery industry is one of the fastest-growing industries in the Indian economy. It uses a typically labour-intensive technique in the production process, and often the production is export-oriented. West Bengal has a long history of producing delicate, hand-crafted gold jewellery, and the State is home to the talented goldsmiths. In recent times, Domjur Block in West Bengal has appeared as a separate location for well-known gold or gold-plated jewelleries with diamond setting, and brass metal jewelleries, through market linkage with Bowbazar in Kolkata, India. The Production orders mostly come from the contractors of Bowbazar, and the final products of Domjur workers get a finishing touch by the skilled workers of Bowbazar, who possess expertise in sophisticated machine operations. Several reputed branded jewellery companies also place orders on a time-to-time basis, through organising meetings with the local manufacturers of Domjur. After the settlement of contracts, the owners of the small informal production units are provided with sufficient amounts of precious inputs like raw gold, designs, etc., by the contractors. Artisans in Domjur use precious and semi-precious stones and gems, which were initially imported from Tiruchirappalli in India, but now these materials come from China because of their low costs. Although the stones and gems of China are cheap, the quality is poor.

Finally, the finished products get exported to several Indian States (like Delhi, Maharashtra, and the entire Southern region, especially Tamil Nadu) and abroad (like China and the Middle East countries). Domjur manufactures earn a profit of up to 30 per cent; however, the contractors of Kolkata sell these products at very high prices in the outside market, charging a high markup on the manufacturing cost. In the national market, when the prices of these products double, in the international market, the product prices sometimes get three times higher than in the national market. After the last pandemic (COVID-19), although digital transactions have been introduced in payments,

the workers are mostly paid in cash. Thus, the informal work-sites in Domjur function as an ancillary cluster of the formal sector in Bowbazar, and retail selling does not take place largely on their own.

There were no formal production units of the gems & jewellery industry initially in Domjur. However, in the later phase, the Government of West Bengal (WBIDC, West Bengal Industrial Development Corporation Limited) took initiative and invited renowned gems and jewellery companies to set up production houses at Ankurhati, near Domjur town, which is known as Ankurhati Gems & Jewellery Park. All the production units are registered and well tracked by the government. Labourers are skilled and bound by written contracts. The Hub's future seems promising because of its strategic location within the Eastern region's premier gold industrial cluster, legacy of Calcutta jewellery, presence of skilled artisans, and huge demand from domestic and foreign markets. It is also expected that the Hub would provide a number of social and economic advantages to the local people who reside in the neighbourhoods.

The style of zari & zardozi embroidery came to India from central Asia in the 12th century, prospered during the 17th century, and was patronised by the affluent classes for the purposes of decoration and their outfits. Later on, a loss of royal patronage and industrialisation led to the decline of zari & zardozi works. However, in recent times, this work is gaining momentum and is much-loved on different occasions like weddings. Zari & zardozi embroidery is the dazzling and heavily encrusted gold and silver, or golden thread work. Subsequently, these threads are woven into fabrics (mainly made up of silk) to generate intricate patterns and to give a royal look.

Owners of the zari & zardozi embroidery producing units in Panchla Block get work contracts from the Burrabazar wholesalers in Kolkata. Usually, the producers purchase several precious/semi-precious stones and gems from China and South India, whereas materials like zari, metallic wire, needles and thread come from Surat in India. The wholesalers of Burrabazar offer white fabric and silk, even sometimes computerised designs consistent with market demand, to the producers. The artisans also show their unique designs on paper to the wholesalers. In this production process, the producers earn 30-40 per cent profit for their final products (like Saree, Lehenga, Salwar suit, etc.). After COVID-19, digital transactions have been introduced for making payments.

Burrabazar wholesalers supply the final products to many places within Kolkata (like Gariahat, Rammandir, Park Street markets, etc), and also outside the State (in Gujarat, Rajasthan, Delhi, Maharashtra and South India). Even the wholesalers export these products abroad, such as the United States, Canada, the United Kingdom, and Dubai. In the national market, when the prices of these products double or triple, in the international market, the product prices become at least five times higher than in the national market, due to high demand and the exclusiveness of such products. However, the weavers are deprived of such high profits. Zari and embroidery work are mainly the speciality of Lucknow, Agra, Hyderabad, Varanasi, Delhi, Kashmir, Mumbai, Ajmer, Bhopal, and Chennai in India. Therefore, the Kolkata wholesalers face stiff competition with the other regions in getting export contracts from abroad. In Panchla, no initiative has been taken by the West Bengal government yet to establish a formal industrial hub like Domjur.

2. Common traits of the work environment of the informal production units

(i) Labourers in the production units

In both the Blocks, labourers engaged in informal production units do not always get a minimum wage guarantee (like the trainees), job security, leave facility, pension, health insurance benefits, social security, etc., as they are not registered employees. They work for more than 48 hours per week despite the International Labour Organisation (ILO) norms regarding decent work. Even the businesses in the unorganised sector do not adhere to strict safety and environmental regulations. In the absence of labour rights and protections, it becomes difficult for employees to get credit for personal reasons from the formal financial institutions. But the earnings of the employees are not taxed or subject to social security contributions, since income remains erratic.

(ii) Division of labour in production units

A very high division of labour has appeared in the production units. For instance, in gems & jewellery production units, workers are found as designers, goldsmiths, engravers, stone setters, enamellers, and polishers. In zari & zardozi production units, workers are found either as designers or weavers. However, the final products are always checked by the employers and technicians of the contractors.

(iii) Women's involvement and use of child labour

Although women's involvement is less in the gems & jewellery industry, it is prominent in zari & zardozi embroidery works. These women do not have professional training in weaving; however, have acquired skills over time and get nominal wages. Since weaving expertise is fundamental in zari work, no child labour was found. A few child labourers were there in the gems & jewellery industry who were from the underprivileged families and were under training for skill formation with minimal wages.

(iv) Types of labour migration

Both types of labour migration – inward and outward were found in Domjur Block, though it was not substantial in Panchla Block. Labourers come in Domjur from the Districts like Hooghly, Birbhum, Purulia of West Bengal, and even from the neighbouring States - Bihar and Jharkhand. This is mainly rural to urban migration, and in search of better jobs. These migrant workers are not so skilled, but have acquired knowledge through *Learning by Doing*. The skilled labourers were also found migrating to other Indian States and Union Territories like Gujarat (Surat), Maharashtra (Mumbai), Chennai (Tamil Nadu), Hyderabad (Andhra Pradesh), Delhi, etc. Abroad, they move to the Middle East countries, especially in Saudi Arabia. Although outward migration is associated with massive risk and costs, it takes place because of huge wage differences, thereby securing higher income and improved standard of living. Brokers play an important role in this external outward migration. They keep contacts with the employers of Saudi Arabia, and also, they facilitate the intended workers with resident permits. It was found in the study region that this type of migration is intergenerational, and voluntarily, the workers return after securing a considerable income. However, the last pandemic showed a different picture of the involuntary return of many skilled workers from Saudi Arabia. Though a few of them (who are experienced and worked there for several years) have launched their own production units in their residential areas now, the younger ones are still eager to go back to fetch money. The reverse migration also showed some cases where extra labourers were laid off due to the import of advanced machinery, from Germany and Italy, in the production houses of Saudi Arabia. These machineries have sophisticated technologies, and need fewer people to control. Indian workers are good in hand-works,

but are not that educated to operate the high-tech machines. However, labour migration – whether inward or outward – always brings positive social and cultural spillovers along with good economic returns.

(v) Labour migration and social cohesion

Social cohesion is related to a sense of belonging to a community. Migration of workers helps improve social life as the migrated people learn about new culture, customs, and languages, which improve solidarity and tolerance among the members of a society. Supporting diversity and inclusivity fosters a sense of civic responsibility, and therefore basic services (like housing, education, health, social and legal protection, etc.) develop to support the migrant families and make the best use of their potential to contribute. A cohesive society promotes the well-being of all members through increasing trust. In the study region, inward migration has helped in such developments. Even outward migration is expected to secure economic growth in those regions where the Domjur workers moved. The regular inward & outward migration and economic status of the workers truly reflect the cooperation and stability of the societies.

(vi) Issues on patents

A patent is an exclusive right recognised for a creation. A design patent is a kind of legal protection of the exclusive visual talents of a produced item. Since the computerised designs for the ornaments and zari & zardozi works on silk materials are delivered to the workers by the Kolkata contractors, every manufactured item has a distinct configuration, and the contractors hold the patent right. However, it is also seen in the Domjur-Panchla region that the owners of small informal units sometimes produce items for the local retail markets, utilising their own innovative skills that are hereditary. These types of produced items do not possess legal protection because they are not being replicated.

(vii) Effects of goods and services tax and the COVID-19 pandemic

On July 1, 2017, Goods and Services Tax (GST) Laws were implemented in India by replacing a complex network of Central and State taxes. GST is a destination-based tax system since the obligation to pay tax is generated only after the goods or services reach the customers. Although it facilitates economic

growth by ensuring transparency in businesses, it creates losses as well. Under the GST system, businesses that have an annual aggregate turnover lower than INR 1.5 crores can pay taxes at a fixed rate depending on the turnover amount. Otherwise, the escalated tax slabs raise the prices of final outputs of the small-scale and medium-scale industries, and they face stiff competition in the world market for their products. In this study, about 49 per cent and 21 per cent of production houses were found paying GST in Domjur and Panchla, respectively, and all of them reported that GST lowered their profit levels. During the pandemic, these small production units were about to shut down because of extremely low demand for their products. People use gems & jewellery, and buy zari & zardozi embroidery outfits for occasions. When people of all classes were in a vulnerable situation in the pandemic, none of them thought of a luxurious life. Therefore, these industries were almost shut down then, but now they are in a state of revitalisation.

3. Socio-economic conditions and objective well-being status of workers

Assessment of socio-economic condition is very crucial as it throws light on well-being, which is a state of feeling good about life, experienced by individuals and societies. Well-being is an everyday resource of life, like health, and is determined by economic, social and environmental conditions. Among the two different types of well-being, objective well-being includes some physical factors, which widely account for basic requirements like housing, employment, food and nutrition, financial assets, etc. and some social factors like education, health, social security, social network, human rights, etc. that apply within a larger society.

In Domjur, among the 170 respondents, 168 were male. About 48.24 per cent of respondents were found practising Hinduism, and the rest belonged to the Muslim community. One of the most common problems of the artisans engaged in the gems & jewellery industry is the deterioration of the focusing ability of eyes after 20-25 years of continuous work practices. The frequency distribution of the age of the respondents is presented in Table 2.

Table 2 shows that only 5 per cent of workers in the production houses were above the age of 45 years. Almost 48 per cent of respondents belonged to the age group 25-35 years. Education helps critical thinking and develops a perspective towards life. It helps personal development and greatly contributes

Table 2: Frequency distribution of the age of the respondents in Domjur Block

Age group (in years)	*Number of respondents*
Below 25	9
25-35	81
35-45	70
Above 45	10
Total	170

Source: Prepared by the author

to bringing positive changes in society. Therefore, the educational status of the respondents was studied (Figure 1), where around 43 per cent, 45 per cent and 12 per cent of respondents were found having education up to Secondary (tenth standard), Higher Secondary (twelfth standard) and Graduate levels, respectively. Only one respondent had a primary education.

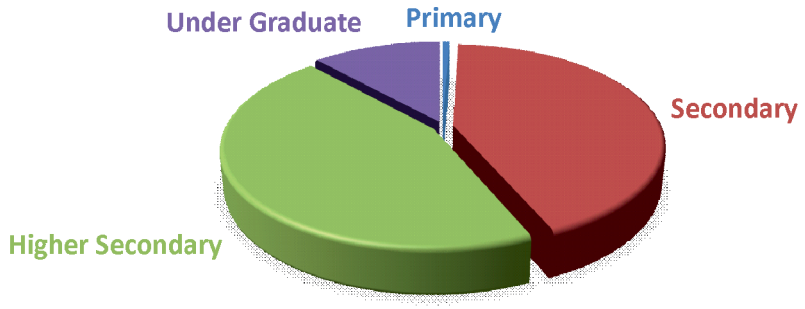

Figure 1: Educational levels of the respondents in Domjur Block

Source: Prepared by the author

Assessment of family size is another important indicator of objective well-being, as it influences the resource availability of each member in a family. The study found that the mean family size of the respondents was 4, while it varied between 3 and 6. Moreover, about 88 per cent of respondents lived in *pakka* houses, whereas the rest lived in *Semi-pakka* houses. None of the workers were found living in the *Kachha* house, since the workers were aware of Indira Awas Yojana (IAY), which is a public housing scheme for the construction or upgradation of dwelling units. People belonging to the Scheduled Castes (SC) and Scheduled Tribes (ST), and minorities in the BPL category can take the financial assistance from the government under this scheme. As per the 2011 Census of India, about 18 per cent of the population of Domjur belonged to

either the SC or ST category, and 36 per cent of the population was Muslim. Moreover, being a part of the Kolkata urban agglomeration, Domjur possesses decent housing facilities with safe drinking water and proper sanitation provisions, and 24-hours power supply.

While coming to work practice, about 95 per cent of respondents were found to be skilled workers. Workers have acquired skills from childhood through observing their parents' engagement in such work. Although most of the labourers were skilled, only 38 per cent of them earned a daily wage above INR 600. About 28 per cent and 34 percent workers were found getting daily wages below INR 500, and between 500 and 600, respectively. Most of the workers (61 per cent) worked for 10 to 12 hours daily. Assessment of income distribution is imperative since it influences the cohesion of society, determines the extent of poverty, and examines growth and development at micro and macro scales. Monthly income levels of the respondents are presented in Figure 2.

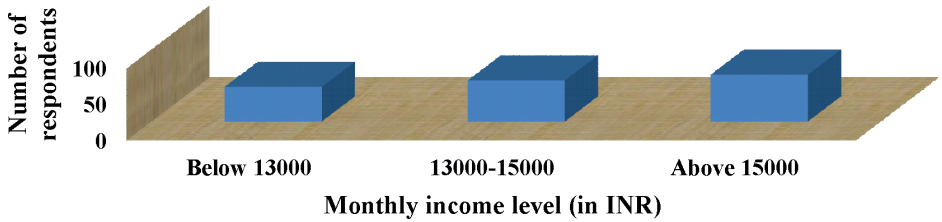

Figure 2: Monthly income levels of the respondents in Domjur Block

Source: Prepared by the author

In the study, the mean monthly income of the respondents was INR 14779, and that varied between INR 12500 and INR 17500. Although the workers earned a daily wage above the wage rate (INR 178/day) determined by the ILO for social justice, a large number of dependent members increased the financial burden in their families.

In Panchla, among the 150 respondents, around 81 per cent were male. While coming to religion, about 47 per cent of respondents were found practising Hinduism, and the rest belonged to the Muslim community. The highest percentage of workers was found in the age group 25-35 years (49 per cent) and was closely followed by the age group 35-45 years (41 per cent), which are depicted in Figure 3.

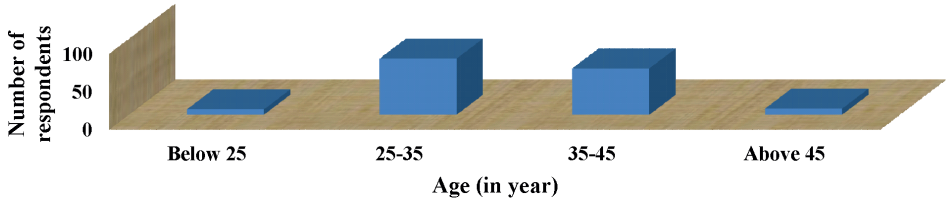

Figure 3: Respondents in different age groups in Panchla Block

Source: Prepared by the author

Usually, with the increase in age of workers, employment opportunity decreases since health does not permit them to do such delicate work in old age. Chronic headache and backpain create obstacles for securing a high level of concentration at work. Similarly, in the initial years of adulthood, employment is less because of spending time acquiring skills. Subsequently, the frequency distribution of educational levels of the respondents is presented in Table 3.

Table 3: Frequency distribution of educational levels of the respondents in Panchla Block

Educational status	*Number of respondents with percentages*
Primary	01 (0.6)
Secondary	70 (46.7)
Higher Secondary	61 (40.7)
Under Graduate	15 (10.0)
Post graduate	2 (1.3)
Illiterate	1 (0.7)

Note: Figures in the parentheses represent percentages
Source: Prepared by the author

In Panchla, like Domjur, the mean family size of the respondents was 4, and it varied between 3 and 6. About 89 per cent were found living in *pakka* houses. As per the 2011 Census of India, about 21.05 per cent of the population of Panchla belonged to the combined SC and ST category, and 46.62 per cent was Muslim. Therefore, they all came under IAY.

It was further found that about 94 per cent of workers engaged in the production process were skilled, while the others were semi-skilled. While coming to pay checks, the study revealed that about 25 per cent of workers

earned daily wages below INR 500. Around 38 per cent of workers got daily wages between INR 500 and INR 600, and this percentage was also the same for the respondents getting wages above INR 600 daily. Most of the respondents (61 per cent) worked 10-12 hours per day. The frequency distribution of income levels of the respondents in Panchla is presented in Table 4.

Table 4: Frequency distribution of income levels of the respondents in Panchla Block

Income level (in INR)	*Number of respondents*
Below 13000	37
13000-15000	57
Above 15000	56
Total	150

Source: Prepared by the author

The study revealed that the mean monthly income of the respondents was INR 14775, and income varied between INR 12500 and INR 17500. While about 38 per cent respondent were found earning a monthly income of more than INR 15000 in Domjur, this figure was 37 per cent for Panchla.

The Central and the State Governments have introduced several schemes for the welfare of citizens in India. It was found in the study region that respondents were aware of most of the schemes related to education, health, pension, livelihood support, etc. Hence, not only educational qualification and professional skill formation, but also social awareness and financial literacy play significant roles in inclusive development. Above and beyond, religion plays an influential role in employment in gems & jewellery and zari & zardozi embroidery works. As mentioned, zari and zardozi are historic art forms which developed in the Mughal era in India. The artisans in the early days trained their family members and the community in the skill of embroidering. This centuries-old tradition of Muslim artisans is still continuing today and is very prominent in the study region. The making of jewellery is also an ancient art. In the 16th century in India, Mughal invaders brought about the Golden Age of Indian jewellery. Therefore, being a craft belonging to certain communities, artisans from specific regions are always favoured for employment, predominantly in the jobs of hand-made jewellery. These days, unique jewelleries are consistently produced in the Islamic world, and the high demand for such jewellery is often met by the skilled workers of Domjur.

4. Subjective well-being of workers

The other type of well-being, which is subjective, states how people are involved and assess a specific domain or all activities in their lives. This has the components related to life satisfaction, and positive and negative feelings of life (Andrews & Withey, 1976). An individual is said to have high subjective well-being if he/she experiences happiness frequently and are an optimistic person. This approach tends to capture an individual perspective on well-being. Since a healthy mind is linked with a healthy wallet, and so forth, the subjective well-being of the workers is studied, considering ten indicators (from the survey experience), which are as follows:

(a) **Job guarantee** – reduces the anxiety of job loss and ensures satisfaction in the present job. Though there is no formal job guarantee for informal work, workers' skill makes it certain.

(b) **Timely payment** – increases satisfaction and happiness.

(c) **Pay package related to working hours** – if the pay package is proportional to working hours, as per market rate, then job satisfaction increases. However, being an employee of the unorganised sector, there remains some sort of exploitation.

(d) **Leave facility** – reduces the anxiety of job loss of a worker due to illness, or to support his/her family in any exigency, and thereby is supportive to physical, mental and emotional well-being.

(e) **Health status** – represents how people perceive their health conditions - physical, mental and emotional. Physical health signifies normal functioning of the body. Mental health helps rational thinking in difficult situations. Emotional health controls moods and feelings.

(f) **Government support for livelihoods** – enables workers to overcome financial stresses during the rough phases of their lives, and thereby provides them with a better standard of living.

(g) **Infrastructural facility at the workplace** – increases productivity of workers by making their work less tiresome, and therefore, it improves business outcomes.

(h) **Work environment related to healthy relationships with supervisor/s and colleagues** – supportive relationships with supervisor/s and

colleagues help in fostering collaboration and improving productivity. Even social interaction reduces mental stress and absenteeism in the workplace.

(i) **Opportunities for growth and advancement** – since mental well-being is closely connected to good decision-making ability, flexible work arrangements are essential for workers to give their best.

(j) **Balance between personal and professional life** – allows people to have time for personal relationships and for their own relaxation after meeting the deadlines at work place.

The mentioned ten indicators, at the time of FGDs, were found to influence the quality of life extensively for the studied population, and thereby they have certain impacts on workers' productivity. Subsequently, using a 5-point Likert scale, which is a unidimensional scale used to collect respondents' opinions, all the indicators were rated according to the level of satisfaction and happiness. The higher the score, the higher the satisfaction. The average score per indicator for both the Blocks are presented in Table 5.

Table 5: Average score of each indicator in both blocks in the 5-point Likert Scale

Indicators	*Average score per indicator in Domjur*	*Average score per indicator in Panchla*
Job guarantee	3.21	3.79
Timely payment	1.06	1.33
Pay package connected to working hours	2.70	2.78
Leave facility	2.82	3.25
Health status	3.06	3.55
Government support for livelihoods	3.32	3.43
Infrastructural facility in the workplace	2.50	2.50
Work environment related to a healthy relationship with supervisor/s and colleagues	3.00	3.50
Opportunities for growth and advancement	3.55	3.05
Balance between personal and professional life	2.15	3.15
Total score	27.37	30.33

Source: Prepared by the author

The total score of each Block was calculated by summing up the average scores of the ten indicators. Subsequently, to evaluate the average score of each indicator, the following consideration has been made and presented in Table 6.

Table 6: Evaluation of average indicator scores

Value of the average indicator score	*Type*
0 to <1	very poor
1 to <2	poor
2 to <3	moderate
3 to <4	good
4 to 5	excellent

Source: Prepared by the author

Tables 5 and 6 show that in both blocks, timely payment is poor; wage rate and infrastructural facility are moderate; job guarantee, government support for livelihoods, health status of the workers, work environment related to social bonding, opportunities for growth and advancement are somewhat good. However, though leave facility and work-life balance are moderate in Domjur, they are good in Panchla. None of the average indicator scores is very poor or excellent in both the Blocks.

Moreover, Table 5 shows that the total of average scores of the ten indicators in Domjur is 27.37, and that of Panchla is 30.33, per worker, out of 50 points. Therefore, it can be concluded that while considering subjective well-being, zari & zadozi embroidery workers are in a better state of mind in Panchla in comparison with the gems & jewellery workers in Domjur.

5. A holistic approach to defining workers' well-being

The most important aspect of this study is to assess workers' well-being, employing a holistic approach (demonstrated in Figure 4) which advocates for all-inclusive intervention (at workplace, home front, community level and societal level) that handles risks and foresees opportunities.

Figure 4 illustrates the factors that may influence workers' well-being. Not only are workers' inherited skills and working conditions significant, but quality of life is also important, as it is shaped by external factors (situated outside the workplace) such as peace and comfort on the home front, social cohesion, and government policies and programmes that affect workers' physical and mental

health. Therefore, by assessing objective and subjective well-being, the study visualises a unique approach in defining workers' welfare. Since workers' well-being and productivity at the workplace have a bidirectional causal relationship, they both have a significant positive impact on regional development, and vice versa, which is represented in Figure 5.

Figure 4: Holistic approach in defining the well-being of workers

Source: Prepared by the author

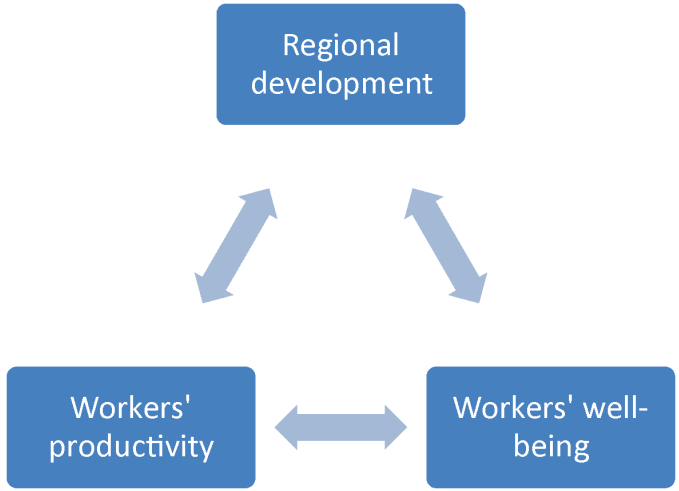

Figure 5: Relation among workers' productivity, workers' well-being and regional development

Source: Prepared by the author

6. Theoretical arguments for treating the Domjur-Panchla region as a Growth Pole

This piece of research aims to blend empirics with early Location Theories to comprehend the causes of regional growth (as mentioned in the study objective) in the study region. Hence, the early Growth Pole literature is discussed first, and then a theoretical argument is provided for treating the study region as a Growth Pole.

(i) Early Growth Pole literature

Location theory was initiated from Classical Economics when the economists found that locations were related to economic progressions since the early civilisations. Analysis of Industrial Location commenced in the 19th century by Launhardt (1885), which was publicised by Weber (1909). Even before, Thunen (1826) built up the *Monocentric City Model*, which considered a central market and its concentric impacts on surrounding land uses.

The Classical and Neo-classical Schools of Location Economics Literature state that industrial clusters do not build up and expand by chance; rather, the theories explore the logic behind such emergence and growth in a specific geographical location. Marshall (1891), as an early contributor in the Neo-classical Theory of Location Economics, mentioned the "industrial district", which increased the wealth of some regions in England and Germany due to a large concentration of firms and industries, and that was linked with local governments, social institutions, demography and freedom of people. To refer to Marshall, once a localised industry develops in a town, trading activities expand, and rent becomes high in the central sites. In the subsequent phase, the factories congregate on the outskirts of that town and in its neighbourhoods with physical availability of inputs. In this way, the "primitive localisation" of the industry gets transformed into almost an "industrial district" in the long-run.

Among the other contributors in this literature, Weber (1909) in his *Least-Cost Theory* stated that industries would be positioned in response to the forces like relative transport and labour costs, and agglomeration, which is popularly known as the *Location Triangle*. Later on, Christaller (1933), in his *Central Place Theory*, opined that in a market town, to provide goods and services in the surrounding areas, 'each centre's sphere of influence for its activities at any

specific level would be equal in size to every other centre's sphere of influence'. Hoover (1937, 1948) exposed that the location of economic activities is mostly influenced by demand and cost factors. Furthermore, Losch (1954) pointed out that every industry should seek the best location to maximise sales revenue or profit.

The neo-classical regional growth models primarily focus on the long-run potential growth path of the economies. Further to this is the *Circular Cumulative Causation Theory* enunciated by Myrdal (1957). The theory illustrates that if one particular region in a country starts growing, it attracts people, causing human capital and physical capital. This cumulative causation action creates "spread effect and backwash effect". *Spread* refers to the circumstances where growth in a particular point induces concentration in that region due to external and internal economies. *Backwash* happens if the undesirable effects dominate and the level of economic activity in the periphery declines. The theory, thus, articulates that "affluence is further promoted by affluence" and "poverty is further perpetuated by poverty".

The *Core-periphery Model of Economic Development* was developed by Friedmann (1963), which was a model of the 'spatial organisation of human activity based upon the equal distribution of power in the economy and society', with four stages- pre-industrial, transitional, industrial, and post-industrial. Much later, the *Core-periphery Model* of Venables (1996) discussed how repeated demand-supply interaction conveys scale economies.

Meanwhile, Pred (1967) adapted the *Bounded Rationality Model* to Location Economics and argued that due to limited rationality, individuals should focus on satisfaction, rather than optimisation, in making decisions. Again, Smith (1971) extended the theories developed by Weber and Losch to find out the "optimal location," "quasi-optimal location," or "sub-optimal location" of industries in connection with linkages. Becattini (1989, 1990) included social, cultural, historical and institutional foundations of local industrial growth, above economic effects of agglomeration as pointed out by Marshall. He used the concept of "sense of belonging", which not only shares a vision of the future but also helps *act accordingly*. Krugman (1991) defined the *New Economic Geography* as the *Location Theory of Production*, similar to the Classical Location Theory, which describes the means of emergence and progression of economic spatial structure. He developed a model to show 'how

a country can endogenously become differentiated into an industrialised "core" and an agricultural "periphery".' In order to comprehend "scale economies" while minimising transport costs, he stated that manufacturing firms would situate themselves in the regions which have a greater demand for their products. However, demand itself depends on the distribution of manufacturing.

Knowledge spillover is very common in Location Economics, where it refers to the exchange of ideas among individuals, and is closely connected to technology and Research & Development (R&D) spillovers, with positive externalities. Internal knowledge spillover occurs if there is an affirmative impact of knowledge among individuals in a production unit. And, external knowledge spillover occurs when the affirmative impact of knowledge is among individuals outside the production unit. The famous Marshall–Arrow–Romer knowledge spillover originated in 1891, and was named as *MAR spillover* by Glaeser, Kallal, Scheinkman and Shleifer (1992). Marshall pointed out that "industrial district" promoted "knowledge-based economic growth", and "information spillover" augmented physical, social and human capital; created external economies and increasing returns. This theory was extended later by Arrow (1962) and Romer (1986, 1990). Arrow opined that the determination of optimal resource allocation for invention would depend on the nature of the market for knowledge and the technological traits of the invention procedure. Romer argued that technological advancements were supportive of economic growth; however, technology had to be endogenous. Therefore, the closer the firms were to one another, the greater the MAR spillover. Porter (1990) and Jacobs (1969, 1984) also talked about technological *spillovers* in generating economic growth; when Porter accentuated technological innovation and upgradation, Jacobs emphasised diversification.

(ii) Reasons behind treating the Domjur-Panchla region as a Growth Pole

Domjur and Panchla Blocks have a historical background for the inhabitancy of a pool of skilled labour force having expertise in gems & jewellery and zari & zardozi works, at low cost. Moreover, the entire region is well-connected with important cities and towns of West Bengal like Kolkata, Howrah, Kharagpur and Durgapur through National Highways (like NH-2 and NH-6), and railway stations like Santragachi (around 5 kms away) and Howrah (around 10 kms away). The region is also connected with Netaji Subhas Chandra Bose

International Airport through NH-6 and the Belgharia Expressway. Thus, the geographical location of the Domjur-Panchla region ensures seamless transfer of raw materials and final products. Long back, Weber trusted in low transport and labour costs, and Losch emphasised the entrepreneur's profit for the concentration of industries in a particular geographical location. The strategic location of the Domjur-Panchla region helps minimise transport costs. An abundant supply of skilled labour and consistent demand for the final products ensure reasonable profit for the employers.

Smith pointed out that due to the concentration of firms in a particular geographical location for a specific product, other subsidiary firms would begin to set up in the neighbourhoods to supply inputs. By this, an industrial atmosphere would be created, and a gradual expansion of localised industry would exhibit "information spillover", which is apparent in the study region. The firms that were able to initiate or follow these changes in the initial phases have now appeared as leaders in the market. Therefore, what Marshall talks about is that the "primitive localisation" of industries would transform into an "industrial district" in the long-run through horizontal expansion, which is visible in the study region. The gems & jewellery and zari & zardozi industries are now expanded in the hinterland, like Baruipara, Makardah, and many other places. Beyond that, Friedmann and Venables, who believed in core-periphery dynamics of economic development, based upon spatial organisation of human activity, hold true for the Domjur-Panchla region, due to the well-suited labour migration network.

Furthermore, in an "industrial district", Marshall pointed out that the specialised abilities of workers automatically get transmitted from one generation to another. This is quite deceptive in the study region. The well-established social networks have helped the expansion of such businesses. As a result, the mystery of trade is now disclosed with no mysteries. Even this study goes with Myrdal's notion of "spread effect". Expansion of the production units has led to more human and physical capital, and this cumulative causation action has attracted more people from the nearby regions, calling for public investment. Krugman was also of the view that manufacturing firms would situate themselves in the regions which have a great demand for their products. The production-supply chain, as discussed, closely substantiates the reasons for the emergence of the Domjur-Panchla region as a Growth Pole. The

two economies convey simultaneous execution of clubbing of three factors - transport cost advantage, economies of scale effect and transfer of factor of production (labour), as Krugman pointed out.

Moreover, following Christaller, this study proves that the entire region serves as a market town by ensuring goods and services in the periphery. Even following Becattini, the socio-cultural-historical-institutional foundations of growth in the Domjur-Panchla region can be well described beyond economic reasons of growth. Marshall, Arrow, Romer, Porter, and Jacobs all opined that invention is related to the nature of the market for knowledge and the technological traits of the invention process. Innovation, upgradation and diversification - all create externalities and give rise to urbanisation, which is factual for the Domjur-Panchla region. In a nutshell, analysing the field survey data and the secondary information, our study firmly establishes a theoretical support for considering the Domjur-Panchla region as a Growth Pole with having high potential for regional development.

7. Present situation and prospects of the informal production units

Finally, our study discusses the present situation and future opportunities of the informal production units in the Domjur-Panchla region with the help of SWOT analysis (in Table 7), which was first developed by Learned et al. in 1969, and then further expanded by Humphrey in the 1970s, though the full credit remains debatable. The primary objective of SWOT analysis is to raise awareness of the factors that help determine a business strategy.

In a nutshell, this study shows how the theory of Growth Pole keeps relevance in regional development. Assessment from national and global perspectives not only sheds light on the present situation of industries and the people associated with them, but also infers opportunities and threats of the production units, which can help better planning for the future in the context of sustainable regional development. In this way, our study differs from the earlier literature. Given the fact that comprehensive regional planning can help link urban centres with their peripheries, the only objective would be to bring the advantages of robust growth available and accessible to every individual residing within the Growth Pole area. International experiences reveal that the adoption of this approach has enabled cost-effectiveness in the production process. Thus, it is advisable to direct public policies towards Growth Pole-centric development.

Table 7: SWOT analysis for the production units in the Domjur-Panchla region

Strength	Weakness
• Both industries bear a prosperous inheritance of traditional works. • The entire region has a large number of skilled workers. • The region is well-connected with important cities and towns of West Bengal. • Most of the inputs for production and computerised designs for the products are supplied by the contractors of Kolkata. • Local Banks provide loans in concessional terms. Co-operative societies assist with market promotion, and sometimes they provide product designs. • A well-suited 'migration network' for semi-skilled & skilled artisans is present in this region, which makes the process of labour migration (inward and outward) much easier. • Low-cost skilled labourers and child and female labour participation provide a significant advantage to ensure cost-effective production.	• The major weakness of the workers of these two informal production units is the lack of awareness of several institutional amenities for the workers. • Workers very often fail to avail different concessional credit benefits and welfare scheme facilities due to their limited knowledge and financial illiteracy. • Lack of education of workers is also a cause for evading paperwork in different financial organisations. • Money lenders always take advantage of the financial illiteracy of the poor artisans and extract their little savings. • These industries are highly dependent on brokers for marketing of final products, because of the fragmented farm size. This reduces the profit levels of the producers in the unorganised sector. • The equipment used in the production process is now outdated in the unorganised sector. Since most of the works are hand-made, informal production continues. • The working environment of the informal units is not very favourable to workers' physical and mental health. • Computer training centres are one of the urgent needs for the workers engaged in the informal sector, as they can help introduce elaborate designs to bring uniqueness to products and tackle stiff market competition.

Opportunity	Threat
• Both industries have high potential to grab an even larger market area than now due to their strategic geographical location. • The native artisans in the unorganised sector get contracts from the big companies throughout the year because of their exceptional work. • The co-existence of formal and informal units in Domjur is expected to continue because of the high existing market demand for the products. • Assistance from Kolkata contractors and market connectivity are also favourable to enhance production in future. • Enhanced social interactions among the production units for being situated in a particular region, and positive externalities due to knowledge, information and technology spillovers are always conducive to the growth of these industries. .	• Sometimes the informal production units lack infrastructure and are incapable of advanced technology. Even digital transaction creates disputes. • New stringent government regulations and policies (regarding credit and tax) often become a barrier for informal units to adapt, and thereby expansion remains underrated. • Stiff competition from the producers of other States is also a threat to the informal units. • In the absence of patent rights, when the native artisans in the unorganised sector produce items for the retail market using their own innovative skills, the products often get replicated. • The prosperity of computerised artistic work in different parts of the country and the emergence of several other such clusters have put the artisans into stiff competition for their hand-made products. • The events like Demonetisation, GST implementation and the recent lockdown due to the pandemic impacted the producers.

Source: Prepared by the author

IV. CONCLUSIONS

The study analyses production process, supply chain, business promotion, and workers' well-being for the gems & jewellery and zari & embroidery works in the study region, which can pave the path for regional development. The development of a region through Growth Pole Theory presumes dominance over the other premises as it supports the perception that productivity can be raised by recognising external economies of agglomeration that could be achieved by clustering, infrastructural development and productive activities in

the promising locations; rather than scattering them thinly over large regions. Although our study goes with this *cluster approach* of regional development, it does not believe that this would be sufficient for the sustained regional growth. Clustering may result in lower flexibility to alter technology, and thereby, the impact of a cluster may be limited within the cluster.

At this point, our study goes beyond the traditional analysis, which only focuses on the production process in the artistic domains in a cluster; rather considers workers' well-being through an all-inclusive approach (comprising both objective and subjective well-being), together with the marketing chain of the finished products and future scopes of the industries, to convey the completeness of this research. Our study is suggestive of the facts that additional government's initiative with regard to generating awareness and increasing literacy rate of the locals, arrangement of vocational training for the workers, indorsing decent work practices; modernisation in production process of existing informal units, and market promotion polices are important for raising productivity and well-being of the workers to convey *inclusive growth* in the study region, which in turn would help regional development. Hence, by adopting a political economy of development approach, the study illustrates how the government's actions can truly create opportunities for everyone, over and above the allocation of funds for regional development, with this resourcefulness. Eventually, inequality and poverty will be reduced, and all segments of society will perceive growth.

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Declarations

1. **Funding:** A grant from Rabindra Bharati University has been received to carry out this piece of research.
2. **Conflict of interest:** The data for this study were collected from the two Blocks – Domjur and Panchla in the State of West Bengal, India, after taking permission from the local governing bodies and informing the officials about the purpose of the visit. Face-to-face surveys were initiated with the consent of the target groups, and no personal data (like name, phone number, GPS location/address, and National Identification numbers) was obtained since this information was not required for our study. Therefore, there are no conflicts of interest.

3. **Availability of data and material**: The data used in this study were collected through a primary survey. The survey database may be available on request to the author.

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