INEQUALITIES IN THE PROCESS OF AGRICULTURALISTS LEARNING NON-AGRICULTURAL SKILLS

A THESIS TO BE SUBMITTED TO

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DOCTOR OF PHILOSOPHY

BY

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PROF. NARENDAR PANI

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Private University Established in Karnataka by ACT 35 of 2013
Bengaluru - 560064

DECLARATION BY THE CANDIDATE

I declare that this thesis entitled **"Inequalities in the Process of Agriculturalists Learning Non-agricultural Skills"** submitted for the award of Doctor of Philosophy to THE UNIVERSITY OF TRANS-DISCIPLINARY HEALTH SCIENCES AND TECHNOLOGY, Bengaluru, is my original work, conducted under the supervision of my guide, **Prof. Narendar Pani**. I also wish to inform that no part of the research has been submitted for a degree or examination at any university. References, help and material obtained from other sources have been duly acknowledged.

I hereby confirm the originality of the work and that there is no plagiarism in any part of the dissertation.

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CERTIFICATE

This is to certify that the work incorporated in this thesis **"Inequalities in the Process of Agriculturalists Learning Non-agricultural Skills"** submitted by Mr Ajit Kumar Babu, was carried out under my supervision. No part of this thesis has been submitted for a degree or examination at any university. References, help and material obtained from other sources have been duly acknowledged. I hereby confirm the originality of the work and that there is no plagiarism in any part of the dissertation.

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List of Acronyms

AL	Agricultural Labour
ANOVA	Analysis of the Variance
CCL	Central Coalfields Limited
CL	Cultivator
CNC	Computerised Numerical Control
COVID 19	Coronavirus Disease of 2019
DDU-GKY	Deen Dayal Upadhyaya Grameen Kaushalya Yojana
DGT	Directorate General of Training
DID	Degree of Identity Dominance
DVC	Damodar Valley Corporation
FICCI	Federation of Indian Chambers of Commerce & Industry
GDP	Gross Domestic Product
IDFAD	Index of the Distance from Absolute Deprivation
IMO	Indicator of the Multiplicity of Occupations
ITI	Industrial Training Institute
JCB	Joseph Cyril Bamford
JSLPS	Jharkhand State Livelihood Promotion Society
KPMG	Klynveld Peat Marwick Goerdeler
MHRD	Ministry of Human Resource Development
MKO	More Knowledgeable Other
MoRD	Ministry of Rural Development
MSDE	Ministry of Skill Development and Entrepreneurship
NCVER	National Centre for Vocational Education Research
NH	National Highway
NIAS	National Institute of Advanced Studies
NIRDPR	National Institute of Rural Development and Panchayati Raj
NSDA	National Skill Development Agency
NSDC	National Skill Development Corporation
NSQF	National Skill Qualifications Framework
PCA	Primary Census Abstract
PMKVY	Pradhan Mantri Kaushal Vikas Yojana
PPP	Public Private Partnership

RCC	Reinforced Cement Concrete
SC	Scheduled Caste
SDC	Skill Development Centre
SHG	Self Help Group
SSC	Sector Skill Council
SSDM	State Skill Development Mission
ST	Scheduled Tribe
TCS	Tata Consultancy Services
TOI	Times of India
TVS	Thirukkurungudi Vengaram Sundram

Synopsis

Formal education and learning skills have multiple associations with inequality. Similarly, inequality has multiple impacts on educational attainment and access to learning skills. This thesis explores the processes of learning skills, the impact of inequality on educational attainment, access to learning, and experiences in the processes of learning skills. Additionally, it examines the various consequences of inequality in learning skills on the standard of living and the ability to deal with the uncertain situations created by a shock like the COVID-19 pandemic. The thesis explores these broad questions in the context of one of the prominent forms of transformation, the movement out of agriculture in rural India.

Specifically, the thesis explores—what are the processes of learning involved when agriculturalists acquire non-agricultural skills. Under this broad question, it goes into the details to examine,

- Are there inequalities in these processes of learning non-agricultural skills?
- Do inequalities in learning these skills affect access to occupations?
- Does the learning contribute to innovation?
- How does uncertainty affect the entire arrangement, especially when there is a shock like the COVID crisis?

The thesis investigates these questions through a household survey and an ethnographic study of a village in Ramgarh district of Jharkhand. The data collected through the survey and the insights gained during the stay in the village for more than 20 months highlighted the dynamics of rural transformation which had its roots in the movement out of agriculture. This rural transformation process observed in the study village had multiple associations with the changing demand for skills. The changing demand for skills generated the need for learning. The differences in the rural transformation process had diverse impacts on the processes of learning skills. These differences in learning skills had multiple consequences on the existing inequalities and emerging inequalities.

The transformation of the village across multiple dimensions was reflected in the change in its spatial, social, economic and demographic profiles. The local narrative, which was consistent with the macro level data, revealed that major changes in the

village were observed after 1991 with a sharp decline in the number of main agricultural workers to the total main workers. This change in agriculture increased the supply of workers available for non-farm jobs. The increased supply of workers outside of agriculture, combined with the availability of low-cost dry land, contributed to the emergence of three large industries in the village and its periphery.

The establishment of large industrial plants in the village and its periphery changed the occupation structure. A section of villagers got access to industrial jobs in these local industrial units whereas a large section of workers was excluded from these non-agricultural opportunities. The section of workers who got access were largely from the landowning castes. These castes had sold land and in return negotiated for jobs in the industrial units along with their monetary compensation. This section of landowning castes were also seen investing in diverse non-agricultural activities near these industrial units. The demand generated by the industrial workers stimulated investment in trade around the industries. The monetary compensation received from these industrial units and the possession of land around the industrial area helped the landowning households invest in multiple businesses and other activities offering self-employment. These investments in various non-agricultural activities led to the emergence of a market around the local industrial plants on both sides of a metalled road, which connects the village with the nearby town at one end and to a renowned temple of the region at the other end. As the ownership of land, the industries bought was a route to jobs in the industries, the landless castes who had been excluded from the industrial jobs were also unable to find non-agricultural opportunities in the emerging market area.

The inequality in accessing non-farm jobs in the local industrial units and the inability to invest in the emerging market area generated pressure among a substantial section of workers to find work outside the village. The pressure to migrate outside the village for work originated from the mismatch between the supply of workers who sought work outside agriculture and the limited non-farm jobs in the village. This pressure to migrate was compounded by the increase in the competition for limited non-farm jobs with the practice of importing skilled workers for technical activities in the local industrial units. This practice began from the time when the industrial plants were under construction and extended to when these industries started fully functioning. This practice was further compounded after an irresolvable conflict arose from the accidental death of two workers from the village in one of the industrial plants. This incident not only raised

the magnitude of immigration from other regions of Jharkhand and from other states to the village for industrial jobs but also increased the resistance to hiring workers from the village for these non-farm jobs. This incident also altered the occupational structure again.

The incident generated a new set of non-farm opportunities and at the same time increased the pressure to migrate from the village. For example, some villagers started functioning as middlemen to solve the local conflicts on behalf of the local industrial units and earn a fee. They also got the responsibility of supplying workers for industrial jobs. This process provided some landless non-SC/ST groups to access the non-farm jobs in the local industrial units. However, it raised the pressure to find work outside the village among most of the villagers. The middlemen preferred the immigrants rather than the local workers while providing access to industrial jobs to maximise their earnings. This further increased the pressure to migrate. The landless SC/ST caste groups largely bore this pressure to find work outside the village.

Those who bore the pressure to find work outside the village were excluded from the actual process of migration particularly when the workers needed to cross the district and state boundaries for better earnings. The need for initial migration capital and access to networks resulted in the exclusion of SC/ST caste groups from the migration process. In contrast, workers who had initial capital, such as the workers from the landholding castes and those who had members in the household who had government-salaried jobs, were able to arrange the initial migration capital to migrate outside the district and state. These workers from the landholding castes built on their interaction with immigrant workers from other regions of Jharkhand and other states in the factories to develop networks that facilitated migration. This inequality in migration led to the emergence of another set of workers who worked outside the village but at commuting distances.

Working at commuting distances became a significant phenomenon with the emergence of new settlements around the emerging market area. The new settlements developed with the increase in investment in the emerging market area. The magnitude of investment started increasing when migrant households began investing their remittances in the emerging market area. This process was compounded by the large scale of investment made by local immigrant elites. These elites were largely retired government service employees. These local elites invested not only in businesses and

self-employment but also in real estate. This increase in investment mainly by the elites changed the nature of the emerging market and it converted to an elite market. This process pushed the small investors out of the market area and forced them to search for alternative means of earning at places outside the village at a commuting distance. The expansion of the market and increasing real estate activities reduced the spatial gap between the village and the nearby towns. These processes increased the non-agricultural economic activities at commuting distances and made the process of commuting to the workplaces from the village a major daily activity.

The different dynamics of the rural transformation process in the village, which had its roots in the process of movement out of agriculture, changed the demand for skills. The sharp decline in the agricultural worker population and the excessive supply of workers for non-farm jobs increased the demand for non-agricultural skills. The change in location of the workplaces due to the pressure to migrate again altered the demand for skills. Further, the nature of the migration was a short-term process due to the dominance of assignment-based mobility. The male-dominated migration, where young male members of households migrated leaving the other household members in the village, again made the migration a short-term process. This short-term migration changed the demand for skills as the workers continuously changed the location of their workplace based on the availability of work outside the village. As the option of migration was not open to most of the older males, it influenced the occupational patterns of workers across different age groups. While a section of the older workers remained in agriculture, the younger workers moved to non-agricultural work. While the workers did seek to specialize in specific non-agricultural skills, the uncertainty in the availability of jobs often resulted in the workers being forced to learn more skills. Together with a tendency to return to agriculture when non-farm work was not available, workers tended to have multiple occupations which further altered the demand for skills.

The changing demands for skills necessitated a continuous process of learning skills. The formal approach to learning included academic education, and technical and vocational education and training. The fieldwork revealed that there were multiple barriers to attending formal academic educational institutions and accessing technical and vocational education and training. These constraints in formal education and learning skills increased the demand for informal learning. In Kusumpali, a major proportion of this informal learning took place in the workplace. Workplace learning

required access to the workplaces which were spread across locations. The differences in the rural transformation process in the village generated the same set of differences in accessing workplaces and facilitating workplace learning of skills. The SC/ST caste groups who were excluded from the rural transformation process were excluded from workplace learning. In contrast, the landowning castes in the village who benefited from rural transformation had access to workplace learning. These differences across caste groups led to intergroup inequalities. The thesis also outlines intergroup inequality among the caste groups within the landless category as some of them such as the Ansaris got the benefits of rural transformation and also the workplaces which facilitated their workplace learning. In contrast, the landless SC/ST caste groups were excluded from the rural transformation and also from the workplace learning processes.

Similarly, the women and old members in the groups who had been excluded from the rural transformation were excluded from the formal learning initiatives and also from the workplace learning, leading to interpersonal inequalities within the groups. The thesis also found that during a shock like the COVID-19 pandemic, the existing inequalities expanded. It revealed how a new set of intrapersonal inequalities emerged due to uncertain situations.

The mapping of experiences of the rural transformation process in Kusumpali reveals the dynamics of one of the prominent processes of transformation, that is, the movement out of agriculture. It also shows how the demand for skills has been changing as a part of the process of rural transformation. This thesis also shows why the formal approach to learning is insufficient to meet the need for learning generated by the rural transformation process. The thesis points to gaps in the formal skill development approach. In addition, the thesis maps the detailed process of learning involved when agriculturalists learn non-agricultural skills outside the formal system. One of the main findings of this thesis is the failure of the skill development initiatives in the country. This makes informality inevitable in the processes of learning non-agricultural skills during rural transformation.

Lists of Publications

1. Babu, A. K. (2022). To stay put or migrate: Dynamics of migration in a village in Jharkhand, India. *Transitions: Journal of Transient Migration*, *6*(1–2), 43–59. https://doi.org/10.1386/tjtm_00042_1

2. Pani, N., & Babu, A. K. (2022). Intrapersonal inequality and distance dualism. In N. Pani (Ed.), *Dynamics of Difference*: *Inequality and Transformation in Rural India*, (pp. 131–149). Taylor & Francis. DOI: 10.4324/9781003047063

Chapter I: Introduction

India has been moving out of agriculture, reflected in the share of agriculture in Real Gross Value Added declining from 64.6 per cent in 1950-51 to 18.0 per cent in 2017-18 (Ministry of Finance, 2023). This movement has also been reflected in the share of agriculture in employment, declining from 73.9 per cent in 1972-73 to 48.9 per cent in 2011-12 (Reddy, 2015). The magnitude of this movement has been reflected in the sharp change in the size of self-cultivators, which declined by 8.9 million between 2001 and 2011 (Motkuri & Naik, 2016). The extent of the movement was also reflected in the number of migrants affected by the lockdown during the COVID-19 pandemic (Dandekar & Ghai, 2020). The movement of millions of workers out of agriculture generates a demand for learning non-agricultural skills.

Skills and knowledge can be acquired through formal education, non-formal education, and informal learning (Livingstone, 2001). In formal education, the teacher determines the learning process; in non-formal education, the learner takes the voluntary initiative to learn further under the guidance of a teacher with 'an organised curriculum' (Livingstone, 2001). Informal learning is unstructured learning resulting 'from daily life activities related to work, family or leisure' (Yang, 2015). There is an increasing demand for informal learning, particularly workplace learning, due to demographic change, technological transformation, changes in skill demand, and institutional and organisational change (Manuti et al., 2015).

In India, the prominent forms of rural transformation observed due to the movement of millions of workers away from agriculture (Bajar, 2022) generate a substantial demand for non-agricultural skills to be learned. The formal approach to acquiring skills in the country includes multiple initiatives to promote academic, technical and vocational education and training (World Bank, 2008). There are multiple challenges in acquiring skills through the formal skill development system in the country (FICCI, 2012). These challenges in developing skills through formal initiatives are high, as reflected in the smaller proportion (less than 5 per cent) of the total workforce with formal training (Qazi, 2018). These challenges in formal learning generate the need for exploring alternative learning processes. This thesis explores the various learning processes

involved when agriculturists acquire non-agricultural skills. Following this introduction, the thesis explores the rural transformation process led by the movement of workers out of agriculture in the case of a village in Jharkhand. The thesis then examines the changing demand for skills led by the rural transformation process. The examination of the changing demand for skills leads us to map the processes of learning skills involved in getting employment and also the extended role of learning in innovation. This leads us to identify the differences in learning skills for employment and innovation and the nature of inequalities resulting from these differences. The thesis then examines the changing nature of inequalities during shocks like the COVID-19 pandemic.

1.1. The formal initiatives on skill development

The formal initiative on skill development in the country can be traced back to the early years of independence with the establishment of the 'National Council for Training in Vocational Trades' in 1956 and with the sanction of the Apprentices Act of 1961(Apprentices Act, 1961, 1961). The need for skill development in the country was acknowledged in the 11th five-year plan, which led to the formulation of the first National Skill Development Policy in 2009, followed by a National Skill Development Mission in 2010 (Gupta & Agarwal, 2018). In the 12th five-year plan, it was observed that the earlier skill development programmes were functioning primarily through government initiatives, which lacked association with market demand. The lack of association of government initiatives with the market called for private partnerships in skill development programmes to bridge the skill gap. The investment in vocational training was also expected to generate an empowering framework for skill development (Gupta & Agarwal, 2018). The magnitude of the task of providing appropriate skills to the growing workforce in the country, a Department of Skill Development and Entrepreneurship was formed in July 2014. This department, which was functioning under the Ministry of Youth Affairs and Sports, became a separate ministry, i.e., the Ministry of Skill Development and Entrepreneurship (MSDE), in November 2014.

The Ministry of Skill Development and Entrepreneurship then became principally responsible for all the skill development activities in the country. The primary objective of this ministry was to bring all the other ministries together for a collaborative effort

towards skill development in the country. This ministry's aims ranged from minimising the skill gap to developing technical and vocational training frameworks, upgrading skills required for existing jobs, and innovating new skills for emerging jobs (MSDE, 2023). The ministry carried out skilling activities in the country through the 'National Skill Development Authority (NSDA)', 'National Skill Development Corporation (NSDC)' and 'Directorate General of Training (DGT)' (PMKVY, n.d.-b). Each of these agencies had different roles. The NSDA was responsible for "the implementation of the National Skill Qualification Framework (NSQF) and strengthening State Skill Development Missions (SSDMs)" (PMKVY, n.d.-b). NSDC, which was a "not-for-profit public limited company" and functioned as a Public Private Partnership (PPP) model, has a wide range of responsibilities (NSDC, n.d.). It was responsible for the implementation of the skill development schemes of MSDE, the establishment of Skill Development Centres (SDCs) by financing private companies and the formation and coordination of Sector Skill Councils (SSCs) (PMKVY, n.d.-b). DGT was responsible for establishing and monitoring "long term vocational training institutions called Industrial Training Institutes and promoting apprenticeships" (PMKVY, n.d.-b).

1.1.1. Skill Development Ecosystem

According to the Skilling India report by 'Klynveld Peat Marwick Goerdeler (KPMG)' and the 'Federation of Indian Chambers of Commerce & Industry (FICCI),' the formal skill development ecosystem in the country included multiple stakeholders, those who initiated and facilitated skill development initiatives and those for whom the initiatives were made. In this ecosystem, the key bodies involved in decision-making included 21 Ministries: the 'Ministry of Skill Development and Entrepreneurship (MSDE)', 'Ministry of Human Resource Development (MHRD)', 'Ministry of Rural Development (MoRD)' and other ministries such as the Ministry of Tourism, Textiles, Tribal Affairs etc.

The broad aim of MSDE was to promote skill development and entrepreneurship and meet the skill development targets by integrating the collective efforts of the 21 ministries. This ministry has three main visions for 2025: one, economic gain for individuals and their social mobility; second, the focus of skill development would be "demand-driven and learner-centric"; and third, the focus would be on channelising

aspirational employment and promoting entrepreneurship (MSDE, 2023). The enablers, as mentioned in the previous section, like the NSDA, SSDM, and SSCs, enabled the skill development initiatives of this ministry mainly through the implementing bodies like ITIs. The main skill development scheme implemented by this ministry and enabled by the NSDC was 'Pradhan Mantri Kaushal Vikas Yojana (PMKVY)'. This was a skill certification scheme aimed at imparting industry-relevant skills to the youth. This scheme has three components: 'short-term training', 'Recognition of prior learning' and 'special project' (PMKVY, n.d.-a).

The 'Ministry of Human Resource Development (MHRD)' has been referred to as the 'Ministry of Education (MoE)' since 2020 (India Today, 2020). The primary responsibility of this ministry was to develop the overall infrastructure for the entire higher education sector, including academic, technical and vocational institutions (MoE, 2020). Apart from academic education, this ministry governed the polytechnic colleges and initiated the 'Apprenticeship Training' scheme and vocational education (KPMG & FICCI, 2014). Similarly, the 'Ministry of Rural Development (MoRD)' facilitated skill development in the county in multiple ways, of which the main skill development and placement initiative was the 'Deen Dayal Upadhyaya Kaushalya Yojana (DDU-GKY)'. The main objective of this scheme was to provide training and placement to rural youth belonging to economically and socially disadvantaged groups (NIRDPR, n.d.). Likewise, other ministries, such as the 'Ministry of Tourism' implemented a training programme known as "Hunar se Rozgar Tak" for youth aged 18 to 25 years with an educational qualification of 8^{th} pass. The 'Ministry of Tribal Affairs' was working on facilitating the vocational training to the tribals (KPMG & FICCI, 2014).

1.1.2. Limitations and challenges in the formal approach to learning skills

Despite having this complex ecosystem of skill development with multiple decision-making bodies, enablers and implementing bodies with a focus on the skill development of individuals from marginalised communities, lower economic strata, and rural areas (Maurya et al., 2023) a very small proportion of the workforce has undergone any vocational training. Out of 85 per cent of the total labour force with an "educational qualification up to secondary level", only two per cent have undergone vocational

training as per the 12th plan document (KPMG & FICCI, 2014). In total, less than 5 per cent of the total workforce in the county has received formal training (Qazi, 2018). A World Bank report estimated that there were only 2.3 per cent of the total workforce with formal skill training (World Bank, 2017). This shows the limitations and challenges of learning skills through formal skill development initiatives.

Among the primary constraints of formal skill development initiatives are the barriers to accessing training and skilling opportunities. There is a misconception that vocational education and training are meant for those who cannot succeed in general education, meaning in academic education. There is also a misunderstanding about the processes of learning involved in vocational training, that it facilitates physical rather than intellectual abilities. Further, there is a lack of interest, particularly from learners belonging to rural areas, in participating in training activities for occupations which they perceived as being lower than what is required for their place in the caste and occupation-based hierarchy (FICCI, 2012).

There are also other entry-level barriers to accessing vocational and technical courses. The minimum level of formal education is one of the key entry barriers. For example, to participate in vocational courses through the ITIs, one needs to have ten years of formal education. Further, subject and stream-specific requirements exist for the basic vocational and technical courses. These entry-level qualifications excluded many interested learners from vocational and technical courses. This entry barrier is particularly critical for learners from the poorer sections of society as they do not have the resources to complete the minimum level of education required to participate in vocational and technical courses. These learners also have to meet the opportunity cost of training instead of earning, which is the loss of earnings which they need to sacrifice during the time spent on training.

Along with these entry barriers to accessing formal education and training, there are other constraints that reduce the attractiveness of these formal initiatives. The need to migrate for the training and for jobs after the training with low starting wages leads to a lack of interest among the learners to participate in vocational and technical courses, which makes the process of mobilisation for formal training more challenging. The interest in formal training is further dampened by the absence of skill premium and other benefits even after learning the skills through formal training. Employers,

particularly in the unorganised sector, do not distinguish whether the workers have learned the skills through formal training or in the workplace through on-the-job training. There is also a lack of interest among the learners because of the skill mismatch due to a divergence between the skills demanded by the industries and the skills imparted through the formal skill development initiatives, often leading to unemployment among skilled workers. One of the reasons for this skill mismatch is that the formal initiatives have not recognised local demand; for example, the construction sector in Punjab has been employing workers from central and eastern India. This skill mismatch can be reduced if the trainers guide the trainees about the appropriate skills that need to be learned, but this process requires the training of the trainer and an increase in infrastructure to facilitate the training and placement activities (KPMG & FICCI, 2014).

The limitations of learning skills through formal skill development initiatives have also been observed in their focus on a few skills rather than a comprehensive set of skills. These initiatives primarily focus on imparting a fixed set of technical skills, while non-technical skills, such as behavioural skills, communication skills, etc., have been emphasised by employers (Sharma & Nagendra, 2016). Employers' emphasis on non-technical skills is reflected in the growing demand for generic skills, which includes many non-technical skills (Dench, 1997; Green, 2009). The nature of learning implicit in the formal system of skill development will be explored in detail in Chapter 4, but it is useful here to remind ourselves of the broad concept of learning.

1.2. Learning

The beginning of the 20th century marked a crucial milestone with the starting of scientific study to understand the learning processes by the behaviourist school. According to behaviourists, learning is the process of behavioural change, and it is explained through the relationship between the environmental stimuli and the observable response (Graham, 2000). To better understand the association between the stimuli and response, it is necessary to outline the views of two scholars (Thorndike and Skinner) within the behaviourist school. Thorndike’s view can be understood through the “law of effect”, where he argued that a positive reward strengthens the ‘S-R bond’ (Thorndike, 1933). By the S-R bond, he means a “satisfying after-effect”

followed by a response to stimuli, making the connection between them more robust (Thorndike, 1933).

On similar lines, Skinner, in his ‘operant conditioning’, provides a more elaborate view where he distinguishes between the ‘operant behaviour and the behaviour generated from the external stimuli’ and states the crucial role of the reinforcement (the external stimuli) in influencing the behaviour of the learner (Skinner, 1963). The behaviourist approach to learning is criticised as the learning process in this approach is teacher-centric. The teacher controls both learning outcomes and the learning environment (Stewart, 2021). It is also criticised as this approach assumes the learner is passive and ignores the role of learners in knowledge construction by considering them only as ‘the empty vessel’ which needs to be filled with knowledge. In this approach, the target of learning is to achieve short-term outcomes without considering the importance of teaching methods and the learner's role. The inadequate role for the elements of ‘thinking’ in learning constitutes the other limitation of this approach(Clark, 2018a).

While criticising the behaviourists, the cognitivists focus on the role of the learners’ minds in making sense of their surroundings—the thinking strategies for processing the received information while making sense of the world (Clark, 2018b). Their approach focuses on “thinking, remembering, perceiving, interpreting, problem-solving” and, more importantly, reasoning (Clark, 2018b, p. 176) rather than coping and repeating the behaviour. They refer to knowledge and skills as ‘schemata’, which are stored in one’s long-term memory. The processes such as reading, listening, observing, sense-making and doing can update the existing schemas and generate new schemas. There are multiple schemas which are connected with each other logically and stored in one’s long-term memory. Hence, when the learners encounter a new experience, they develop an understanding by comparing it with their existing schemas (Clark, 2018b).

Learning has also been seen as either intrinsic or extrinsic change. The changes brought by the learner’s effort are intrinsic processes, while the changes brought by the instruction of others and environmental imposition are extrinsic processes. However, Piaget rejected the either-or position and stated that learning is generated when learners directly interact with the environment. However, learning can be accelerated by “instruction coming from the external environment” (Lourenço, 2012, p. 284). Piaget’s emphasis on the stages of development rather than the learning process and the

universalisation of the stages limits his theory to explaining the learning process when variation is observed in the socio-cultural background of the learner (Lourenço, 2012). It does not acknowledge the critical role of social interaction in cognitive development.

Social psychologists and sociologists criticise the view of behaviourists and cognitivists on studying learning in isolation and independent from the context and situation where learning occurs. Social psychologists include the role of social and cultural aspects in the discussion of learning. One contemporary of Piaget, Vygotsky, recognised the importance of 'social interaction, more knowledgeable others (MKO) and the zone of proximal development' and saw "learning as a social process" (Lambright, 2023). In the approach of Vygotsky, support from the MKO or teacher, which he refers to as "scaffolding", is crucial for development (Verenikina, 2008). Other than 'Scaffolding', learning can occur by observing and imitating others around the learner (Bandura & Walters, 1977). In this process, a learner can learn by assimilating the practical experiences of others into his development and understanding. Learning from the experience of others is also highlighted in the theory of vicarious learning (Roberts, 2010).

Learning need not be confined and only occurs through the formal process in formal settings. It can also happen in informal settings through informal processes (e.g., carrying out ordinary everyday activities). 'Jean Lave and Etienne Wegner' coined the term "communities of practice", where individuals can experience and learn as part of different communities (Wenger, 2011). An individual can be part of many communities and learn the situation demanded knowledge as learning is context and situation-specific (Lave, 1991; Lave & Wenger, 1991; Wenger, 2011).

Knowledge creation, behavioural change, and cognitive development through experience are prominent in most definitions of learning. Learning is a process of knowledge formation where knowledge emerges "from the combination of grasping and transforming experience" (Kolb, 2015, p. 51). Learning has been defined as a process of sense or meaning-making where experience changes the existing knowledge (Fiorella & Mayer, 2015). It has also been seen as a process where previous and present experiences shape future action and knowledge. Some argue that individuals construct their knowledge by assigning meaning and value to the components of their surroundings. Others believe knowledge is constructed through social interaction and

scaffolding (Lambright, 2023; Verenikina, 2008). Hence, learning needs to be considered as a multidimensional process.

Illeris (2016) sees learning as a multidimensional process by referring to it as a 'mental process' and an 'interaction process'. There are two aspects of learning: one, it is a process of change in behaviour and knowledge, and secondly, experience is the key to this process. This thesis, therefore, functions with Mayer's definition of learning, where "learning is the relatively permanent change in a person's knowledge or behaviour due to experience" (noted in Khalaf & Mohammed Zin, 2018, p. 546). As noted, experience is the key to the learning process, and experiences can change when an individual changes occupations and workplaces. This leads us to trace the prominent forms of rural transformation in the country that have been changing millions of workers' experiences by transforming their occupations, originating from the movement out of agriculture.

1.3. Movement out of agriculture

The movement out of agriculture is evident in the macro-level data for India, with a decreasing trend in the share of the labour force in agriculture. Though this trend can be seen since independence, the magnitude of the movement has increased in the last few decades. This movement of workers away from agriculture is, however, not as rapid as the decline in the share of agriculture to GDP. The share of agriculture in GDP has reduced from 41.01 per cent to 14.50 per cent during the period 1972-73 to 2009-10, while the share of agriculture in employment has declined from 74.58 per cent to 51.76 per cent (Behera, 2015). Correspondingly, the percentage share of income and employment in the non-agricultural sector has increased from 58.99 per cent to 85.50 per cent and from 25.42 per cent to 48.23 per cent, respectively, during the same period (Behera, 2015).

The movement out of agriculture has been accompanied by a decline in the cultivator (CL)/agricultural labour (AL) ratio, which has declined from 1.19 to 0.82 between 2001 and 2011 (Census of India, 2001, 2011b). The decline of the CL/AL ratio was the result of both a decrease in the number of cultivators as well as an increase in the number of agricultural labourers.

An extensive set of theoretical explanations have been made for this movement out of agriculture. These explanations begin with the seminal work of Arthur Lewis (1954), who, using a two-sector model, explained the movement as being from a subsistence sector, mainly in agriculture, to a more modern developed sector. The movement is thus from a sector where marginal productivity is very low so that there is little or no impact on the output even after the movement of these surplus workers from the subsistence sector to the modern sector. In line with Lewis's argument, Ranis and Fei (1961) also explained the movement of workers to the 'modern industrial sector' from the 'subsistence agricultural sector' with an emphasis on the process of balanced growth of both sectors. These theories have discussed the surplus workers' host sector while explaining the development process by moving workers from one sector to another. Harris and Todaro (1970) give some additional descriptions of the process of movement of workers while talking about the process of "rural to urban migration". In this study, they have mentioned that the movement has also happened in the case of having 'positive marginal productivity' in the agricultural sector, which is an important deviation from Lewis' argument on the process of movement of workers. They argue that the main factor attracting workers to the urban area is the "expected earnings". By bringing in the movement from rural to urban areas, Harris and Todaro introduce the spatial dimension to the movement out of agriculture. Lee (1966) provides 'the push and pull' argument for the process, pointing to a variety of factors in both the origin and destination of migration. The "New economics of labour migration" moved beyond the traditional theories in explaining and documenting the reasons for the migration process. Looking beyond intersectoral differences concerning "expected earnings" as the cause for the process of migration, this body of literature identifies a large set of causes, like risk minimisation, diversification, collective decision-making, the role of family, etc., for the migration process (Stark & Bloom, 1985; Stark & Levhari, 1982).

The picture in India is further complicated by the variation in the patterns of movement out of agriculture in different parts of the country. Bajar (2017) mapped and categorised the movement away from agriculture through a district-level spatial analysis for India. In the analysis, she has shown the magnitude of each category of movement out of agriculture in the district and also maps the change in the magnitude of each category between 2001 and 2011. In her study, she categorised the transformation into four different categories. First, there is the movement of workers out of agriculture while

continuing to stay in the village. This local non-farm transformation removes the spatial dimension in the residence of the workers. Second, the workers leave agriculture and also leave the village. This leaving rural transformation involves a permanent migration away from the village to the city, following a pattern that has been explained by most migration theories. Third, workers are forced out of agriculture but do not find stable employment elsewhere. They are thus without work for more than six months in a year. In this marginal worker transformation, workers use their networks to form groups and seek work assignments in distant urban centres and return to the village after the completion of the assignment. And fourth, there are the few districts where workers return to agriculture, either because there are opportunities provided by new large farms, usually in horticulture, or because of the inability to find non-farm jobs. This entering agriculture transformation counters the overall trend of movement out of agriculture but is confined to only a few districts.

A primary consequence of this movement out of agriculture is the need for workers to learn new skills. This need for learning leads to the primary question of the thesis: What are the processes of learning involved when agriculturalists acquire non-agricultural skills?

The conditions under which they learn these skills would vary across the four forms of transformation. In the entering agriculture transformation, the workers would have to learn the new skills of horticulture but within the larger rural environment that they are comfortable in. In the local non-farm transformation, they would have to learn new non-agricultural skills while continuing to live in the familiar environment of their village. In the leaving rural transformation, the workers would have to come to terms not just with the new skills but also with the challenges of residing in unfamiliar urban areas. The most difficult conditions would be in the marginal worker transformation, where workers would have to learn new skills even as they continuously move over long distances between their homes in their villages and distant urban centres. This leads the thesis to a subsidiary question: Are there inequalities in the processes of learning non-agricultural skills, and how do these inequalities affect access to occupations?

The process of seeking non-agricultural skills need not also be confined to seeking employment. The process of learning skills can also extend to the more ambitious goal

of innovation. The thesis thus also asks whether the precise steps in learning non-agricultural skills can be used to develop new products.

Underlying the entire process of being forced out of agriculture and seeking non-farm employment, sometimes in distant places, is a considerable degree of uncertainty. The extent of the uncertainty extends beyond the workplace to the necessity of working at sites more than a thousand kilometres away from the family. The Covid pandemic raised the combined uncertainty at work and at home to a peak. The thesis uses the circumstances of carrying out an ethnography at the time of the pandemic to analyse the effects of extreme uncertainty on an already unequal and strained arrangement.

1.4. Methodology

The thesis attempts to answer the questions it raised through insights gained from a household survey and an ethnographic study of a village in Ramgarh district of Jharkhand. It refers to the village as Kusumpali[1].

1.4.1. Rationale behind the selection of field site in Jharkhand

The regional differences, in different forms of transformation result from the movement out of agriculture across states and particularly across districts, and temporal differences in various forms of transformation in one place, as observed in the work of Bajar (2017, 2020), pushed us to conduct a study in a purposively selected field site. The purposive method was followed while choosing the village as it helped plot the changing trend of the movement away from agriculture across decades and also for mapping workers' movement to different workplaces at different geographical locations. A purposive method was adopted to select a field site where a disproportionate change has been happening in the movement away from agriculture across decades and where the workers were working in different locations at varying distance from their village. In this process, a village in Jharkhand was selected to map the inequalities in the process of learning skills. The village in Jharkhand was selected from a previous survey by two researchers in 2016 at different construction sites in one

[1] The village name and respondent identities have been anonymized in this thesis.

of the developed metropolitan south Indian cities[2]. Out of the three villages of Jharkhand surveyed previously, a village was selected for conducting the survey for this thesis based on the criterion that a maximum proportion of total workers were in non-agricultural activities. The maximum proportion of total workers in non-agricultural activities was used as the criterion as the primary thrust of the thesis is to document the inequalities in the process of learning non-agricultural skills.

A village in Jharkhand was selected as the state falls under the categorisation of marginal workers, where people move away from agriculture and become marginal workers[3]. This phenomenon of marginalisation becomes the basis for 'short-term, seasonal and circular migration'. Thus, in this form of transformation, the workers' experiences change in multiple dimensions as they work at different workplaces by migrating to different places. Therefore, studying a village that falls in the marginal transformation category is appropriate. A village in Jharkhand was also selected as this state has a long history of migration from the pre-independence era (tribal workers were moving to places like Calcutta and Assam to the jute mill and tea garden, respectively, for work) to the era of independence (where the process of outmigration, particularly the temporary movement of workers became prominent) (Bhagat, 2016). The magnitude of migration from Jharkhand was high as migration reduced the state's total working-age population by 5 per cent from 2001 to 2011, as per the data of the economic survey (TOI, 2017). The migration of workers from Jharkhand to the brick kilns of West Bengal was also documented by one of the studies on seasonal migration (Shah, 2006). Jharkhand also contributed to a larger share of women migrants for domestic work in India's big cities (Wadhawan, 2013). The state also has a higher intensity of temporary and seasonal migration, which was 36 against the national

[2] The survey was initially conducted to map the labour networking pattern through which the mobilisation of workers happens from the source to the destination. The survey was initiated through both quantitative and qualitative methods, and with these methods, a survey of 180 workers was conducted at different construction sites in the destination. Later, from this survey, the larger team of the NIAS Inequality and Human Development Programme, which was financially supported by the TCS foundation, purposefully selected six villages to follow these sets of migrant workers to their origin place and document the detailed process of movement of workers. In this process, six villages were selected, out of which three were selected in such a way that shared a relatively short distance with the destination, and the other three villages were selected in a manner that shared a long distance with the destination. The villages that share a short distance were from Karnataka, and the villages that share a long distance belong to the Jharkhand state of India. In these six villages, a survey of 1174 households with a total population of 5886 individuals was conducted in 2017 by the Inequality and Human Development Programme.

[3] According to the Census of India, marginal workers are the one who works less than six months of a year.

average rate of 20 migrants per thousand population (Keshri & Bhagat, 2012). This picture of Jharkhand, where marginal workers were prominent, with a greater intensity of temporary and seasonal migrants working largely in the non-agricultural activities at varying distances from their villages made it a suitable state for conducting the fieldwork for this thesis.

1.4.2. Process of data collection

Following a preliminary visit to the village, a comprehensive household survey was conducted to establish a detailed demographic profile and map out the economic activities of all household members. This survey was also instrumental in developing a comprehensive socio-economic profile of households and their positioning within the village. The survey covered 269 households and 1262 individuals, of which 891 were above 15. Of 891 individuals, 432 were working after taking out all the individuals in domestic activities and those who were not part of the working population.

While conducting the survey, it was realised that most of the learning in the village was happening outside the formal setting. In particular, there was a preference for informal learning processes in workplaces. Hence, we planned to conduct an ethnographic study to map the informal learning processes and identify the inequalities in learning non-agricultural skills. The ethnographic study was conducted for more than 20 months in three different stages. The first round was from May 2019 to March 2020. The second round was from September 2021 to December 2021, and the third was from April 2022 to October 2022.

Through my lived experiences, several insights were gathered to answer the primary question of the thesis. Living in the village for an extensive period helped me follow different sets of workers, particularly those working in the village and at commuting distances. Insights were gathered by spending the maximum time of a day with them during their working and leisure hours.

To gather information about migrant workers, particularly those working outside the state, a weekly schedule was maintained for regular phone interaction with the coordinators of various migration networks over the phone. The coordinators were labour contractors and generally had detailed information about fellow migrant workers

in their networks. Other than interacting with these key informants, the coordinators of migration networks, over the phone, regular personal interactions were also carried out with the contractors and fellow migrant workers whenever they visited the village. The COVID-19 pandemic made it easier for me to meet with these migrant workers in the village.

1.5. Kusumpali

Kusumpali is located at a distance of around 55 kilometres away from Jharkhand's capital city, Ranchi. The village is to the northeast of Ranchi and is connected through National Highway (NH) 320 via Ormanjhi. Through a relatively longer route, the village is also connected to the capital city via the district headquarters, Ramgarh. The village is located at around 28 kilometres to the east of Ramgarh. Ramgarh district is one of the newly formed districts of Jharkhand. The district was carved out from Hazaribagh district on 12th September 2007, around seven years after the formation of the state with its separation from the state of Bihar on 15th November 2000. Ramgarh district borders Hazaribagh and Ranchi districts to the north and south, respectively. It borders Bokaro district of Jharkhand and Purulia district of West Bengal in the east, and Ranchi district to the west. Within Ramgarh district, the village is located in Gola subdivision. From the bus station of the sub-district headquarters Gola, known as DVC Chowk, the village is three kilometres away. It is located at a distance of two kilometres away from *Rajrappa chowk* of Gola.

A metalled road known as *Rajrappa road* originated from the *Rajrappa chowk* and extended to Rajrappa, connecting the village with Gola via Heramdaga village. The village was well-connected with Gola through frequent jeep and autorickshaw services. There were frequent transportation services available on *Rajrappa road* as the road connects Gola to one of the famous temples of the region, the *Chinnamastika* temple of Rajrappa. The temple is situated on the confluence of two rivers, the Damodar and Bhairavi, and is surrounded by forests and hills. It is a holy place that attracts devotees as well as tourists throughout the year, especially from other regions of Jharkhand, and from Bihar and West Bengal. This makes all the villages on the Rajrappa road well connected with Gola and Gola with the rest of the regions in the state and other parts of the country. There were frequent bus services available from Gola bus station to

Ramgarh, Ranchi, Bokaro, Hazaribagh and Dhanbad. There were also railway services in Gola from Gola Road railway station to Ramgarh and Ranchi and from there to the rest of the country. The region is connected with the rest of the country by air via the Birsa Munda airport of Ranchi.

According to the 2011 census, the total geographical area of the village was 153.4 hectares (Census of India, 2011a). The village had three *tolas* (settlements), two old and one new, as illustrated in the sketch map (see Figure 1.1). The new settlement started developing with the emergence of three large industrial units in the village and with the emergence of a market around these industrial units on both sides of the *Rajrappa road.*

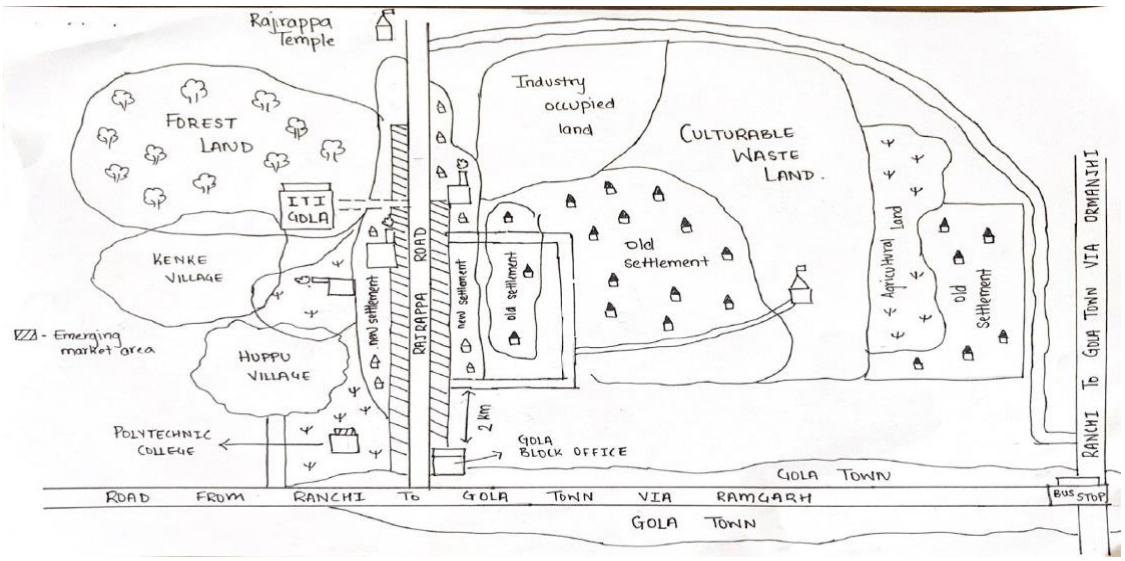

Figure 1.1. Sketch map of the field site.

Source: Drawn by the author.

1.6. Structure of the thesis

The second chapter, following this introduction, first maps the demographic, social and economic characteristics of individuals belonging to Kusumpali. It explores the rural transformation process in the context of Kusumpali. It examines the process and magnitude of the movement out of agriculture. It also explores the reasons for the process of movement out of agriculture. Further, it captures the other forms of

transformation leading to the changes in special, social and economic dimensions of Kusumpali that originated with the movement out of agriculture and extended to the emergence of diverse non-agricultural economic opportunities in the village and the rural-urban linkages. The chapter then goes into the details to explore what generates the pressure to migrate away from the village and the role of distance in migration. It shows the differences in the rural transformation process, the demand for skills caused by the entire transformation and the need to conceptualise skills.

The third chapter conceptualises different types of skills and maps out the skills required for tapping the jobs created by the rural transformation in Kusumpali. It explains in detail what skills were in demand in general and, specifically, which form of transformation demanded what skills. The changing nature of the demand for skills, the demand for multiple skills to carry out multiple occupations, and the measure of the multiplicity of occupations will also be discussed in the third chapter. The chapter ends by showing the differences in the ability to be involved in multiple occupations and the consequences of these differences on the number of skills and specialisation over skills across identity groups.

The fourth chapter maps out the different learning processes involved in learning skills required for the jobs created by the rural transformation process, focusing on the processes of learning involved in acquiring non-agricultural skills. The mapping of the learning processes starts with the formal processes of learning skills and identifying the limitations of formal learning processes. It then leads to a discussion on why there was a greater preference for informal learning processes. The chapter then maps out the informal learning processes, focusing on workplace learning, as it was the primary setting for informal learning for workers in Kusumpali. The mapping of informal learning processes then leads to identifying the possibility of differences in accessing the settings that facilitate informal learning. The chapter ends by showing that the process of learning skills is not limited to the process of tapping the jobs created by the rural transformation. It can extend to the processes of innovation. The chapter finally discusses the learning processes involved in the innovation of a new product and the process of learning involved in solving the problems associated with the products.

The fifth chapter explores the differences in learning processes and the nature of inequalities that emerged from these differences in learning skills. It starts by

identifying the differences in accessing the formal learning processes and then by mapping the differences in accessing informal learning settings, particularly in accessing workplaces. In analysing the differences in accessing workplaces, the chapter considers the differences in demographic characteristics of individuals, the differences in accessing work-related networks and other socio-economic characteristics of households and groups in the village. The chapter then explores the inequalities in the innovation process by discussing who has been able to innovate and who was getting left behind from the learning processes involved in innovation to counter the exclusion. The chapter concludes by outlining various consequences of inequalities in learning, such as wage differences, differences in living standards, and differences in the ability to cope with uncertainty due to differences in the ability to develop multiple skills through the multiplicity of occupations.

The sixth chapter analyses the impact of uncertainty on the processes of learning skills and their consequences through the experience of the COVID-19 crisis. It discusses how the crisis widens intergroup inequalities by facilitating the learning processes of some groups and denying access to the learning processes of others by leaving them unemployed for an extended period. It also explores how the crisis increases interpersonal inequalities within the groups by facilitating workplace learning of some individuals by providing them access to the workplace and excluding others from the re-emerging networks during the post-COVID period. It further explores the impact of these inequalities in learning skills created by the COVID-19 pandemic on the existing inequalities and maps the nature of emerging inequalities. The thesis concludes with a chapter that explores the various implications of its answers to the questions it raises.

Chapter II: Rural transformation in Kusumpali

Rural transformation is a multidimensional process which includes change in the structure of the villages—its spatial, social, and economic dimensions—as well as changes in the way of living—including processes of infrastructure development, occupational diversification, rural-urban linkages, and many more (Guin, 2018). Rural areas of India have been transforming significantly, and the narratives that explain this transformation encompass a comprehensive set of phenomena from "rural resurgence" to "rural distress"—from viewing rural areas as a site for widening consumption to the disheartening stories of a large number of farmer suicides (Viswanathan et al., 2012). This transformation is influenced by both endogenous and exogenous factors. The former includes factors such as soil fertility, rainfall and cropping patterns, local industry and expansion of non-farm work opportunities in the village, local knowledge for making use of resources, etc. The latter encompasses factors like agrarian relations and practices, economic infrastructures, establishment of educational institutions close to rural areas, etc. (Rao & Nair, 2003).

The transformation of rural India is reflected in its changing economic structure (Kurien, 1980), the declining share of agriculture to output and employment, the declining population growth rate in rural areas, rural-to-urban migration, agrarian and rural distress and the process of movement from farming sector to non-farming sector (Majumdar, 2020; Rao & Nair, 2003; Reddy, 2015). As noted in the previous chapter, the dynamics of rural transformation are complex. It is difficult to draw a general pattern for the country as structural transformation—reflecting the patterns and magnitude of rural transformation—varies across regions and over time (Bajar, 2020; Majumdar, 2020). This chapter explores the rural transformation of a village, which shall be called Kusumpali, focusing on the movement out of agriculture, followed by the consequences of the rural transformation on the demand for skills. But before that, it is useful to outline the socio-economic structure of the village.

2.1. Socio-economic structure of Kusumpali

As per the 2011 census, the total population of Kusumpali was 1200 residing in 267 households. Of the total population, 51.75 per cent were male and 48.25 were female. The sex ratio in the village was 932 against the state average of 948 females per thousand males. Further of the total population 15.33 per cent was the child population, individuals between the age group of 0 and 6. The sex ratio in this group was higher than the state average. The literacy rate in the village was low compared to the state average (65.4 per cent against 66.4 per cent) but the magnitude of the difference was low. However, the difference between the male and female literacy rates in the village was high as the female literacy rate was 52.2 per cent against 77.4 per cent in males. Of the total population 8.25 per cent belonged to the scheduled caste and 6.5 per cent to the scheduled tribes. Both the SC and the STs together constituted 14.75 per cent of the total population in the village. The percentage share of the SC and the STs to the total population in the village was less than the percentage share of the SCs and the STs to the total rural population in the state.[4] In the state, the percentage share of the STs compared to the SCs to the total rural population was higher but, in the village, this was reversed.

The total workers in the village constituted 39 per cent of the total population and out of the total workers, the main workers and marginal workers constituted 67.1 per cent and 32.9 per cent respectively. Of the total main workers, 66.9 per cent were engaged in agriculture and 33.1 per cent were involved in non-agricultural activities. Of the total main workers in agriculture, 79.05 per cent were cultivators and 20.95 per cent were agricultural labourers. Of the total main workers in non-agriculture, 99.04 per cent were the other workers and an insignificant number of workers were in household industry. Similarly, of the total marginal workers, a substantial proportion, 69.5 per cent were in agriculture and 30.5 per cent were in non-agriculture. However, in the marginal workers' category, the proportion of agricultural labourers to the total marginal workers in agriculture was higher than the proportion of main agricultural labourers to the total main workers in agriculture. The census data also revealed that of the total population

[4]As per the 2011 census, in Jharkhand the percentage of the SCs to the total rural population was 12.6 per cent and the STs to the total rural population was 31.4 per cent. An increase in the population of the SCs and the STs was noted between 2001 and 2011 where the SCs population had increased by 0.6 per cent and the STs population had increased by 0.4 per cent.

a substantial proportion, 61 per cent were non-workers. Of the total non-workers, 59.02 per cent were females and the rest were males.

The survey conducted for this thesis during 2019-20 found that Kusumpali was a habitant of heterogeneous groups. Multiple identity groups were residing in the village. The village had both Hindu and Muslim households, and there were many caste groups. Of the total number of individual members in the surveyed households, 67.35 per cent were Hindu, and 32.65 per cent were Muslim. The village had eleven caste groups: the Ansari, Bediya, Goswami, Karmali, Kumhar, Mahto, Munda, Nai, Nayak, Rajput and Sahoo[5]. Of these eleven caste groups, the Ansaris were from the Muslim community and all other caste groups were the Hindus. The Nayaks were the only scheduled caste and the Bediyas, Karmalis and Mundas were the scheduled tribes in the village. All other castes including the Ansaris had identified them as other backward castes in the survey. The Mahto, Ansari, Kumhar, and Nayak were the main castes of these eleven caste groups. The numeric share of these four caste groups was far more than the other seven caste groups in the village. As per the numeric share of the caste groups in the village given in Table 2.1, the total population of the village was dominated by the Mahtos followed by Ansaris, Kumhars, Nayaks and then by the members from all other caste groups.

[5] Instead of official spellings of the caste names, in this thesis we have recorded caste names as how the villagers use it locally. For example, Bediya has been used to refer to Bedia.

Table 2.1. Caste-wise distribution of the total population surveyed in Kusumpali.

Castes	*Proportion to the total number of individuals in the village*
Ansari	0.326
Bediya (ST)	0.017
Goswami	0.006
Karmali (ST)	0.036
Kumhar	0.158
Mahto	0.331
Munda (ST)	0.002
Nai	0.010
Nayak (SC)	0.083
Rajput	0.010
Sahoo	0.018

Source: Household survey by the author.

Many differences were noticed among these caste groups in language, food habits, clothing and economic activities. For example, the Ansaris and Rajputs primarily used Hindi for communication both at home and outside. However, all other castes used *Khortha* also referred to as *Kortha* for their communication. In the region, all the academic and administrative works were carried out in Hindi and English. Many local students said they got a chance to learn *Kortha* formally only in secondary school. There were differences in the clothing patterns of the villagers. For example, the Hindu married women in the village only wore *sarees* whereas the Ansari women wore *salwar kameez*.

According to the local narrative, the Mahtos were the original inhabitants whereas the other caste groups such as the Kumhars, Ansaris, Karmalis, Nayaks, Nais and all other caste groups later came to this village to provide their caste-based services to the Mahtos. According to this local narrative, all caste groups did not have the same root,

meaning different caste groups had come to the village from different regions. For example, the Kumhars had their origin linked with the Lari region, the Karmali came from the Nagpur region, the Nais were from other parts of the Gola region, and the Rajputs came from Bihar.

Initially, there were many caste groups such as the Karmalis, Nais and Bediyas who did not have a permanent place to stay in the village. Many of them used to set up their workshops at the end of the village. In the later time, the Mahtos provided some land to the Karmalis and Nais in exchange for the services the Mahtos received from these castes. The Bedhiyas got some land both from the Mahtos and Kumhars against their services to the Hindus in the village. The villagers also emphasized the fact that all these changes in caste structure had happened before 1932. It was because all these caste groups had the land record during the 1932 land record and settlement survey other than the Rajputs in the village. The Rajputs settled in the village after the 2000s with the emergence of the industrial units. The local residents also mentioned that the Mahtos were carrying out agricultural activities, the Kumhar were engaged in pottery, the Ansari were in handloom weaving and the Karmalis were involved in blacksmithing. The Nayak were the manual scavengers, the Nai were providing barbering services, and the Bedhiyas were the priests for the local deities. However, the survey data revealed the diversity in the occupational structure as can be seen from Table 2.2. The change in the occupational structure had primarily happened through the rural transformation process in Kusumpali. This rural transformation process was mainly seen after 1991 with the sharp decline in the number of workers in agriculture.

Table 2.2. Occupation structure of caste groups in Kusumpali.

Castes	*Cultivators*	*Non-agricultural wage labour*	*Private-salaried jobs*	*Own account workers*	*Others*
Ansari	2.44	58.54	24.39	13.01	1.63
Bediya	33.33	50.00	16.67	0.00	0.00
Goswami	0.00	50.00	25.00	25.00	0.00
Karmali	0.00	61.54	23.08	15.38	0.00
Kumhar	10.77	32.31	26.15	24.62	6.15
Mahto	29.24	42.69	20.47	4.68	2.92
Munda	0.00	0.00	100.00	0.00	0.00
Nai	0.00	0.00	0.00	100.00	0.00

Source: Household survey by the author.

2.2. Movement out of agriculture

2.2.1. Kusumpali: Change after 1991

As noted in the previous chapter, the movement out of agriculture in India can be traced back to the early years of independence, but the magnitude of the movement has been high in recent decades (Behera, 2015; Motkuri & Naik, 2016). An understanding of the post-liberalisation period is important as rural areas have transformed significantly in these decades (Mohanty, 2016). It is also important to map the dynamic process of the movement out of agriculture after 1991, as internal migration is accentuated in the post-liberalisation era (Rai, 2019; Rajan & M., 2020). The emergence of the rural non-farm sector as the source for multiple new jobs (Binswanger-Mkhize, 2013) further increases the importance of capturing the dynamics of the process of movement out of agriculture in recent decades. Along with these macro-level processes, the village has undergone numerous changes after 1991 with the process of movement of agriculturalists away from agriculture.

The decade between 1991 and 2001 saw a sharp decline in the percentage of main agricultural workers in the village, including both the number of main cultivators and agricultural labour, to the total number of main workers. On the other hand, an acute

increase can be observed in the percentage of main non-agricultural workers, including both the numbers of workers in the household industry and other workers categories to the total number of main workers (see Figure 2.1). The increase in the percentage of main non-agricultural workers and the decline in the percentage of main agricultural workers to the total number of main workers in the village indicated a process of movement of workers from agricultural activities to non-agricultural activities.

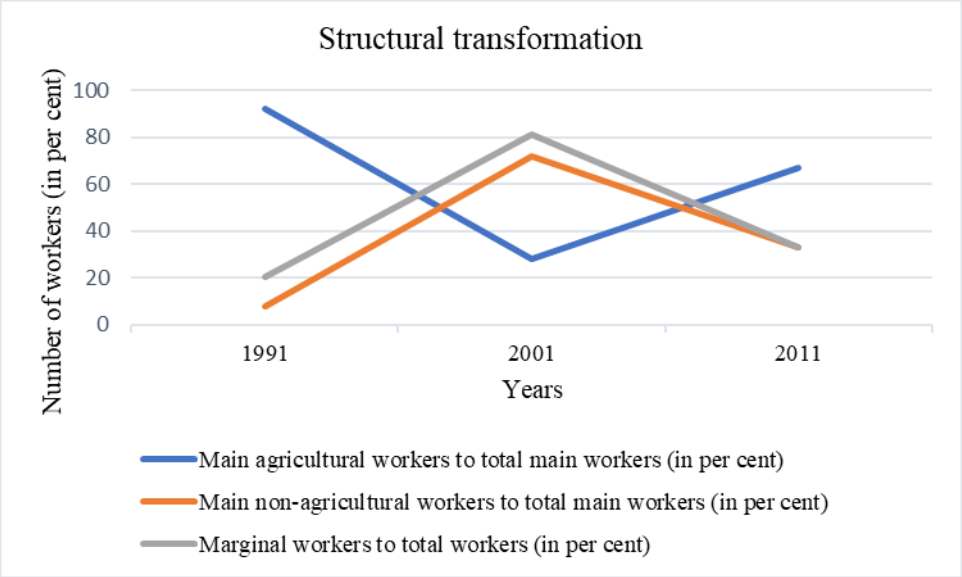

Figure 2.1. Structural transformation in Kusumpali.

Source: Census of India (Census of India, 1991, 2001, 2011b).

Along with this movement of workers from agricultural to non-agricultural activities, a sharp increase was also observed in the number of marginal workers in this decade, reflected in the percentage of marginal workers to the total workers (see Figure 2.1). This increase in the number of marginal workers indicated a process of movement of workers from the main workers category to the marginal workers category. The movement from main to marginal could have happened both in agriculture and non-agriculture. The main cultivator and agricultural labour could have become a marginal worker in agriculture. Similarly, the main household industry and other workers could have become marginal workers.

The rise of marginal workers can also be interpreted as a migration process away from Kusumpali in the absence of available work opportunities throughout the year. In this process, people could have gone away from the village for work for a short period. However, 1991-2001 did not reflect the migration away from the village. This is because the growth of the actual total population was more than the expected total population during this decade.[6] The increase in the total population greater than the expected population indicated the process of immigration and the absence of emigration from the village. However, this does not mean that workers did not migrate from the village for a short period. The census of India has limitations in capturing the process of short-term migration (Dandekar & Ghai, 2020).

By summarising the process of structural transformation between 1991 and 2001, three arguments can be made. First, the main agricultural workers could have become marginal workers. Second, the main agricultural workers could have become the main non-agricultural workers. Third, the main non-agricultural workers could have become the marginal workers. In all three cases, the occupational transformation happened within the village even though there was a possibility of occupational diversification outside the village through short-term migration, but there was no evidence to support this possibility. One argument that can be made clearly from the process of structural transformation between 1991 and 2001 is that there was an increasing demand for non-farm jobs. One can say there was a demand for non-farm jobs within the village.

The movement of large sets of workers out of agriculture and the pressure to find non-farm jobs led to the availability of cheap labour for non-agricultural activities. Along with this availability of cheap labour, there was also cheap land in the village. The value of land in the village was very low as most of the land in the village was dry land, including some forest land, grazing land, fallow land and culturable wasteland. Other than the forest land and common grazing land, a large proportion of this dry land was owned by the Kumhars and Mahtos. A part of the land had been used by the Kumhars and Mahtos for cultivating red rice and sweet potato, which had very little market value in the region. These crops were cultivated for a very short period of a year, leaving the land without any crop for most months.

[6] The total population increased from 799 to 1023 between 1991 and 2001, which increased more than the natural growth rate as the expected total population has been calculated as 996 after adjusting the natural growth rate.

Agriculture was not a viable economic activity for many of the land-holding castes due to land fragmentation and limited improvement in agricultural practices. This limited improvement in agricultural practices, particularly the lack of development in irrigation facilities and no substantial impact of the Green Revolution, reduced the value of the land. Three large industrial units had emerged conjunctively in the village due to the cheap land and labour. This had expanded other non-agricultural activities in the village and its periphery.

2.2.2. Rise of non-agriculture after 1994-95

According to residents of Kusumpali, a large industrial unit was set up in the village around 1994-95 to produce iron bars of various sizes from scrap irons and iron ores. When this industrial unit came to the village, it took the land from both the Mahtos and the Kumhars, but particularly from the Kumhars, to set up its industrial plants. The Mahtos and Kumhars eagerly agreed to give land to set up the industry as it was a piece of relatively dry land. In addition, there were no facilities to improve the fertility of the land through improved agricultural practices. So, these landowning castes sold their land at a cheaper rate to the industry. The villagers, in general, and the Mahtos and the Kumhars, in particular, were very excited to earn more from this industrial unit as this industrial plant had made an informal negotiation with the local workers to provide jobs in the industry along with the monetary compensation for the land.

In the subsequent period between 1995 and 2005, two more large industrial units were set up in the village's periphery. The second industrial plant was set up to produce the iron bars, and the third one was to produce silicomanganese. This increased the non-agricultural activities around the village. These industrial units followed a similar strategy to the first industrial unit to find land for setting up their industrial plants. The second iron bar-producing industrial unit captured a piece of common land in the village and bought some agricultural land to set up the industrial plant. The common land had been used as a place for dumping the dead bodies of domestic animals and for cremation of dead human bodies, particularly of lower castes. The second industrial unit could easily avoid the local conflict that arose for the common land by making the informal negation with the local communities and government officials. It had made informal negation with local communities through the offer for jobs in the industry in exchange

for land and made negotiations with the local government officials through various means of corruption. Similarly, the third industrial unit, which was set up to produce silicomanganese, also asked for land from the landowning communities in the region for setting up its industrial plant. The Mahtos of Kusumpali and the Lalas from neighbouring areas agreed to give their agricultural land to this industrial unit against monetary compensation and jobs in the industry.

The three industries were located on both sides of the *Rajrappa road*, with the first industrial unit on one side and the other two on the opposite side, as seen in the sketch map given in the previous chapter. With the emergence of three large industrial units, a new market emerged around the industrial units on both sides of the *Rajrappa road,* again raising non-agricultural economic opportunities around the village. The emerging market around these industrial units raised the opportunities for non-agricultural activities as it provided an opportunity for small businesses and traders. Many took advantage of the emerging market around these industrial units and started various non-agricultural activities. There were grocery shops, garment shops, tailoring shops, tea and snack stalls, digital photography studios, digital service centres, small food stalls and restaurants and many more non-agricultural activities.

In the subsequent period after 2005, more capital investments were seen in the periphery of Kusumpali as a group of small industrial units developed following the large industrial units. There were small industrial units like the water pipe manufacturing unit, drinking water purifying and packaging unit, soap factory, bread factory, etc. This further supported the non-agricultural opportunities in the Kusumpali.

The hope to get employment in the non-agricultural sector was further expanded after 2015 when a group of technical and vocational education and training centres were built in the neighbouring places of Kusumpali, which further increased the possibilities for getting non-farm jobs. These skill development centres assured placement opportunities in the non-agricultural sector after the training accomplishment. In 2016, the Gola Polytechnic College was set up outside Gola town at Huppu, a neighbouring village of Kusumpali. The Jharkhand government tool room, Gola ITI college, was set up in the Kenke village at Toyar, a neighbouring village of Kusumpali. A training centre for tailoring skills to the women of the Gola region was set up with the ‘Jharkhand State Livelihood Promotion Society (JSLPS)’ initiative at Tirla, a neighbouring village of

Kusumpali. A group of skill training centres for providing nursing and beautician training to women were established in the Gola subdistrict and other neighbouring sub-districts within Ramgarh district, and training in sewing machine operations to women and imparting electrician skills to men had come up in the neighbouring districts of Ramgarh, particularly in Ranchi and Hazaribagh.

More recently, several identity-based initiatives for providing non-agricultural skills have developed. One such identity-based initiative was made by the 'Jharkhand Mati Kala Board', in association with the Jharkhand government, in Gola ITI to provide terracotta skills to the Kumhars in the region. This initiative facilitated the occupational transformation of the Kumhars away from agriculture to a set of non-agricultural activities aligned with their traditional caste-related occupation.

The emergence of industrial units, an active market and the technical and vocational education and skill training institutes in the region not only raised the non-agricultural activities but also reduced the spatial distance between Gola town and Kusumpali. The Gola town, located two kilometres from the village, had been expanding towards the Kusumpali on both sides of the *Rajrappa road*. In response to this expansion of the Gola town and given the changes in the village, the market and a new settlement have been expanding on both sides of the *Rajrappa road* in both directions but mainly towards the Gola town.

2.2.3. Change in Occupational Structure

This movement out of agriculture, coupled with the rise of non-agricultural activities, transformed the occupational structure in the village. As per the survey conducted by this author in Kusumpali during 2019-20, very few individuals in the village participated in agricultural activities and other occupations that had engaged the previous generations. In the Ansari community, whose older generation undertook handloom weaving activities, no one from the younger generation continued in the same occupation. Similarly, members from the Kumbhar and Karmalai castes, who were earlier involved in pottery and blacksmithing activities, respectively, had the younger generation primarily engaged in other activities, or pottery and blacksmithing only as a secondary activity.

The Nayaks moved from manual scavenging to stone cutting, brick kiln work, and other wage activities. Women from the Nayak caste moved from the *dai work* (midwifery) to agricultural labourer and to other wage activities. Similarly, the Nai households were not solely dependent on the economic services that they were expected to provide to other castes as per the feudal norms in the village. In Indian villages, each caste was expected to provide a fixed set of services to other castes. In return for their services, there were "payments in cash and kind and made daily, monthly, biyearly, per piece work, and special occasions" (Gould, 1964, p. 13). According to this practice, the Nais were expected to render barbering services (Lewis & Barnouw, 1956). It has been seen the occupation of Nais had a critical role in the "Hindu ceremonial pattern" beyond their economic services (Gould, 1964). In Kusumpali, the Nais were providing the economic services of barbers to the villages and also rendering ritual services to the Hindu households during life-cycle ceremonies at the time of childbirth, marriage and death. It was noted during the stay in the village that the Nais have been diversifying their economic activities between their economic and ritual services. Some have also moved to agriculture, and many were self-employed through their own barbershops and salons in nearby urban centres.

The Mahtos were also experiencing a similar type of occupational transformation. As noted by many local residents, the Mahtos, particularly the Kurmi Mahtos, had been involved in agricultural activities for generations. During the household survey, it was noted that the agricultural activities in the village were dominated by households belonging to the Mahto caste. At the same time, this caste has also been experiencing occupational transformation across generations, as it was noted from the survey that the older generation members in the Mahto households largely carried out agricultural activities. In contrast, the younger generation members have been leaving agriculture. This form of occupational transformation, where the younger generation has not been following the older generation's occupation, was observed for all caste groups in the village.

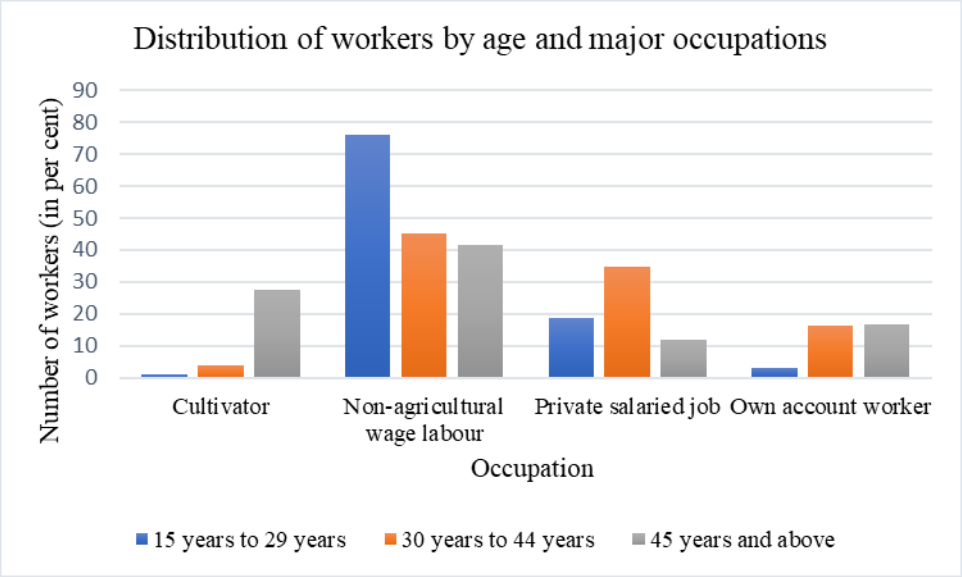

Figure 2.2. Distribution of workers by age and major occupations.

Figure 2.2 maps the occupational transformation over generations. A distribution has been made by plotting the percentage of workers to the total workers by age and major occupational categories. It clearly shows the movement out of agriculture over generations as the older generation individuals were found in agriculture with an insignificant presence of the younger generation. Moreover, the village's economy depended on non-agricultural activities as many workers depended on non-agricultural activities as their primary means of living. This is contrary to the economic structure of the village in 1991.

In 1991, the village economy was dominated by agricultural activities, as 91.9 per cent of the total main workers were engaged in agricultural activities. The dependency on agriculture sharply declined between 1991 and 2001 (as seen in Figure 2.1). An increase in the proportion of total main agricultural workers to total main workers was observed between 2001 and 2011 (see Figure 2.1). However, the decline in main workers in agriculture to total main workers was higher than the increase in main workers in agriculture to total main workers between 1991 and 2001 and between 2001 and 2011, respectively. Again, as per the survey in 2019-20, only 8.4 per cent of the total working-age population were engaged in agricultural activities. Further, these agricultural workers constituted only 16.51 per cent of the workers in the working-age population, i.e., those who were working or had the potential to work (including the unemployed

individuals) after excluding the individuals in the domestic activities and the not-working population. This structural transformation clearly showed the continuous movement of agriculturalists away from agriculture, even though the movement was not even across decades.

Again, the more significant percentage of individuals in the category of other wage labour, private salaried jobs, and own account work reflected the process of occupational transformation over generations and indicated a process where one can say that the current generation has been involved in a different set of occupations than the previous generation. The involvement in wage and salaried jobs indicated a movement away from caste-related occupations over generations. As this thesis is based on a cross-sectional survey and not on time series analysis, the study makes no claims about the movement away from caste-related occupations over generations. But one form of transformation was clear, i.e., the generational movement from agriculture to non-agricultural activities. Individuals had taken advantage of the non-agricultural economic opportunities generated with the emergence of the industrial units and a market around these industrial units to make the transformation from agriculture to non-agricultural activities.

The occupational transformation from agriculture to non-agricultural activities facilitated through migration away from the village was reflected between 2001 and 2011. Between 2001 and 2011, the total population in the village was less than the expected total population[7]. Workers have also been going outside the village for short periods, especially among around one-third of the total workers who were in the marginal workers category. The survey data also supported the migration of workers away from the village for work as it was found that 18.6 per cent of the total workers in the working age category were working outside the village. Many more could be working outside the village as this migration figure excluded those working outside the village but within commuting distance so that they continued to reside in the village.

[7] The total population in the village increased from 1023 to 1200 but is expected to increase to 1242 if it has increased in natural growth rate.

2.3. Pressure to migrate

It has been noted earlier in this chapter that access to non-agricultural work opportunities available in the village was unequal. Those at the top of the economic and social hierarchy in the village were easily able to move from agriculture to non-agricultural activities. The majority below were excluded from this occupational transformation. This exclusion from rural non-agricultural activities created pressure for migration away from the village in search of non-agricultural opportunities outside the village.

2.3.1. Dominance of landowning caste in local industries

The landowning caste groups in the village, i.e., the Mahtos and Kumhars, largely dominated the non-agricultural opportunities available in the local industrial units. The Mahtos and the Kumhars successfully made the occupational transformation as they had made informal arrangements for jobs in the industries in exchange for their land to the industries. This informal arrangement for employment in the industry was also extended to those who were initially engaged in the construction process of the industries. However, this category, too, was dominated by workers from the Mahto and Kumhar castes. In this process, the Mahtos and Kumhars had greater access and dominance over the non-agricultural economic opportunities available in the local large and small industrial units, as they constituted 68 per cent of the workers from the village working in the small and large industrial units.

As landholding was the basis for access to the non-agricultural economic opportunities available in the local industries, it excluded many villagers from accessing the jobs available in the local industries. Those excluded were not small in number, constituting 52.04 per cent of the total number of households. The initial negotiation with the industries for jobs in exchange for land largely excluded workers at the bottom of the social hierarchy in the village, particularly workers from the SC and the ST categories, as 84.2 per cent of them were landless. Exclusion from access to non-agricultural economic opportunities in the local industries put pressure on those excluded to find

non-agricultural opportunities outside the village, ultimately leading to migration away from the village.

2.3.2. Immigration of skilled workers

Local narratives indicated that from the beginning, there was resistance from the owners of the large and small industrial units to hire local workers. The cause was mainly the accidental death of two workers in one of the iron bar-producing industrial units. This incident led to a conflict which the industry failed to resolve. It bore a considerable cost in the process, and the industrial plant was finally closed just a few years after its establishment. The industrialists could not solve the local conflict as they were not from the local area, belonging to other districts or states. By denying access to local workers, the industrial units sought to minimise uncertainty. The industries considered the magnitude of the cost to be higher in case of any accident of local workers in the industries compared to the workers migrating from different states to these industries. The industries justified this practice by highlighting the skill difference between the local and immigrant workers, particularly the initial skill difference between these two sets of workers.

Local residents noted that these industrial units have been importing a large set of skilled labour from different states of India and excluding the local workers due to a lack of initial technical skills required to carry out various activities in the industrial plants. When the industries were at the construction stage, the highly skilled work was carried out by the immigrants from Delhi, West Bengal, Bihar, Odisha etc. The local workers were confined to semi-skilled and low-skilled work. The immigrants did high-risk and higher-paid work, such as setting up the complete iron structure of the large industrial plants. Similarly, fixing the various machines of the small industrial units was done by the immigrant workers from different states, while the local workers did the masonry work and other lower-end construction activities.

The exclusion of local workers from the technical and higher-paid jobs continued even when the large and small industrial units started functioning. For example, in the first iron bar-producing industrial unit, three chemists were involved in testing both the quality of raw materials and final products belonging to different regions. Two were from Bihar, and one was from Jharkhand but not Ramgarh district. The chemist work

in large industries was one of the highest-paid jobs after the managerial jobs. A few local workers from Kusumpali who were working in the large industries worked either as helpers under the skilled immigrant workers or in those activities which required more physical ability than technical skills. One primary reason for this inequality, both in types of work and monthly payments between the local and immigrant workers, was the difference in education and informal training.

The nature of the work and the low payment offered to the local workers in the local industrial units ensured a large set of workers, particularly those with more years of formal education, did not get employed in the local industries. The long working hours, usually 12 hours a day, sometimes extended up to 24, 36 and 48 hours when the shifts changed from day to night and vice-versa, with a maximum payment of ten thousand in a month. Long working hours were also common due to the absence of the co-workers, which were referred to as extra shifts due to the absence of the 'reliever'. The lack of additional payment for overtime created pressure on individuals with relatively more years of formal education and better social and economic status to find non-agricultural opportunities in distant places away from the village.

Sometimes, it was observed that the local contractors, who were in charge of hiring workers and managing conflicts, were biased towards the immigrants rather than the local workers. The local contractors were biased towards the immigrant workers to maximise their commission by getting a double share, one from the industry and another from the immigrant workers.

The rights of the local workers concerning access to opportunities in the industrial plants were also influenced by the local contractor. For example, a person belonging to the Ansari caste was the contractor for one of the large industrial units which produce silicomanganese, where the local residents were protesting for jobs and to control pollution against this industrial plant. The industrial unit sent the contractor to negotiate with the protestors. Since the local contractor was more aware of the negotiation process with the local population and their immediate needs, he was able to resolve the conflict. However, the negotiation through the local contractor largely led to minimal monetary compensation rather than a job in the industrial plants. This added to the pressure to migrate.

2.3.3. Low absorption capacity of small industrial units

The small industrial units located in the periphery of the Kusumpali had a very low capacity to absorb a large set of workers interested in the rural non-agricultural sector. As in the case of large industrial units, in the small industrial units, too skilled jobs were taken by the immigrant workers and unskilled work was left for local workers. For example, in the water pipe manufacturing unit located in Kusumpali, the technical activities were done by a person from West Bengal, while a worker from the Mahto caste from Kusumpali worked as a helper to the skilled worker from West Bengal. The capacity of this water pipe manufacturing unit was so small that it could be managed by just two regular employees, with some local casual labour required during the loading and unloading of raw materials and final products.

The small industrial units were run by family labour and workers from the same identity group. The water purifying and packaging unit located in the village employed family labour. Similarly, the bread-baking unit in Kusumpali was owned by an Ansari family and hired workers from the Ansari caste. The low absorption capacity, the prevalence of family labour, the preference of workers from the same identity group, and the higher availability of lower-end jobs raised the pressure for migration among the local workers.

During the study, it was found that only 2.5 per cent of the working-age population, which is about 4.5 per cent of the workers who were working and had the potential to work, were engaged in the local industrial units. A group of workers, with an average age of 37.5 years, worked in the local industrial units.

2.3.4. Emergence of an elite market

An elite market emerged around the three large industries on both sides of the *Rajrappa road*. Many migrants, particularly government employees and other local elites, started making significant investments in various businesses and real estate activities in the emerging market area. The initial investment was high as the land price on both sides of the *Rajrappa road* suddenly increased with the emergence of the industrial units. Only those who had land or could buy land in that market area could start various businesses and other own accounts. Similarly, the types of shops that emerged other

than the small tea and snack stalls required a large investment. These investments expanded the market and increased the land price in the emerging market area. This excluded a large section of the local population and also pushed away from the emerging market area many of those who had small businesses. Starting any sort of non-agricultural activities in the emerging market demanded a relatively high initial capital, which most of the people from Kusumpali did not have. Investment in the emerging market area was thus largely confined either to those who had land or those who had some government employees in the family. The rest of the investment was from immigrants.

According to the local residents, the highest land-holding household of the Mahto caste considered the '*Choudhary'* in the village, started the first restaurant beside the large industrial plants. It was easy for the '*Choudhary'* to start the business as they had the land near the large industrial plants. Similarly, an Ansari household whose first generation was in government jobs bought a piece of land in the emerging market area, started a grocery shop and then converted that to a general store.

While the market generally excluded those who did not have land or the capacity to raise capital, there were some exceptions. A Karmali household ran a tea and snack stall in a rented room in the emerging market area. However, when the market started to turn into an elite market, it increased the competition for small investors like the Karmali household. The head of this Karmali household, Budha Karmali, ran the stall but could not invest on a large scale to expand his shop, unlike the Ansari household, who converted the grocery shop to a general store. This Ansari household had three brothers, of which the middle brother, Saji Ansari, ran the shop with some help from his brothers. Saji's father worked in the Central Bank of India as a government employee. After Saji's father died, the mother got the job. His mother took early retirement and got a superannuation benefit, with which they converted their grocery store to a general store where they sold grocery items, petrol and diesel, and provided digital services. This sort of large investment could not be made by Budha to expand his business, and he had to find other options to supplement his household earnings. He started working as a mason, and his wife and children managed the shop. This need for diversification of household income due to the inability to compete with the elites pushed many self-employed villagers in the emerging market area to find work outside the village, resulting in increased pressure to migrate.

This process gained prominence after 2015 as many immigrants, particularly retired government employees, started capturing a larger portion of the emerging market area. The elite immigrants created varied forms of property, further increasing land value in the emerging market area. The elite immigrants invested in large businesses such as large electronic stores, wholesale grocery stores, wholesale garment stores, cement and iron bar dealerships, tent house and catering businesses, etc., and invested in construction and land brokerage activities.

Some of the elite immigrants built big houses and stalls for rent, and others worked as brokers for buying and selling land in the market area. For example, a retired Central Coalfields Limited (CCL) engineer belonging to the Ansari caste from a neighbouring village purchased a piece of land in the emerging market area. During 2018-19, he constructed a two-storey big house with six stalls in the front facing the *Rajrappa road*. He started a large electronic store in two of these six stalls and rented out the other four stalls to shopkeepers who were not from Kusumpali. The rest of this two-storey building was converted into residences, which he rented to the government employees of the region and the managerial staff of the large industrial plants. Many government employees, such as schoolteachers, bankers, etc., preferred to rent houses in the emerging market area rather than in Gola town as the rent in the market area was relatively low compared to the Gola town. Similarly, another retired CCL employee from the Ansari caste belonging to the same village constructed a big house in the market area and started a wholesale garment shop, and the rest of the house was rented out as residences for those with salaried jobs in the region.

Some of the elite immigrants started land brokerage activities in the market area. A person who migrated to the village from Gola, belonging to the Ansari caste, worked as a land broker. He worked as a motorcycle mechanic in Gola and later got a piece of land from his maternal family who was from Kusumpali. After moving to the village from Gola, he shifted from being a mechanic to land brokerage in the market area. He bought land in the emerging market area in the neighbouring villages of Kusumpali and then sold the land at a higher price to the elite government employees of the region who wanted to invest in the emerging market. In this process, he managed to arrange some initial capital with which he invested in a garment shop for his younger brother in the market area, bought two four-wheelers for his sons that they rented and also started

investing in construction activities through contracts for construction to local small contractors.

Another reason for the exclusion of a large part of the population of Kusumpali from the market area was that most of the land where the market had developed was owned by people from Gola, Kenke and other neighbouring villages, other than a few portions of land owned by the Mahtos, Kumhars and Ansaris of Kusumpali. The one who had land in the emerging market area could easily start non-agricultural activities like *Choudhary's* restaurant, Ansari's general store, garment shop, etc. There were a few more, such as the members of a household belonging to the Kumhar caste, who ran a digital studio of photography and a coaching centre for school students in the market area. This Kumhar household could start these non-agricultural activities as they had a piece of land in the market area and also had one member in the household with 15 years of formal education.

The dominance of landless households in the village and the fact that very few workers (0.7 per cent of total workers) were in government salaried jobs excluded a large set of villagers from the non-agricultural activities in the emerging market. The inability to compete with the elite immigrants, particularly the retired government employees, both in terms of investment in land and in starting non-agricultural activities, pushed a large proportion of workers of Kusumpali to find non-farm jobs outside the village.

2.4. Types of migration

The pressure to migrate away from the village as a result of the occupational change from agriculture to non-agricultural activities had been generated by a variety of reasons. There was the presence of a large set of households in the landless category, the exclusion from the jobs available at the local industrial plants, and the exclusion from the emerging market around the industries. The skewed pattern in landholding toward certain caste identity groups (see Figure 2.3), the biases in accessing industrial jobs in favour of the landholding castes and the exclusion of certain classes and castes from the local market, etc., created this pressure to migrate.

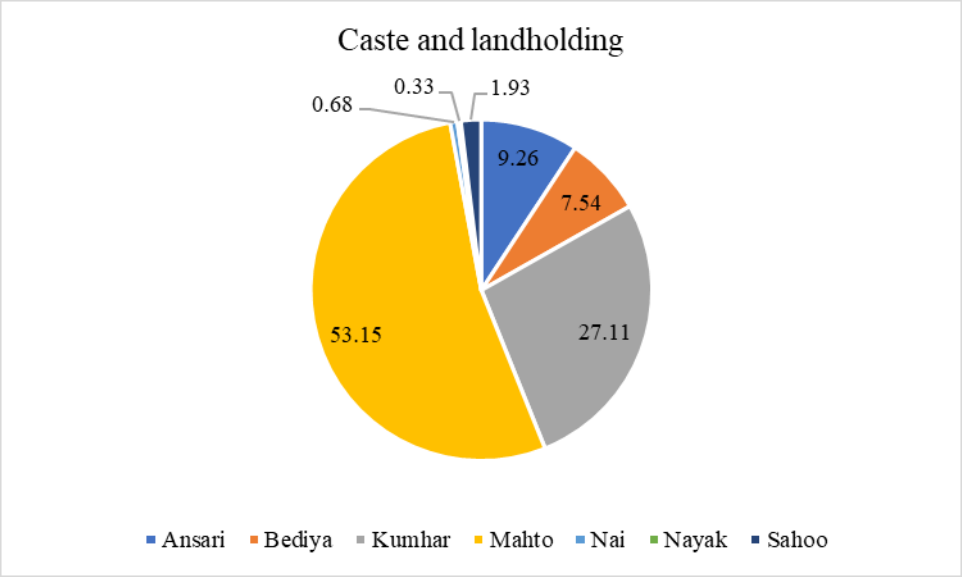

Figure 2.3. Caste-wise landholding pattern in Kusumpali.

This led to the movement of workers away from the village. However, the spatial and temporal components of migration depended on the position of individuals and households in the social and economic hierarchy in the village. The successive sections will discuss the detailed migration patterns and the profile of the left behinds. However, a common component in the process of migration away from the village was the emergence of short-term migration. The strategy of short-term migration was facilitated through continuous interaction with the source (the village) and the destinations located outside the village. The migration strategy was short-term as the duration was short, and it was different from circular migration as the destinations were not fixed and not confined to a seasonal pattern.

While plotting the economic activities along with the location of the workers' workplaces, it was found that there were three forms of movement of workers away from the village. One of the workers who commuted daily to workplaces located at short distances, within the district, and usually in the neighbouring rural areas and nearby urban centres. The second form included the groups of workers who could travel back to the village at short notice; it included all the workers working within the state but outside the district. The last category consisted of migrants who were working at long distances, particularly outside the state. The first group will be referred to as

workers working at commuting distances, the second as the intermediate-distance migrants and the last group as the long-distance migrants.

2.4.1. Dominance of short-term migration

The landholding households used migration as a strategy for occupational diversification. The survey of the village for this thesis revealed that the landholding households distributed their family members and working hours over agricultural and non-agricultural activities. The first generation and female members of landholding households were carrying out farming activities, and the second generation, particularly the young male members, were into non-agricultural activities when these activities were located at a long distance from the village. When the non-agricultural activities were within commuting distances, the second generation distributed their working time among the agricultural and non-agricultural activities based on the demand for labour.

Since the second generation needed to have continuous interaction with the village and workplaces outside the village, the migration process was short-term. When young male members worked in distant urban centres, they needed continuous interaction with the village to address the needs of their families who lived there in the village. Additionally, these migrant workers never perceived their workplaces as home, so after the completion of one assignment, they came back to the village and migrated again once they got another assignment, which made the migration process a short-term strategy to maximize household earnings, minimise risk in agriculture, and reduce the cost of migration. These migrants maximised the real gain by earning in the big cities with relatively higher wage rates, maintaining a minimum standard of living there, and spending most of their earnings in the village at lower rural prices. When workers diversified their daily working hours between agricultural and non-agricultural activities by commuting to their workplaces for non-agricultural activities every day while living in the village, migration was again a short-term process.

2.5. Kusumpali as an example of the marginal form of transformation

There was a dominance of short-term migration in the village as the village was an example of the marginal worker transformation. It is a form of rural transformation associated with the presence of a large number of marginal workers (Pani, 2022, p. 49) who had to resort to short-term migration. During 1991 and 2001, there was a sharp increase in the percentage of total marginal workers to the total workers, which raised the pressure for migration (see Figure 2.1). People used migration as an escape strategy to move away from the village to find work opportunities in urban centres. However, the process of migration away from the village was not observed in Kusumpali during the decade from 1991 to 2001. This could be because of the limitation in calculating migration figures in India, as it has limitations in capturing short-term migration. It could also be because of a lack of networks that facilitate the migration of workers away from the village.

The escape strategy of short-term migration emerged from 2001 to 2011 when the three large industrial units started functioning in the village and encouraged the immigration of workers from other states to this village to work in these industries. The immigration of workers from other states facilitated the migration process of workers from Kusumpali away from Jharkhand. It helped them develop initial contacts and networks outside the state. However, the ability to be part of the networks developed through the immigrant workers depended on the interaction of local workers with the immigrants. The interaction between the immigrants and the local workers primarily occurred while working in the local industrial plants and the shops, stalls, and restaurants near these factories in the emerging market area. Tea stalls, wine shops, and village markets were important settings for their interactions. The underlying processes in their interaction were shared interest in technical skills, interpersonal skills, and the efforts of local workers to help immigrants both at the workplace and outside. However, all these factors that determined the interaction primarily depended on the ability of local workers to access the jobs in the local industrial units. There were differences in the forms of transformation affecting individuals and households as they engaged in different economies with varying levels of education and skills demanded by each form of transformation.

2.6. Differences in transformation

2.6.1. Agriculture

This economy functioned with a large set of 'owner cultivators', a small group of agricultural labourers, and a small group of sharecroppers, i.e., the non-farming landlords. The cultivators with small pieces of land employed their family members and members of their extended family to carry out agricultural activities. The small cultivators often hired members from the extended family during harvesting, not for payment in cash but for payments in kind. As the size of land in the village ranged from 0.02 acres to 2.5 acres, and the households with more than one acre of land constituted only around 14 per cent of the total land-holding households, the relatively large cultivators also hired agricultural labour for a short period, particularly during the harvest. These relatively large farmers also employed their family members, members from the extended family, and members from their caste group. In rare cases, these relatively large cultivators approached the agricultural labour of other caste groups by paying wages in cash.

According to the local narrative, the agricultural activities in the village were earlier carried out by the Mahtos. It had also been said that within the Mahtos, the Kurmi Mahto were the ones who largely carried out the agricultural activities. The survey data in this thesis also confirmed this dominance of the Mahtos in the agricultural economy, where it was found that out of the total workers who depended on the agricultural economy for their livelihood, 78.6 per cent of them were Mahtos. The Mahtos dominated the agricultural economy as they had been dominating the landowning category in the village. They were the traditional landowning community, constituting 51.2 per cent of the total landowning households in the village.

While there was place for some non-Mahtos in agriculture, there were some castes that were excluded from the agricultural economy. The workers in agriculture belonged to a group of four different castes – Ansari, Bediya, Kumhar and Mahto – whereas the village had eleven different caste groups. It was largely the workers of the scheduled caste and the scheduled tribes who were absent in the agricultural economy, other than the Bediyas. The Nayaks, Karmalis and Mudas were absent in agricultural activities. A major reason for this absence was that 84.2 per cent of them were landless. The ones

with land in the SC/ST group belonged to the Nayak and Bediya caste, where the Nayak households had very small landholdings (less than one acre), which was typically not economically viable for them to cultivate. The Bediyas had relatively large pieces of land, but this land they had received from the villagers for their services as priests for the local deities. The transformation in occupations over generations, saw the Nayaks moving away from manual scavenging, stone cutting, and other non-agricultural activities; the Karmali left the work of blacksmithing and moved to other activities in the non-agricultural sector. While some of these workers worked as agricultural labourers, the duration of this work was very short. As it was only for a few days during harvesting, it was not captured in the primary or secondary economic activities during the household survey done in the village. There were, however, some workers who had entered agriculture due to the structural change in their earlier occupation, including a group of workers who were not able to move away from the village for employment and had not been able to tap the non-agricultural options available at the local level.

The agricultural economy included workers with varying social and economic identities, including workers from various castes, ages, genders, education, and marital status. Workers in the agricultural economy were relatively older (with an average age of 48.4 years) and relatively less educated (with an average of 2.4 years of formal years of education). These workers were all married, and the agricultural workforce had a prominent place for women, who accounted for 54.3 per cent of the total agricultural workers. The age, gender, marital status and fewer years of formal education forced them to remain in agricultural activities. These factors also acted as a barrier to the movement of these workers away from the village to tap the work options available outside the village. It was also found that none of the members of the second generation from households with at least one member from the first generation in agricultural activities depended on agricultural activities for their livelihood.

2.6.2. Local industries and emerging market

Since the ability of the local workers to get a job in the local industrial economy depended on the initial association with the industries through the arrangements over land, the transformation consolidated inequality among different castes. Some castes

had been able to get a job in the local industries, and some identity groups had been excluded from this process of getting absorbed into the local industrial economy.

The landowning castes like the Mahtos and Kumhars constituted a major proportion (68 per cent) of the workers engaged in the local industries. Correspondingly, the landless scheduled tribes like the Karmalis and the Mundas were absent in this economy. The ability to invest in the emerging market area, which required initial capital, was also biased towards some identity groups, where the initial capital depended on the landowning and the engagement of the members of the first generation on government salaried jobs. The ability to get absorbed in the small as well as the large industrial units required initial job-specific skills or the ability to spend an extended period of time learning job-specific skills. This ability was associated with the land-holding pattern as the landowning workers could distribute their time between agricultural and non-agricultural activities during the learning period.

The workers who could get a job in the local industrial economy were relatively older, with an average age of 37.5 years. The average formal years of education were also relatively low (5.8 years). Those who were left out recognized the possibility of higher wages in distant urban centres. The local wage rate in the industries, which was usually Rs 200 per day, had been compared with the expected wage rate of more than double the local wage rate in urban areas. This encouraged the workers left out of the local industry to travel varying distances away from the village for employment.

2.6.3. Workers working within the commuting distance

This local non-farm economy absorbed a larger proportion of workers (30.6 per cent) of the total working-age population. This non-farm economy functioned with groups of self-employed workers, other wage labourers, and private salaried workers. These workers were relatively older as compared to the workers who were working in the intermediate and long-distance places but younger than the workers who were working in the agricultural activities in the village. The average age of this set of workers was 36 years. They were also less educated, with their average years of education being 6.1 years, and about 83 per cent of them were married. Out of these local non-farm workers, 41.2 per cent had land. The availability of agricultural land, the age, marital status and the lower years of formal education made them work in the local areas at commuting

distance. The workers in this group were engaged in tailoring, masonry, as JCB, auto and bus drivers, in plumbing, and in brick-making.

2.6.4. Intermediate distant migrants

The set of workers who were working outside the district were relatively younger than the ones working within the district. This group largely included a set of workers belonging to the prominent castes, the Ansaris and the Mahtos. It excluded workers from castes lower in the caste hierarchy, such as the Nayaks. The Nayaks, along with a significant proportion of the socially and economically backward castes, had been excluded from this process of movement outside the district. It was reflected in the low levels of Karmali and Badiya, particularly the SC/ST caste groups, being largely excluded from this form of movement.

The exclusion was, however, not only a matter of castes. Even among the castes who had access to migration, not all individuals could be a part of this form of transformation. Only younger workers with relatively more years of education had access to this migration. It is reflected in the fact that the formal years of education of this set of workers was more than the one working within the district. This group of workers' average years of education was 8.7 years against 6.1 years for the workers working within Ramgarh. It also included a substantial number of unmarried workers. This group of workers generally moved outside the district to engage in non-agricultural activities like the work of a driver, mason, and plumber and used those initial skills for further movement through step-wise migration.

2.6.5. Long-distance migrants

This group worked at distant places outside the state and largely belonged to the two of the prominent castes in the village, the Ansaris and the Mahtos. It also included a group of workers from the other castes, of which most were Kumhars. It excluded a large set of workers belonging to SC/ST caste groups, including only two of these workers, one a Nayak and the other a Bediya. The Karmalis were excluded from this form of migration.

This group included younger workers than the ones working within the district and state, as the average age of this group of workers was 27.1 years against 28.9 and 39.1 for the migrants working within the district and those working within the state, respectively. It also required relatively more formal education. The average years of formal education of long-distance short-term migrants was 9.1 years against 8.7 for migrants within the state and 5.3 for migrants within the district. It also included a large set of unmarried workers, with around 50 per cent of these workers being unmarried. The movement to long distances required initial migration, and 71.6 per cent of these workers belonged to landowning households.

2.7. Nature of dominance of caste identity

The participation of individuals in the transformation from agriculture to various forms of non-agricultural activities was largely influenced by the status of households in the socio-economic hierarchy of the village. This thesis borrowed a formula developed on the Degree of Identity Dominance (DID) by Pani et al., (2022) to explore the nature of the dominance of caste identity groups in Kusumpali. According to them, the DID of an identity group in a village can be calculated by taking an average of three dominance indicators: economic, political, and knowledge. For simplicity, this thesis refers to political dominance as numeric dominance, knowledge dominance as educational dominance and economic dominance as it is.

The economic dominance has been calculated by taking the proportion of the sum of the 'Index of the Distance from Absolute Deprivation (IDFAD)' of an identity group to the total IDFAD of all households belonging to all identity groups in the village. The IDFAD has been calculated by first multiplying the relative weights of all basic assets a household holds with the number of items of the corresponding basic asset held by the household. This multiplication was done asset by asset, and all the weighted values of all assets were added together. The relative weights were calculated by taking the price of the most expensive asset as equal to 100 and normalizing the other assets to that scale. The price taken for each asset was its minimum market price. The IDFAD of the household was the sum of the normalized value of the basic assets held by the household. The economic dominance of identity groups in Kusumpali has been

calculated as the sum of all IDFAD of households belonging to a caste divided by the sum of the total IDFAD of all households belonging to all caste groups in the village[8].

Similarly, the thesis uses the formula developed by Pani et.al. (2022) to measure the numeric dominance of caste identity groups in the village. According to this formula, the numeric dominance of an identity group is the total number of individual members of all households belonging to a caste to the total number of individuals in the village. Likewise, the educational dominance of a caste was calculated by taking the sum of years of formal education received by all the individual members aged 15 and above of all households belonging to that caste to the sum of total years of formal education received by all individuals aged 15 and above in the village.

When the average of all these three dominance indicators (i.e., the economic, numeric and educational dominance) was calculated to measure the DID of the caste groups in the village, it was noted that the Mahtos have the highest DID value, followed by the Ansaris, then by Kumhars and at last, the Nayaks and all other castes. Again, this thesis used the criteria of Pani et al. (2022) to categorise the caste groups based on their DID value. According to them, if the DID value of a group is above 0.5, then the group can be considered a dominant identity group. If the DID value ranges between 0.2 and 0.5, the group can be categorised as a prominent identity group. If the values lie below 0.2, the group can be categorised as other identity groups. However, caste groups in the scheduled castes and scheduled tribes cannot be categorised in this manner as they were ritually discriminated against, even if they have better DID value. So, Pani et al. (2022) have categorised the identity groups under the SC and ST categories as non-ritual dominant if the DID value is above 0.5, non-ritual prominent if the DID value falls between 02 and 0.5, and other SC/ST if the DID value is below 0.2.

[8] The household survey used for this thesis included information on ten basic, durable assets generally held by a rural household. These basic, durable assets were cycles, motorcycles, mobile phones, colour TVs, cows, refrigerators, radios, tillers, cars and tractors. The survey collected information on the number of these household assets. Then, the relative weights were calculated by taking the proportion of the minimum price of these assets to the minimum price of the highest-priced asset in the village. In this case, the price of the tractor has been taken as the highest-priced asset, and relative to the minimum price of the tractor, the weights for other assets have been calculated. For example, if the minimum price of a tractor is Rs 250000, and the minimum price of a mobile phone is Rs 1000, then the weight given to the mobile phone will be 0.004. This weight of mobile phones was then multiplied by the number of mobile phones held by a household. This process continues for all other assets held by a household, and all these values are added together, which gives the IDFAD of a household.

The categorisation of the DID value of caste groups in Kusumpali based on the above criteria reveals that there were no dominant identity groups and only two prominent groups, the Mahto and Ansari. The Kumhar and all other non-SC/ST castes can be categorised as other identity groups. The SC and ST caste groups have very low DID values far lower than 0.2, so these caste groups can be categorised as other SC/ST (see Figure 2.4).

This dominance indicator and dominance categorisation show the positioning of the caste groups in the village. The differences in the position of households belonging to different castes lead to differences in access to learning processes, particularly to workplace learning as seen in differences in the various forms of transformation. These differences can lead to inequalities in learning skills. The inequalities can also emerge in the other way around like the dominance of an identity group over certain learning processes can change their positioning in the village. The dominance of an identity group over the learning processes by controlling access can be possible by their controls over the learning setting by controlling and coordinating networks that facilitate access to the learning settings. Controlling the dynamics of the learning settings can make some groups more dominant even though they belong to a landless caste or have less DID value. In the subsequent chapters, we will see how some castes have emerged as dominant groups by controlling the networks that facilitate access to the jobs created by the rural transformation process and provide opportunities for workplace learning.

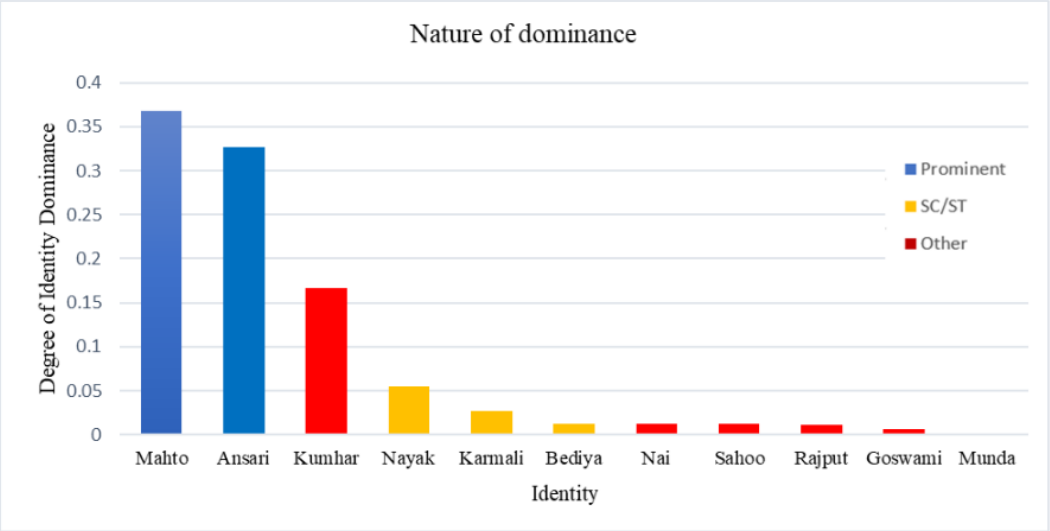

Figure 2.4. Nature of dominance of caste identity groups in Kusumpali.

2.8. Role of education in transformation and demand for skills

Table 2.3. Average years of education across location of workplaces.

Transformation	*Agriculture*	*Rural industries*	*Commuting workers*	*Intermediate-distance migrants*	*Long-distance migrants*
Average years of formal education	2.4	5.8	6.1	8.7	9.1

Source: Household survey by the author.

Apart from the status of the household, the education of individuals also played an important role in determining their participation in the rural transformation process. At the heart of the ability of individuals to economically benefit from the different forms of transformation was the years of formal education. The level of education critically influenced the entry into the migration process. The level of education also influenced the exclusion of workers from the higher-end jobs in local industries. The difference, as observed in types of non-agricultural activities located both in and outside the

village, required different skills along with formal education. The migration through an identity-based network and the consolidation of the network demanded different skills, which will be discussed in detail in the next chapter. The next chapter will focus on the changing demand for skills in the rural transformation process. It will discuss the skills that were needed to function in the rural non-agricultural economy and the skills that were needed to migrate away from the village.

Chapter III: Demand for skills

3.1. Conceptualisation of skills

Skill has been defined in various ways over decades (Tomporowski, 2003). One of the broad definitions of skill defined it as a combination of manual skill and knowledge, where manual skill is the "ability to perform quickly and effectively complex actions which necessitate the co-ordination of perceptual and motor activity" (More, 1980, p. 15). This definition encompasses mental proficiency and physical dexterity (Attewell, 1990). This thesis will use mental proficiency and cognitive abilities to refer to the knowledge component. However, it will not use 'physical dexterity'. Instead, it will use motor skills. Because the word 'dexterity' is often used to refer to "innate abilities" rather than "learned abilities" (More, 1980). Motor skills include activities that demand voluntary movement of "joints and body segments", contrary to cognitive skills, which do not "require voluntary limb movement to achieve a goal" (Magill & Anderson, 2017). For example, activities such as swimming, playing football and musical instruments are considered motor skills, while reading, problem-solving and memory are cognitive skills (Tomporowski, 2003). However, this distinction between motor and cognitive activities is arbitrary. For example, playing the piano involves both cognitive activities and requires motor skills such as hand and finger movements (Magill & Anderson, 2017). This thesis will function with a notion of skill as the mentally led physically carried out activities.

Skill can be evaluated in two ways – first process of evaluation deals with a view of skill as an individual ability and the second process of evaluation deals with a view of skill as the properties of a job (Attewell, 1990). "Educational psychologists and human capital theorists" largely evaluate skill through the first process and treat skill as an independent variable in measurement (Attewell, 1990; Vallas, 1990). Conversely, sociologists typically perceive skill as a dependent variable and support the second approach of evaluation (Vallas, 1990).

The primary focus of this thesis is to explore what skills one needs and how one acquires those skills in changing occupations or having multiple occupations rather than measuring skills. However, it is essential to make a distinction, as Attewell (1990) noted, between whether the skill is a "mere ability" or an "extraordinary ability". To

avoid this ambiguity, this thesis will consider skill as any ability to carry out an activity and expertise as something when someone has gained proficiency in an activity with respect to speed and accuracy. Again, measuring skill is not the primary thrust of this thesis; rather, it explores the types of skills in demand and how the workers have been acquiring the demanded skills during rural transformation.

The rural transformation in Kusumpali has been changing the demand for skills. As shown in the previous chapter, workers' movement from agriculture to non-agricultural activities has increased the demand for non-agricultural skills. The disproportional change in the movement of agriculturalists away from agriculture over decades altered the need for skills by increasing the demand for skills in multiple economic activities. Similarly, the concentration of workers, particularly from the younger generation, in the categories of non-agricultural activities against the dominance of the older generation in agriculture, as seen in the previous chapter, generated an increasing demand for non-agricultural skills from the younger generation. Further, individuals were seen changing their occupations and having multiple occupations based on the needs and opportunities created by the rural transformation. Changing occupations increased the demand for new practical technical skills, and having multiple occupations raised the demand for practical technical skills in multiple economic activities and a set of non-technical skills. For example, if workers who were cultivators previously wanted to diversify to non-agricultural activities and get involved in the construction industry as their primary means of livelihood, they would need to learn masonry skills and a set of non-technical skills. Likewise, when workers had masonry as their primary means of living with a secondary activity as a welder, they were required to have both masonry and welding-related practical technical skills and a set of non-technical skills.

The workplace location also played an essential role in determining the demand for skills. As seen in the last chapter, the non-agricultural activities outside the village were in multiple locations. Some workplaces were located within the district, some outside the district but within the state and some at long distances outside the state. The demand for skills could vary across locations because the value of a particular skill could vary according to the location. The irregular availability of employment opportunities in one economic activity and other uncertainties, particularly the sudden shocks like the COVID-19 pandemic, could also make a difference to the demand for skills.

There is a need to explore the changing demand for skills as a large proportion of the workers in the village have changed and had multiple occupations. The occupational change in the village was noted when differences were identified between workers' previous and current main economic activities. However, not everyone had the need and opportunity to change their economic activities. Of the total number of workers, 51.16 per cent had different main economic activities than their previous occupations. The nature of this occupational change was of different kinds. While changing their occupations, some changed within the sector, whereas others moved to activities in different sectors. The nature of this occupational change determined the types and numbers of skills in demand. Similarly, workers who had multiple occupations was recognised by identifying the workers with secondary economic activities. In that process, it was also noted that not everyone had the need and opportunities to have multiple occupations. Of the total workers, only 36.05 per cent had a secondary economic activity. Some had their primary and secondary activities within one sector, whereas others had both activities in different sectors. These differences in having multiple occupations demanded different types and numbers of skills. The diverse forms of occupational change and having multiple occupations generated differences in the numbers and types of skills workers needed to learn during the rural transformation.

The link between structural change, occupational transformation, and the changing demand for skills questions the traditionally demarcated occupational boundaries and increasingly demands mobility and flexibility due to continuous "technological innovation" (Geel & Backes-Gellner, 2011). During structural change, the demand for skill changes, and mobility, as well as flexibility, are required to meet the changing requirements and to be part of the transformation by adopting the changes. One form of structural change, i.e., the technological shift with the introduction of computers at the workplace, clearly shows the link between structural change and the changing demand for skills. The computerisation of tasks at the workplace with the adoption of computers complements skilled workers with critical problem-solving abilities and substitutes unskilled workers engaged in "routine tasks" (Autor et al., 2003).

The structural transformation has been changing the demand for specific skills, reflected in the 'growing importance of generic skills' (Dench, 1997; Green, 2009). The importance of these skills has been rising as they have wider applications and a common basis to be successful in the labour market irrespective of the organisational and

employment contexts (Payne, 2004). Generic skills have been referred to by different names in different countries, such as transferrable skills in France, key qualifications in Germany, and include numerous types of skills (NCVER, 2003). The 'National Centre for Vocational Education Research (NCVER)' has summarised these large sets of skills into six categories based on the six common components. These six categories include basic skills such as 'literacy, using numbers and technology'; people-related skills such as communication and interpersonal skills; conceptual skills such as problem-solving and learning-to-learn skills; business-related skills such as innovation skills and enterprise skills; community-related skills such as civic knowledge and personal skills such as resource and time management etc. (NCVER, 2003).

At the same time, workers also required skills specific to their occupations. One of the theories of learning, 'situated learning', emphasises that knowledge is context-specific and can vary with the variation in "activity, context and culture" (McLellan, 1996). According to this approach, action is situation-specific, and the transformation of knowledge from one task to another does not happen as abstract knowledge has little role (Anderson et al., 1996). Attewell (1990) mentioned an example that dairy workers' counting methods are specific to their workplace and everyday practices as they develop the method based on the presence of various objects, such as crates and quarts, at their workplace. This counting skill has no meaning outside the workplace as the counting method, in this case, is context or situation specific to the workplace. When workers during a transformation change occupations, the demand for occupation-specific skills changes. The demand for occupation-specific skills has also been changing as old skills have been losing their value rapidly, and the frequency of demand for learning new skills has been growing (Bishop, 1998). Hence, the workers in the context of rural transformation also need to acquire 'hard technical abilities and know-how' (Payne, 2004). This 'know-how' is basically the practical technical skills concerning the workplace situation and refers to the "ability to use tools effectively and efficiently and the ability to undertake the work of the day" (Barber, 2003, p. 133).

3.2. Types of skills in demand

As noted in the previous chapter, people in Kusumpali engaged in diverse economic activities. Some were involved in agricultural activities, but most depended on non-

agricultural activities. Out of the total actual workers, i.e., all workers above 14 years, excluding unemployed and individuals working without any payment from the main, previous, and secondary activities, 87.83 per cent were engaged in non-agricultural activities, and 12.17 per cent were in agricultural activities. The non-agricultural activities were of different kinds. Some individuals were in salaried jobs within the non-agricultural sector, whereas most were in wage labour. Among non-agricultural wage labour, some were engaged in specified activities, such as masonry, welding, driving, etc., and some were in non-specified causal labour.

Further, mapping the types of activities within the occupational categories revealed the complex occupational structure of workers in Kusumpali. Various economic activities were observed as multiple workers were found within one occupational category. For example, in private salaried jobs, it was found that there were industrial workers, heavy vehicle drivers, and many others employed in various shops, stores and showrooms. Likewise, in non-agricultural wage labour, there were masons, welders, brick kiln workers, putty workers, carpenters, and plumbers. Similarly, there were tailors, shopkeepers, scrap dealers, vegetable vendors and other street vendors who were self-employed. There were also some workers involved in multiple non-agricultural activities based on availability are referred to as non-specified causal labour.

Variation has not only been observed in economic activities but also in the location of workplaces. As shown in the second chapter, some worked in the village, but most worked outside. Out of the total workers, 17.4 per cent were working in the village, 64.9 per cent at commuting distances, 4.6 per cent at intermediate distances and 13.1 per cent at long distances. The diverse occupational structure and variation in the location of the workplaces demanded various types of occupation-specific and generic skills. The demand for multiple skills to carry out various activities at different locations can be illustrated through the following case studies.

Considering the diverse types of non-agricultural activities, particularly private salaried jobs in the village, industrial jobs were among the most important. From the beginning, local industrial jobs demanded predominantly the motor skills to hire local workers. As discussed in the second chapter, only a few local workers worked in the local industrial units, and they were primarily hired for loading and unloading, sweeping, and cleaning activities. The local industrial units hired immigrant workers from different regions and

states for technical jobs, but there were a few exceptions where the local workers engaged in technical activities. The exceptional workers in technical activities were initially hired not for technical jobs but for manual activities. These workers have moved from manual to manual-and-technical activities, but they were still working under the immigrant workers.

For example, a 24-year-old man, Bhola Prajapati, had 12 years of formal education and three months of vocational training in electrician work and worked in one of the large industrial plants in the village. He worked as a helper under different chemists who tested the quality of products produced in the industry. All the chemists were from places other than the local areas; most were from Bihar. Bhola did not have experience in the activities that he was doing in the industry. Initially, he was assigned to collect and transfer the final and intermediate product samples to the chemists, i.e., thick iron bars with weights varying from 115 kilograms to 120 kilograms. This required skills in operating the drilling machine, physical strength, and other motor skills. After working for a few months in the industry, Bhola started helping the chemists in technical activities, for example, in testing chemical components, such as the percentage of carbon in cast iron. Testing different components of the products in the lab with the chemists required technical and other occupation-specific skills. Other than physical ability and occupation-specific skills, Bhola required generic skills like interpersonal skills. He required interpersonal skills to learn technical skills from the chemists at the workplace through informal learning processes. It was also needed to access the workplace.

Bhola got this private salaried job in the industry through informal contacts. Bhola knew one of the industrial workers, Sukha Nayak, who regularly came to Bhola's house for Satsaṅga (Satsang). Sukha passed the information about the vacancy of a supervisor job in the industry to Bhola. When Bhola inquired about the supervisor job, he knew it was not for local workers. However, while asking about the supervisor job, Bhola interacted with one of Sukha Nayak's brothers, a security guard in the industry. Through the informal contact of the security guard with the chemists, Bhola got a job as a helper under the chemists in the industry.

Similarly, Subha Mahto, a 27-year-old man from the Mahto caste, worked as a helper in a roll pipe factory in the village. The roll pipe factory manufactured water pipes from

used plastics. Before working in the pipe factory, Subha had worked as a JCB driver, then as a mason, and as an industrial worker in one of the large industrial units in the village. Because of his masonry skills along with the fact that he resided just before a large industrial unit, he got access to work, initially as a mason in one of the large industrial units when it was constructed. His initial association with the industry gave him a job when it started functioning. Subha moved to the roll pipe factory after working in a large industrial unit for around seven years through one of his supervisors.

However, Subha had no experience in the activities involved in the roll pipe factory. During his initial days in the pipe factory, he worked as a helper under a skilled immigrant worker from West Bengal. He helped the experienced worker with various manual activities, such as grinding the raw materials and rolling and arranging the pipes. Subsequently, he acquired the practical technical skills required to manufacture roll water pipes. To develop technical skills, he started by gathering knowledge about the types of raw materials, how to crush the raw materials, how to maintain and manage heat while melting the raw materials, and how to roll the pipes. For learning all these technical skills from a skilled worker from a different state and language, Subha required people-related generic skills like interpersonal and communication skills. He required interpersonal skills not only for learning technical skills but also for changing occupations from one activity to another. In Subha's case, he moved from the large industry to the roll pipe factory and transformed himself from a manual worker to a worker with skills in both manual and technical activities. These processes also demanded people-related skills, mainly interpersonal skills.

Subha initially required motor skills and generic skills like interpersonal and communication skills, and later, he developed a set of practical technical skills specific to the water pipe manufacturing unit. Even after developing all these skills, Subha still worked as a helper under the immigrant worker from West Bengal. However, due to his possession of multiple skills, Subha had a salaried job in the village, which also helped him change his occupation from one activity to another. This ability to change occupations was increasingly in demand during the rural transformation as a way of coping with uncertainty.

Multiple skills were also needed for non-agricultural wage labour, such as the masons and welders. These workers required multiple skills to access workplaces, learn

occupation-specific practical technical skills, change their economic activities and the location of their workplaces, and increase work opportunities and earnings. Their demand for skill varied across locations of the workplace. In local workplaces, workers needed broad occupation-specific practical technical skills in multiple activities to get regular opportunities for work. For example, a mason needed to be *raj mistry,* who has skills in various masonry activities such as bricklaying, plastering, centring, etc., to get regular work in local areas. In contrast, workers at long-distance workplaces had to have specialised occupation-specific skills in at least one activity along with a comprehensive set of generic skills. A mason must be specialised in one masonry activity, for example, in centring activity or in a particular type of centring practice, to work at long distances. The specialisation must be consistent with the specialisation of the network that facilitates the person's migration to the long-distance workplace. Along with the specialised practical technical skills, the long-distance migrants needed many generic skills to access the network and the workplaces outside the state.

Locally, non-agricultural labour with skills in various activities was better off in terms of wages and employment than those with skills in limited activities or specialised in one activity. Lack of skill in multiple non-agricultural activities sometimes increases the pressure on agriculture. Non-agricultural workers returned to agriculture or distributed their work between agricultural and non-agricultural activities. Skills in limited activities or specialisation over one activity was also seen to be a factor increasing uncertainty in the availability of work in local workplaces. The irregular availability of work sometimes pushed workers to become utterly dependent on manual, non-specified casual labour or to follow illegal means of living.

3.2.1. Workers with skills in multiple activities

The better-off position of workers with skills in various non-agricultural activities was noted as these workers with multiple skills received relatively better wages and regular employment. For example, a 37-year-old *raj mistry*, Safik Ansari, worked under a local contractor at different construction sites outside the village at commuting distances. Safik considered himself an “all-rounder” as he knew all the skills concerning masonry. He knew bricklaying, plastering, bar bending, and centring with bamboo and iron bars. He had expertise in multiple masonry activities as he had been working for a long time, starting as a 15-year-old. He had access to learn the skill at an early age with very good

fundamental knowledge of masonry because his father was also a *raj mistry* and a contractor in the local area. After learning basic masonry skills from his father, he migrated to Pune and worked there for three years. He migrated outside the state as Ansari workers had been working there in Pune. Through his interpersonal skills, he established contact with the coordinator of the labour network functioning in Pune and accessed the workplace outside the state.

According to him, the masonry skills that he acquired from his father were basic; he could be a mason locally but not in workplaces outside the state. His migration to Pune helped him develop specialised skills and increased his base in masonry. His basic skills in masonry expanded as the work practices for a particular activity varied across locations. For example, the centring activities at the local workplaces were done with bamboo and plywood, whereas the same activities were done with iron bars and metal centring sheets in the cities outside the state. The two methods demanded different practical technical skills to carry out the same activities across locations. The experience in working both in the local area and outside the state helped him to have skills in multiple non-agricultural activities. He knew masonry skills and had carpentry skills. Safik's skills in various masonry activities with specialisation in different types of centring, an additional skill in carpentry, and an association with a local contractor helped him to find work opportunities regularly at a relatively higher wage. Unlike most of the local masons who faced the problem of irregular work despite working at a daily wage of Rs 400 while working under contractors, Safik was better off as he was getting regular work and at a daily wage of Rs 600.

Similarly, another *raj mistry* who was also an Ansari*,* who shall be referred to as Nijaat Ansari, developed multiple non-agricultural skills. Possessing multiple skills helped him get regular work locally, access to local industrial jobs, access to migration networks to move outside the state, learn technical skills, and to bypass workplace problems.

When I met Nijaat, the 29-year-old Ansari man was working as a *raj mistry* on the construction site of a large industrial plant in one of the neighbouring villages of Kusumpali under a Muslim contractor. Previously, Nijaat had worked as a storekeeper in a large industrial plant's construction site in the village. There, he interacted with a group of immigrants involved in masonry. These masons occasionally called Nijaat to

work with them because of his interpersonal skills. He also had the advantage of being able to communicate with workers from other states in Hindi. Through them, he got to work in masonry-related activities at that construction site and learnt the floor, base, and roof centring work. These immigrant workers also helped Nijaat to migrate outside the village to other states. He then migrated to Maharashtra, Rajasthan, and Odisha, where he learnt multiple practical technical masonry skills, such as bricklaying, plastering, bar bending, several types of centring, floor and wall tiling in four years. His work experience at various locations developed his generic skills, particularly people-related and problem-solving abilities. After learning skills in multiple masonry activities outside the state, he returned to the village in 2013, and since then, he had been working at workplaces at commuting distances. He was associated with a local contractor and was getting regular work opportunities through him. His skills in multiple masonry activities allowed him to earn relatively higher wages in local workplaces. His wage varied between Rs 450 and Rs 500 while working under a contractor and varied from Rs 500 to Rs 600 while working independently without the intervention of the contractor.

His generic skill of appearing to solve workplace problems was reflected in an incident when he was working as a *raj mistry* and coordinating a group of masons and construction workers at the construction site of a large industrial unit at a commuting distance from Kusumpali. On a busy day, when Nijaat made the pillars for foundation centring, he assigned some work to another mason working under him. The following day, when Nijaat came to the site, he noticed that the fellow mason had made a mistake the previous day. He had made the outer frame while concreting a foundation pillar with loose bricks instead of wood or metal sheets, as was the norm. The loose brick structure made the pillar weak and left marks on the pillar. This problem was concealed from the contractor by first plastering the outside of the pillar, followed by another layer of concrete around the old pillar, but using metal plates this time. While the structure appeared stronger, one pillar remained weak, but the problem was bypassed without consequences for the workers.

Similarly, Ali another Ansari man worked as a mason and an electronic appliance repair person at places at commuting distances from Kusumpali. Ali was 26 years old and had 11 years of formal education and six months of occupational training. Ali's father was a mason, and his mother was an industrial worker. They did not have agricultural land,

so they had been involved in non-agricultural activities for generations. Ali lost his father at a very young age and started as a boy to work in activities such as repairing air conditioners, refrigerators and washing machines after training for six months in Ramgarh.

He soon realised that work as a mechanic at places he could commute to from Kusumpali was seasonal. Over the four years preceding the survey, he had begun to do masonry work as a diversification strategy during the off-season of his mechanic work. He developed skills in masonry such as bricklaying, plastering, bar bending and centring. However, he was not an expert in masonry activities, which meant that he could not lead an assignment alone, though he could work as a mason under an experienced mason. This provided him regular opportunities for work with local contractors, but he did not get the higher wages of Safik and Nijaat. He got a standard wage of Rs 400 daily for masonry. His earning from being a mechanic was higher as there was no intermediary, unlike the contractor in masonry work. He worked with a showroom and service centre of a multinational electronics company in Ramgarh. Through this showroom, he received the assignment and divided the payment into a 50:50 ratio between him and the owner of the showroom. Because of his skills in multiple activities, he got regular work locally. He was in a better position than other workers working within commuting distances from the village.

3.2.2. Workers with a limited number of non-agricultural skills

Workers with limited non-agricultural skills returned to agriculture or diversified occupations into agricultural activities. They were also forced to receive lower wages and were uncertain about the availability of work for their limited non-agricultural skills. The irregular availability of work forced many workers in this category to work in lower-end jobs.

One such worker was Subal Mahto, a 60-year-old mason who had no regular work and was sometimes ready to work for relatively lower wages in the non-agricultural sector due to his limited non-agricultural skills. Subal did not receive formal education, knowing only how to sign his name. He had masonry skills only in bricklaying and plastering which he developed while working at construction sites in and around Gola and Ramgarh. He had earlier worked in Ranchi but no longer wanted to migrate for

work. He had floor tiling skills that he learned while working in Ranchi. However, that skill had no regular demand locally. He tried to avoid sitting idle and worked at a relatively lower wage rate. He said, “In Ramgarh and Ranchi area, you have noticed in many towns that workers get work at the market. Workers gathered in the market with all their working tools in the morning. If they got work, it is perfect; otherwise, you had to repeat the same activities for days, i.e., coming to the market with all tools and then going back and sleeping.” To avoid the uncertainty in regular availability, he preferred to work even at a lower wage but wanted regular work. Being a Mahto, a landowning caste in the village, he had options in the agricultural sector. To cope with the uncertainty of irregular availability of work in the non-agricultural sector, he diversified his occupation between non-agricultural and agricultural activities. But this diversification also demanded multiple skills.

The demand for multiple skills was also observed in a few cases where the workers reverse migrated from long-distance workplaces to the village and struggled to find regular opportunities for work locally with their few specialised skills. Omi Mahto, a centring mason, worked in Hyderabad before the COVID-19 pandemic. He migrated to Hyderabad through a network coordinated by a Kumhar contractor and returned to the village during the pandemic. After returning to the village, he searched for work locally but did not get regular work related to his specialised centring skills. Finally, seeking regular opportunities, he started working under a local contractor in workplaces at commuting distances, but the local contractor considered him a ‘*half mistry’* (not a complete mason). Thus, he was getting less than a mason's wage. This generated pressure on him to develop skills in multiple masonry activities.

Some workers did not have any specified economic activities. The lack of occupation-specific skills excluded them from regular employment opportunities. These workers carried out a large set of manual non-agricultural activities or were sometimes forced to do illegal activities for their living. Even for such activities, these workers required multiple skills. Of all such activities, the people involved in illegal coal mining were the most important. To mine coal, the members of the illegal coal chain required many motor skills. This set of workers survived by collecting coal from the open-pit coal mines in the region. They collected coal from the mines, which were located around 20 to 25 kilometres away from the village, and then loaded the coal on bicycles and pushed the cycles for more than 50 kilometres to sell the coal at various remote rural places

where no one enquired about the origin of the coal. Many activities involved mining coal from the mine to selling the coal in different remote rural places, which required an extensive set of motor skills.

The activities were generally carried out by distributing the motor activities among the different members of a group. For example, if the illegal coal activities were carried out by household members, including a husband, wife, and their children, the male members generally carried out the mining, and the female members carried the coal on their heads from the mining point to the other side of the wall of the open pit mine.

Of all the mines in the region, one was preferred by the illegal coal operators because of its location. The location helped them steal the coal with less intervention from the police and other state authorities. However, to enter this mine, the workers of this illegal coal-mining chain had to cross a stream of the Damodar River. The workers needed to carry the coal, with the help of a basket and wood and iron bars, from the point where they gathered the coal after moving it over the wall of the mine to a point on the opposite side of the stream of the Damodar River. After crossing the river, the women and children packed the coal in jute and plastic packets. The men then loaded the coal on the cycle. After loading the coal packets on the cycle, the men walked with the cycle for miles. The women and children pushed the coal-loaded cycle from the back to distribute the motor activities required for the transportation of stolen coal. To carry out the entire activity from the time of collection to sale, the workers of this illegal chain required many motor skills like walking, cycling, carrying the basket full of coal on their heads, crossing the river with the coal-loaded basket on their heads, packing the coal from the basket to the jute and plastic packets etc. The demand for motor skills was also highly associated with these illegal coal mining activities as it was found that, on average, the individuals involved in this activity carried six to seven '*mann*' (around 240 to 280 kg) of coal on a bicycle and walked around 50 kilometres to collect and then sell the coal.

3.3. Multiplicity of occupations

To capture the number of skills required for changing occupations and having multiple occupations, this thesis develops a measure of the multiplicity of occupations. This measure, which can be termed the Indicator of the Multiplicity of Occupations (IMO), is built around scores based on the nature of occupational change and the number and types of occupations possessed by the workers. These scores have been assigned based on the minimum number of technical skills required to make a particular form of occupational change and/or have multiple occupations. These scores have been developed to capture the number of skills demanded for different forms of occupational change and/or to have multiple occupations. The scores helped distinguish between those who had made the occupational change and/or had multiple occupations and those who had not. The scores also helped identify the factors that influenced the magnitude of demand for skills to access multiple occupations.

Occupational details collected in the household survey were used to develop this measure on the multiplicity of occupations. In the household survey, the details on previous occupations and the current main and secondary economic activities of all the individual members of a household had been collected from the head of the household.[9] Using these occupational details, nine different situations were identified based on the nature of occupational transformation and diversification. Four scores ranging from '0' to '3' were assigned for nine different situations (as depicted in Table 3.1).

[9] In the household survey, the individual details of 1262 individuals were collected from the head of the households; out of this total number of individuals, 891 were above the age of 15. Again, out of these 891 individuals, the total number of workers was 432 individuals after excluding the unemployed, individuals involved in domestic activities and other non-working populations from the main economic activities. Further, out of these 432 individuals, 344 individuals were identified as the total number of workers after excluding the unemployed individuals, individuals involved in domestic activities and other workers in the non-working categories from the previous and secondary economic activities.

Table 3.1. Scores for the multiplicity of occupations.

Nature of occupational change and/or having multiple occupations	*Scores*
No change and no secondary activity	0
No change and secondary activity in the same sector	1
No change and secondary activity in different sector	2
Change within the sector and no secondary activity	2
Change within the sector and secondary in the same sector	2
Change within the sector and secondary in different sector	3
Change to a different sector and no secondary activity	2
Change to a different sector and secondary activity in the same sector	3
Change to a different sector and secondary activity in that sector	2

Source: Outlined from the household survey conducted by the author.

The scores were based on the number of new skills the workers had to learn. The score '0' was assigned to those who had not changed their occupation and had no secondary activity. For example, the score '0' has been assigned to those who were cultivators previously and were continuing cultivation as their main economic activity without any secondary activity. A score of '1' was assigned to those who had not changed their occupation and had secondary activities in the same sector. For example, '1' was the score assigned to those who were involved in masonry previously and were continuing masonry as their main economic activity, with secondary activity, such as carpentry, in the non-agricultural sector. The score of '1' was assigned in such cases as the worker had to learn a new skill, though it was in the same sector.

The scores also reflected an emphasis on the main activity. Thus, a change in the main activity was given a score of '2' whether or not there was a secondary activity. At the same time, a movement to a different sector also merited a score of '2'. This was done irrespective of whether the movement was in the main activity or the secondary activity. The highest score of '3' was given to workers working concurrently in different sectors.

3.4. Factors influencing the scores for the multiplicity of occupations

To identify the factors which could affect the number of skills demanded (as measured by the IMO) of workers to change their occupations from their previous ones and/or to have multiple occupations across economic activities and sectors, a Tobit regression analysis was conducted. The regression analysis was done by taking the scores for the IMO as the dependent variable with a series of independent variables, such as the landholding status, gender, age, education, caste identity, workplace location and the 'Index of Distance from Absolute Deprivation (IDFAD)'. The result of the regression analysis is presented in Table 3.2.

The land owned, in acres, by the households to which the workers belonged was taken as the indicator of landholding status. The independent variable gender has two binary values of 0 and 1, where 1 was assigned for all the male workers in the data and 0 for female members, as there were no other gender groups in the data. The independent variable of the age of workers was measured in years. Likewise, the independent variable education was the highest years of formal education that the workers had received. The IDFAD used was that of the households to which the workers belonged[10].

Dummy variables of 0 and 1 was used for each caste identity, with the particular caste getting the value of 1 and all other castes 0. For example, in the case of the independent variable for Ansaris, all workers belonging to this caste were given the value 1, while all other castes were given the value 0. The same process was followed for each of the castes in the village.

However, all the castes that fell in the SC and ST categories were combined in a category referred to as SC/ST. Similarly, all other non-SC/ST castes whose share was less than two per cent of the total number of households in the village were combined and referred to as others. As dummy values have been used for castes and there were more than two groups, a reference group had to be taken while doing the regression and interpreting the results. In this case, the SC/ST group was taken as the reference group as they were one of the groups with the lowest 'Index of Distance from Absolute Deprivation'.

[10] Refer to the second chapter of this thesis for the detailed process of how IDFAD have been calculated for the households in the village.

Likewise, the independent variable on the location of the workplaces included dummy variables of 0 and 1. For the variables representing each location of workplaces, 1 was assigned for that workplace and 0 for all the others. For example, the workers working in the village were assigned the value of '1', and all other workers working outside the village were given the value of '0'. The same procedure was followed for the variables representing workplaces located at commuting distance, variables representing workplaces located outside the district but within the state, and variables representing workplaces located outside the state. Since there were four independent location variables, a reference group needed to be taken for the regression analysis and the interpretation of the results. The workers working outside the state were taken as the reference group. This choice was made on the assumption that this group needed more specialisation and had less scope to develop multiple occupations across agricultural and non-agricultural sectors, as their workplaces were located hundreds of kilometres away from the village.

With this set of independent variables and the dependent variable on the IMO scores, a Tobit regression analysis was conducted as the dependent variable is censored on the right. It means the scores for the multiplicity of occupations, which range from 0 to 3, have the upper limit of '3' as the survey has collected data only for one secondary economic activity. The upper limit of the score for the multiplicity of occupations can be expanded if data on more than one secondary activity is available. The score can be '4' in a situation where a worker who was a cultivator previously but is currently working as a tractor driver as his main means of living with two secondary activities as a brickmaker and a mason. In such a situation, the worker is involved in four different activities, so he will require at least four different practical technical skills; hence, the score will be 4, and it can further increase with the increase in the number of secondary activities. With the increase in the number of secondary economic activities, the situation, as outlined in Table 3.1, can also be expanded. So, the regression coefficient, as depicted in Table 3.2, only provides the effect on the latent outcomes.

Table 3.2. Tobit regression analysis result.

Dependent variable	*Independent variables*	*Coefficients*	*p-value*
Scores for the multiplicity of occupations	Landowning status	0.008	0.018
	Gender	-0.028	0.893
	Age	-0.007	0.19
	Education	0.019	0.274
	Workplace within village	0.243	0.263
	Workplace outside village within commuting distance	0.792	0
	Workplace outside the district within the state	0.572	0.086
	Ansari	0.010	0.958
	Mahto	0.601	0.002
	Kumhar	0.531	0.023
	Others	-0.529	0.086
	IDFAD	0.008	0.018

The regression analysis result shows that the demographic characteristics of workers, such as age, gender, and formal years of education have no statistically significant relation with the IMO scores. However, the location of the workplace, the identity of the workers, the landowning status and the economic position of the households to which the workers belong have an essential association with the IMO scores. The identity and location variables were expected to be associated with the IMO scores. As discussed in the previous chapter, not all identity groups had equal access to workplaces within and outside the village and not all had equal access to agricultural and non-agricultural activities. The differences in the access to workplaces within and outside the village and in access to agricultural and non-agricultural activities can have different

effects on the scores for the multiplicity of occupations. In other words, the differences in access to workplaces and access to agricultural and non-agricultural activities have different effects on the number of skills one can develop by changing his occupation and/or being involved in multiple occupations.

It can be noted from Table 3.2 that the workers belonging to the landholding castes in the village, such as the Mahtos and Kumhars, demanded relatively more skills than the workers belonging to the SC/ST group. Specifically, the coefficient of demand for the skills of Mahto and Kumhar are 0.601 and 0.531 points, respectively, higher than the workers in the SC/ST category. There are multiple reasons why the landowning caste demands more skills than the workers from the SC/ST category. The workers belonging to the landowning castes in the village, such as the Mahtos and Kumhars, who owned around 80 per cent of the total agricultural land, had more chances to change their occupations and have multiple occupations within the agricultural sector than those belonging to the SC/ST category as they only owned 7.87 per cent of the total land. In contrast, those who belonged to the identity category, referred to as others, owned only 2.61 per cent of the total land and had even fewer chances to change their occupations and have multiple occupations within agriculture than those who belonged to the SC/ST category. The chances of occupational change and having multiple occupations within the agricultural sector were also not high for Ansaris, as most of the households in this caste were landless, and even those who had land preferred not to be involved in agricultural activities. Instead, they preferred to lease their agricultural land to the Mahtos and participate in sharecropping rather than being an own-account cultivator.

Again, the landowning castes, the Mahtos and Kumhars, had more access jobs in the local industrial units as they had sold land to the local industrial units in deals that included the promise of jobs. These castes had greater chances to move from agriculture to industrial jobs and/or have multiple occupations by distributing their economic activities among these activities. They also had a greater chance to move from one industrial job to another among the local industrial units through their social and work-based networks. These forms of occupational change and having multiple occupations were rare for all other landless caste groups, particularly for those who belong to the SC/ST category, as most of them (84.2 per cent) were landless.

Further, the landowning castes, the Mahtos and Kumhars, had more ability to start non-agricultural activities in the emerging market area near the local industrial units on both sides of the '*Rajrappa road*' as they were the only ones who had land in that area. These two castes were also economically better off (had 63.38 per cent of the total IDFAD in the village), enhancing their ability to invest in multiple self-employed activities in the emerging market area. The possession of land in the emerging market area and the ability to invest in self-employment further increased the opportunities of the landowning caste to change their economic activities from agriculture to non-agricultural economic activities located in the emerging market area and also to have different non-agricultural activities within the emerging market area. These forms of occupational change and having multiple occupations were generally not possible for the workers belonging to the SC/ST group as most of them were landless in general and had no land in the emerging market area, nor did they have a better economic position (as they only had 3.42 per cent of total IDFAD) unlike the landholding castes to invest in non-agricultural activities in the emerging market area.

The landowning castes in general, particularly the Kumhars, controlled access to the non-agricultural workplaces located outside the village by coordinating the major work-related contracts and migration networks, which further expanded the opportunities for the workers belonging to this caste to change their occupation from agriculture to non-agricultural activities located outside the village. On the other hand, there was a resistance to include workers from the SC/ST category in the contracts and networks coordinated by Kumhar contractors. This limited the ability of the SC/ST group workers to change their occupation and diversify between economic activities within the non-agricultural sector while commuting from the village and also by migrating away from the village.

The Ansari workers, even though they had a better economic position (they were second (after the Mahtos) in the economic hierarchy measured by IDFAD), had opportunities largely only within the non-agricultural sector. Their ability to change and have multiple occupations was limited, like the SC/ST group workers. As the Ansari and the SC/ST workers had limited opportunities for changing occupations and having multiple occupations, comparing the Ansari workers with the workers from the SC/ST group did not provide any significant difference. However, the Ansaris developed their networks to tap the non-agricultural activities within and outside the village.

The Ansari contractors were coordinating the labour networks that were supplying workers for the local industrial units; they had also developed networks outside the village, both in nearby and distant places. Through the Ansari network, some of the SC/ ST workers got access to non-agricultural activities within the village and outside. At the same time, the workers from remaining category of other castes, whose numeric share was less than two per cent, were excluded from all the networks that facilitated access to the non-agricultural activities located in the village and outside as they were considered outsiders by all other castes in the village. Their being considered outsiders was largely attributed to their limited presence in numeric, economic and educational domains in the village. The magnitude of the demand of the 'other castes' for skills, as reflected by their IMO scores, was less than the workers belonging to the SC/ST category. These caste differences in the demand for multiple skills were also reflected in the variation in the average IMO scores across caste groups (as illustrated in Figure 3.1).

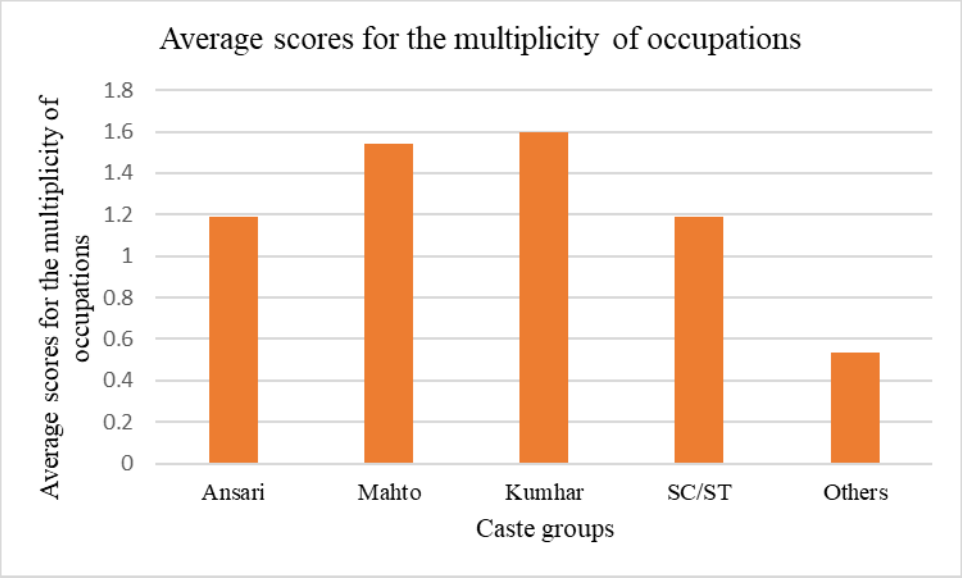

Figure 3.1. Caste-wise average IMO scores.

The differences in the magnitude of demand for skills also varied across the locations of workplaces. As shown in Table 3.2, the workers working within commuting distances and those working outside the district demanded more skills than those working outside the state. Specifically, the magnitude of demand for skills of the workers working within

commuting distances was 0.79 points higher than those working outside the state. Similarly, the magnitude of demand for skills for workers working outside the district but within the state was 0.57 points higher than those working outside the state. One can also see these differences in the magnitude of demand for skills concerning the location of the workplaces in the variation in the average IMO scores across the locations of workplaces (as illustrated in Figure 3.2).

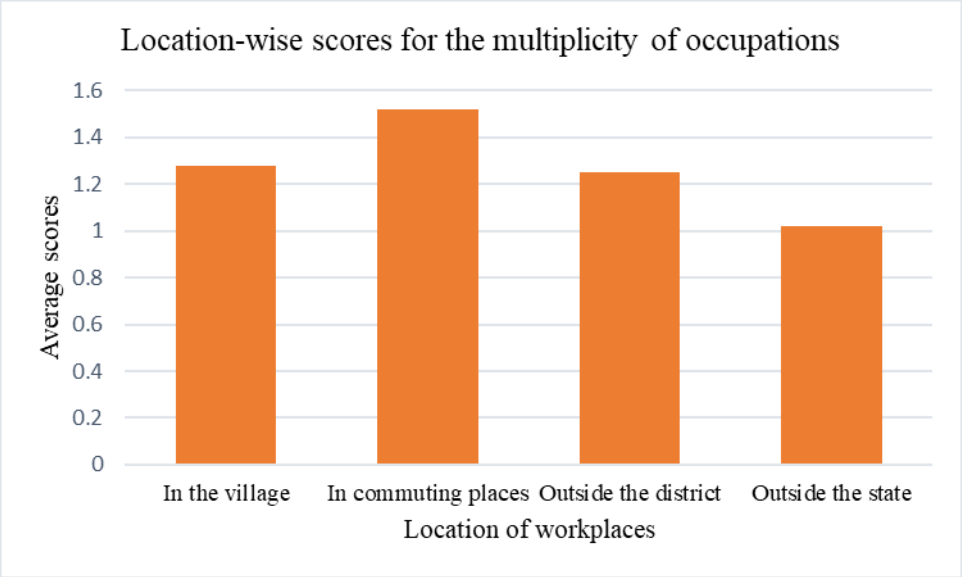

Figure 3.2. Workplace location-wise average IMO scores.

There were multiple reasons for the differences in the magnitude of demand for skills across locations, out of which two are essential to discuss: the differences in the need to have multiple occupations, meaning skills in various economic activities and the scope for changing occupations and having multiple occupations. The workers working outside the village but within commuting distances had both the need and the opportunities to change their occupations compared to those working in places at a long distance from the village. The need of these workers for occupational change was generated from the irregular availability of non-agricultural work opportunities outside the village at commuting distances. Qualitative interviews revealed that the assignments available through the contractors for non-agricultural activities locally were shorter and more irregular than those available in long-distance places,

particularly outside the state. Many workers said that locally, the workers got assignments usually for days, while outside the state, the assignments were for months.

The demand for multiple skills was also to cope with uncertainties in local workplaces. The degree of uncertainty was more severe for workers who were not directly associated with the contractors and struggled to find assignments independently. They sometimes got assignments through their previous contacts and at other times from the labour chowk in neighbouring urban centres. One mason, Subal Mahto, who worked locally, spoke of the uncertainty in finding work at the labour chowk. He said,

> "If you can find work, it's well and good; it's *ramrajya* or else you end up spending 4-8 days in the labour chowk. You end up carrying all the tools and equipment from home and just wait around at the chowk and come back home to sleep."

The workers working within commuting distances needed a greater variety of skills when compared to migrant workers. These workers could change their jobs from agriculture to non-agriculture or do both at one time when they belonged to landowning households. This was possible as they lived in the village and commuted to their workplaces daily. When the workers belonged to landless households with no scope for employment in agriculture, they still had the option of changing jobs and having multiple occupations in non-agricultural sectors. Even when they failed to get employment in the agricultural and non-agricultural sectors, some followed illegal activities, primarily stealing coal from the open-pit coal mines in the region or selling country liquor.

In contrast, the opportunities for migrant workers working outside the state to be involved in multiple occupations were limited. They could not move easily between agricultural and non-agricultural activities as their workplaces were located hundreds of kilometres away from the village, and their assignments were for extended periods. The largest migration network from the village, operated in Hyderabad through a contractor, Amar Prajapati, had taken an assignment for the centring activities of a 17-floored apartment. All the workers in his network had migrated for an extended period to Hyderabad. They only entered agriculture during the time they stayed in the village while waiting for their next assignment.

The demand for multiple skills was also limited as the migration process from the village to outside the state demanded specialisation in particular technical skills. Amar Prajapati's network functioning in Hyderabad specialised in masonry, so the workers migrating through his network required masonry skills. Similarly, another network working in Chennai specialised in welding, which demanded welding-related skills. The migration networks in Odisha and Andra Pradesh specialised in driving vehicles, so migrating to these states through these networks required driving skills. The demand for skills in particular activities based on the specialisation of the migration network limited the scope of the migrant workers to develop skills in multiple activities. This led to a process where the migrant workers developed expertise in specific practical technical skills, whereas the workers working within commuting distances needed to acquire skills in multiple economic activities.

The differences in the demand for skills across the location of the workplaces coincided with the differences in the demand for skills across identity groups. This was because specific identity groups generally controlled access to each workplace. The control over particular workplaces led identity groups to specialise in the skills required at that workplace. Thus, some economic activities in the village were carried out only by particular identity groups, and workers from other identity groups were absent, as can be seen in Table 3.3.

Table 3.3. Distribution of workers by the categories of main economic activity and identity.

Identity	*Agricultural activities*	*Non-agricultural wage labour*	*Private salaried jobs*	*Own account workers*	*Govt. salaried jobs*
Ansari	4.29	34.12	31.25	30.77	66.67
Kumhar	15.71	9.95	17.71	30.77	0.00
Mahto	77.14	34.60	36.46	15.38	33.33
Others	0.00	0.95	5.21	17.31	0.00
SC/ST	2.86	20.38	9.38	5.77	0.00

Source: Household survey by the author.

The Mahto and Kumhar were the landowning castes, so these two castes carried out much of the agricultural activities in the village. The non-agricultural wage labour covered specified activities like masonry, plumbing, welding, and brickmaking. In addition, there was work in activities that workers did not name, either because the work was illegal or because it required generic skills that could be used in multiple activities. The work requiring generic skills was carried out by individuals from all identity groups. The Mahtos, Kumhars and Ansaris dominated the networks in the village and outside by coordinating and financing them. This increased the non-agricultural opportunities available to workers of these castes. Competing for these non-agricultural jobs were a substantial proportion of workers from the SC/ST category who were forced into these jobs as they were landless and did not have the resources for self-employment. They also had very little presence in the two major private salaried jobs, that is, in local industrial units or in the heavy vehicle driving jobs outside the village. Government-salaried jobs, in any case, offered only a negligible proportion of employment to the villagers. These SC/ST workers had also not succeeded in gaining access to the reserved government salaried jobs.

The Mahto, Ansari, and Kumhar workers dominated the private salaried jobs. The Mahtos and Kumhars had the benefit of their initial negotiation for jobs when selling their land to the industrial units. The Ansaris captured a significant proportion of the private salaried jobs in the local industrial units through Ansari labour contractors who supplied workers to the local industrial units. In addition, these three castes had networks facilitating access to heavy vehicle driving jobs outside the district and state, enhancing their ability to tap the major private salaried jobs.

The Ansaris, Kumhars and Mahtos also dominated activities requiring self-employment. These activities included businesses in the emerging market area and workers involved in scrap dealing, stealing coal, and selling country liquor. The Mahtos and Kumhars had land in the emerging market area, and their better economic position enabled them to invest in the emerging market area in various small and large businesses. Similarly, the better economic position and the members with government salaried jobs among the Ansaris helped them to buy land in the emerging market area and invest in large businesses. At the same time, the self-employed workers of other castes, including the SC/ST, were involved in multiple odds activities such as scrap

dealing and vegetable vending. Some of these workers had also been involved in stealing coal and selling country liquor.

The distribution of caste groups across occupations also reflects their dominance. The more dominant groups were spread across all occupations, while the weaker groups tended to be concentrated in one or two activities.

Table 3.4. Distribution of workers by identity and categories of main economic activity.

Identity	*Agricultural activities*	*Non-agricultural wage labour*	*Private salaried jobs*	*Own account workers*	*Government salaried jobs*
Ansari	2.44	58.54	24.39	13.01	1.63
Kumhar	16.92	32.31	26.15	24.62	0.00
Mahto	31.58	42.69	20.47	4.68	0.58
Others	0.00	12.50	31.25	56.25	0.00
SC/ST	3.51	75.44	15.79	5.26	0.00

Source: Household survey by the author.

It can be noted from Table 3.4 that the Mahto and Kumhar were spread across all the main occupations. The Ansaris not having a traditional place in agriculture were spread across all non-agricultural activities. In contrast, the SC/ST category workers were concentrated in non-agricultural wage labour activities, a small proportion in private salaried jobs, an insignificant presence in agriculture, and a few of them were self-employed. The workers from the other castes were left out of agricultural and non-agricultural activities as they were considered outsiders, and most of the castes other than the Nai were landless. Many workers from these castes were self-employed, mainly involved in scrap dealing and vegetable vending.

To capture which specific technical skills were in demand, a further classification of the non-agricultural wage labour activities was made. The distribution of workers according to this further classification of non-agricultural wage labour activity is presented in Table 3.5.

Table 3.5. Distribution of workers by identity and main categories of economic activity with a further classification of non-agricultural wage labour activities.

Identity	*Agricultural activities*	*Brick maker*	*Masonry*	*Welding activities*	*Non-specified causal labour*	*Private salaried*	*Own account work*	*Govt. salaried*	*Others*
Ansari	2.44	0.81	34.96	4.88	13.82	24.39	13.01	1.63	4.07
Kumhar	16.92	0.00	20.00	1.54	7.69	26.15	24.62	0.00	3.08
Mahto	31.58	0.58	16.37	7.02	15.20	20.47	4.68	0.58	3.51
Others	0.00	0.00	0.00	0.00	12.50	31.25	56.25	0.00	0.00
SC/ST	3.51	17.54	29.82	1.75	26.32	15.79	5.26	0.00	0.00

Source: Household survey by the author.

We can note that the Ansari workers were involved mainly in masonry, private salaried jobs, which were mainly industrial jobs in local industrial units, and driving heavy vehicles. A substantial proportion of workers from this caste were also engaged in tailoring and shopkeeping, vending and other business activities. There was also a substantial proportion of workers in non-specified causal labour. Ansari workers primarily demanded masonry skills, driving skills, skills for industrial jobs, entrepreneurial skills and skills in multiple economic activities to tap the maximum number of non-agricultural activities.

The Kumhars demanded skills in agriculture and masonry. In private salaried jobs, there were mainly drivers. A substantial proportion of Kumhar workers need the skills to be scrap dealers and street vendors. It is also important to note that there was a very small proportion of workers in the category of non-specified causal labour, which can be interpreted as the workers from this caste faced relatively less uncertainty than others concerning the availability of work opportunities.

The Mahto workers demanded agricultural skills. For non-agricultural activities, they required masonry and welding skills. The workers in the private salaried jobs required skills for industrial jobs and skills for driving heavy vehicles. Self-employed Mahtos demanded entrepreneurial skills and other business-related generic skills as they were largely involved in small business activities. Along with these specified practical technical skills, they also demanded technical skills in multiple economic activities as

a substantial proportion of the Mahto workers were in non-specified causal labour. The SC/ST group workers mainly demanded non-agricultural skills in masonry and brickmaking. They also demanded technical skills in multiple and varied non-agricultural economic activities, as a substantial proportion of them were in non-specified causal labour.

This demand for multiple skills, particularly the series of practical technical skills in diverse forms of non-agricultural activities, required learning to acquire these skills. The next chapter will explore various learning processes and discuss how these workers have been acquiring non-agricultural skills during the rural transformation process.

Chapter IV: Processes of learning skills

4.1. Need for skills to be learned

It was seen in the previous chapter that rural transformation in Kusumpali demanded that workers learn multiple skills. This was reflected in the change in the main economic activities of a substantial proportion of workers. The generational mobility reflected in the occupational structure of workers from different age groups demanded that younger workers learn practical technical skills. This need for learning occupation-specific skills was realised from the experience of many workers in the process of their occupational change. The experience of these workers revealed that skills, mainly work practices, were specific to an occupation; hence, when one changed occupations, work practices changed, generating the need for learning new skills. Further, the insignificant role of education in having multiple occupations, as seen in the regression result in the previous chapter, showed the need to learn workplace skills even after formal education and training.

For example, Bhola Prajapati, mentioned in the previous chapter, after completing 12 years of formal education and three months of vocational training in electrician work in Ranchi, faced many challenges when he returned to the village and sought work. He was ultimately required to learn new skills beyond his formal education and training. After training, he did not take the placement opportunity that aligned with his training experiences, as he would have had to migrate outside the state to take the job. When he sought work locally, he got access to one of the large industrial units in the village. In the industrial unit, he was assigned the job of a welder rather than an electrician, in which he had formal training. This process required him to learn new practical technical skills of welding demanded by the industrial job. After working in the silicomanganese industrial plant for a few months, he moved to one of the iron-bar-producing plants in the village, where he was assigned the work of a helper under different chemists. The experience Bhola had gathered when working in the silicomanganese plant had limited application in his role in the iron-bar-producing plant. He had to gather a new set of experiences to carry out the activities in the iron-bar-producing plant. The process of gaining experience by Bhola in all these stages of occupational change involved multiple learning processes.

Similarly, the experience of Subha, also mentioned in the previous chapter, in changing his occupation from a JCB driver to a mason and then to an industrial worker revealed that at each stage he was required to learn a new type of practical technical skills specific to the workplace. It was also noted from his experience that even for changing jobs from one industrial unit to another, he required a different set of skills, which generated the demand for learning. For instance, when he moved to the small roll pipe industrial unit from the silicomanganese industrial plant, he was required to learn new skills. He had to work as a helper to learn the skills specific to the roll pipe industry, manufacturing water pipes from used plastics. The activities in the roll pipe industry, such as grinding the raw materials and, heating and melting the raw materials in the heater, rolling the pipes, were specific. The regular workers in this industrial unit were expected to know how to carry out all the activities, from separating the raw materials to rolling the pipes. Despite Subha having experience in furnace work from a large industry, he was initially required to work as a helper to learn the skills in the roll pipe industrial unit. He needed to learn the skills at the workplace because the skills were specific, even though the types of work were similar. The tools, equipment types and functions differed from his experience in the large industry where he had worked previously. For example, the furnace used in the large industry to produce the silicomanganese differed from that used in the roll pipe industry to melt the used plastic pieces. There was a need to learn skills specific to the nature of the economic activity and the workplace during the process of occupational change.

The need for learning workplace-specific skills was also generated by the differences in the work practices for carrying out the same activity in different locations. For example, it was noted that the roof-centring work in big cities such as Bengaluru and Hyderabad was done with iron bars and metal sheets, whereas the same activity was done with bamboo and wooden sheets locally. Similarly, the wall and roof puttying were done with different blades in different locations. An Ansari worker engaged in wall and roof puttying when he migrated outside the state said they used relatively bigger blades to apply the putty than the ones used locally. To tap work opportunities across locations, workers needed to have multiple skills specific to the demand in each workplace. Thus, there was a demand for enhanced learning skills when changing workplaces even when the activities remained the same.

Additionally, the insignificant role of formal education, accreditation, and the greater role for experience or practical skills while changing occupations or having multiple occupations, all enhanced the need for continuous learning in the workplace. For instance, when cultivators moved to the construction sector to become masons, they required prior experience and practical skills in masonry more than the formal years of education, certificates, and theoretical civil engineering skills. Many agriculturalists in Kusumpali had moved from agriculture to the construction sector by developing masonry skills through alternative learning processes in the workplace. This process revealed that though formal education and training had their role in accessing workplaces, as seen in Bhola's case, formal learning had a limited role in changing and having multiple occupations during the rural transformation in Kusumpali.

The dominance of short-term migration and assignment-based mobility in Kusumpali, further enhanced the need for continuous learning as the same industry could demand different skills at different workplaces. The process of short-term migration increased the uncertainty of work with the variation in the nature of the assignments. The types of work and location were not fixed in this migration process. It varied with the availability of assignments and association with the networks. These variations increased the uncertainty of work, which ultimately required continuous learning of skills.

The networks through which workers migrated outside the state to carry out assignments demanded expertise in one particular economic activity that the networks were specialised in. The network coordinators got the assignment for a specific activity outside the state in different urban centres. When working on these assignments workers needed to develop expertise in a specific economic activity aligned with the specialisation of the migration network. When workers returned to the village after completing an assignment, which was frequent as the migration process was short-term, they were required to learn skills in multiple economic activities to get regular employment locally. A mason had to be a '*raj mistry*' with skills in multiple masonries, such as bricklaying, plastering and centring to get regular work locally. This changing demand for skills based on the variation of the workplace locations further increased the demand for continuous learning of skills in the workplace.

The demand for multiple skills to cope with uncertainty in the availability of work increased the need for workplace learning. These multiple skills were difficult to learn through formal skill development initiatives as the focus of skill development initiatives was limited to imparting skills in a particular set of activities. For example, the Jharkhand government tool room and ITI college in Gola imparted pottery skills to the Kumhars. The types of skills imparted through formal skill development initiatives did not change with the changing demand for skills, leading to a greater preference for workplace learning.

This chapter maps all the processes of learning skills, such as how formal skill development initiatives impart skills, and the alternative processes workers choose to learn skills in the workplace. This chapter is divided into five sections. Following this introduction, the second section will be on how one can acquire skills. This section will distinguish between the various learning processes, focusing on the difference between formal and informal learning processes. The third section will map formal initiatives taken by the government and other autonomous societies on skill development in the region. This section also explores the reasons for limited participation in learning skills through formal initiatives. The fourth section will provide an explanation of the alternative channels workers use to acquire skills in the workplace. The final section will be on the role of learning in innovation required to cope with uncertainties in the rural transformation process. This section will also include the processes of learning involved in innovation and problem-solving.

4.2. Processes of learning skills

Learning has been seen as a multidimensional process that includes “the outcomes of the learning processes”, meaning what changes it brought to one’s capacity not only through biological changes and ageing but also beyond these changes (Illeris, 2007). It has also been seen as “the mental processes” which form the base for the outcomes of the learning process, and further seen as “the interaction processes” with others and their material and social surroundings (Illeris, 2007, p. 3). In the learning process, experience is a key component as knowledge forms “from the combination of grasping and transforming experience” (Kolb, 2015, p. 51) and also through the process of sense or meaning-making where experience changes the existing knowledge (Fiorella & Mayer, 2015). One can gain these experiences in educational, technical, and vocational

training institutions or can also acquire them at home, in the workplace and in other informal settings during leisure through their actions with the processes of learning by doing (Reese, 2011) and 'repetitive learning procedures' (Barber, 2003) or from others (Bound and Middleton, 2003) by observing and imitating others (Bandura, 2008; Bandura & Walters, 1977).

Based on these differences in two primary components of learning (the location and the process through which one acquires knowledge), learning processes have been divided into three types: formal, non-formal and informal (Yang, 2015). "Formal learning occurs as a result of experiences in an education or training institution, with structured learning objectives, learning time and support, leading to certification. Formal learning is intentional from the learner's perspective" (Yang, 2015, p. 9). "Non-formal learning is not provided by an education or training institution and typically does not lead to certification. It is, however, structured (in terms of learning objectives, learning time or learning support). Non-formal is intentional from the learner's perspective" (Yang, 2015, p. 9). "Informal learning results from daily life activities related to work, family or leisure. It is not structured (in terms of learning objectives, learning time or learning support) and typically does not lead to certification. Informal learning may be intentional but in most cases it is non-intentional (or "Incidental"/random)" (Yang, 2015, p. 9).

Hager (1998) used many components (including nine different components) to distinguish formal and informal learning while differentiating between formal and workplace learning. The first component that he used was who controls the learning process; in formal learning, he noted that the control of learning lies in the hands of teachers and trainers when the learning takes place in educational institutes and on-the-job training, respectively and workplace learning is the process where the learner has primary control over the learning process. This means the formal learning process is often intentional which is not always true in the case of workplace learning. The second component he took into account was the structure of the curriculum. In formal learning, he noted the curriculum is prescribed, which is absent in the case of workplace learning. The third component was the predictability of learning outcomes that is, in formal learning, the outcomes are predictable to a large extent, which is less predictable in the case of workplace learning. The fourth component was the nature of knowledge where

knowledge is explicit in formal learning and the learner is aware of the learning process and can articulate the learning outcomes, which is not always true in the case of workplace learning as the knowledge, in this case, is often 'implicit or tacit'. The fifth component was the nature of the process, in which formal knowledge transformed through teaching or training, whereas workplace learning developed through experiences. The sixth component was the focus of the learning process; in formal, it is individual, whereas collaborative, in the case of workplace learning. The seventh component was the applicability of knowledge; in formal, the focus is on the theory, not on the context-specific knowledge, whereas in workplace learning, the focus is on the practical applicability of the knowledge. Hence, knowledge, in this case, is context-specific. The eighth component was similar to the seventh component. The last component was the difference in the effort of learning in formal learning, the effort invested in knowledge rather than the application.

Malcolm et.al. (2003) have also used a large set of components ranging from the location to the power relation in the learning process to distinguish between formal and informal learning. This thesis will distinguish formal and informal learning by summarising all these components discussed above and extending the components into three dimensions: the learning setting, process and outcomes (see Table 4.1).

Table 4.1. Distinction between formal and informal learning.

Types	*Formal*	*Informal*
Settings	Educational, technical and vocational establishments	Workplace, home, and other informal settings where workers spend their leisure time.
Process	Structured • Objective • Curriculum • Time Intentional and instructional	Unstructured • Objective • Content • Time Not intentional always • Random • Incidental Knowledge transformed through multiple processes
Outcome	Predetermined	Ex-post realisation

At the same time, it is also important to recognise the challenges in drawing a clear boundary between the formal and informal learning processes, as the components of formality and informality are present in any learning process. The learning process is continuous, and formal and informal are opposite ends of the same continuum. Only the degree of formality and informality varies in the continuum. We can differentiate between formal and informal learning processes by considering informal learning as the process of learning that comes relatively nearer to the informal end of the continuum than the formal end and *vice-versa* (Eraut, 2004). In reality, it is even more difficult to use formal and informal to distinguish one learning process from others. In this chapter, for simplicity, the skill acquisition processes will be explored by mapping the processes

of learning skills involved when one learns the skills through formal skill development initiatives and the alternative processes workers use to learn skills in the workplace.

4.3. Formal skill development initiatives and constraints in learning

4.3.1. Polytechnic College

The region where Kusumpali is located had many opportunities to learn skills through formal skill development initiatives by the government and independent societies. The skill development opportunities emerged in the decade preceding the fieldwork, particularly after 2015. In 2016, Gola Polytechnic College was set up in Huppu, a neighbouring village of Kusumpali, located at a ten-minute drive from Gola town. This college functioned under the Public Private Partnership (PPP) model. The Department of Higher Technical Education of the Jharkhand government had set up the immovable infrastructure, and the Gurunanak Technical Foundation had been facilitating the other activities. This college offered three-year diploma courses in mechanical engineering, electrical engineering, civil engineering, electrical and electronics engineering and mechanical engineering concerning automobiles under the initiatives of the JIS group. Along with these technical courses, the college also imparted many other non-technical skills, such as soft skills, personality development skills and skills required for resume building and job interviews.

Due to the private sector intervention under the PPP model, the fee structure in the polytechnic college was high, ranging from Rs 35,500 to Rs 1,63,300 for a three-year diploma course. There were a few relaxations for women and students from Scheduled Castes and Scheduled Tribes, but even after the relaxation, the fee structure was not affordable for many. This high fee structure was one of the primary reasons for the limited participation of local people in the polytechnic college. This college was being used by students from the Hazaribagh, Bokaro and other districts of Jharkhand rather than by the local students from the Ramgarh district. During an interaction, a student from Hazaribagh who was in the first year of the diploma course in the polytechnic college said that many of the management quota seats had been occupied by outside students rather than by the local students.

The survey data supported the qualitative observation, reflecting the limited participation of local individuals in the technical courses provided by the polytechnic college. During the survey, it was found that no one from Kusumpali had gone to this polytechnic college to learn skills. One entry barrier to accessing the technical courses provided in the polytechnic college was the high fee structure, and another was the required formal education level. To get admission to the diploma courses in the polytechnic college, the aspirants had to have passed the 12th exam in the science stream or the 10th exam, along with two years of ITI training. In addition, the local individuals were not interested in spending three years learning the skills without the certainty of a job. The placement history of the polytechnic college indicated uncertainty about the jobs after completing the courses. While looking at the placement history of the college, it was observed that none of the 54 students in the civil engineering department in the 2017-20 batch had been placed. The placement statistics of other departments, such as mechanical and electrical showed that a substantial percentage of students from the 2017-20 batch got the placement but not in local areas. They were required to migrate outside the state, such as to Maharashtra, Bengaluru, Tamil Nādu and Aurangabad, for the jobs. The need to migrate for jobs after the training was another reason for the limited interest of local individuals in accessing learning opportunities in the polytechnic college. This was because migration to places outside the state was not open to all. The option of migration to distant places for work was not open to women due to social restrictions. And workers from the lower economic and social strata could not raise the required migration capital.

4.3.2. Free residential training through the government skill development schemes

Even when there was no fee for accessing formal skill development opportunities, the participation in learning skills through these formal learning opportunities was still limited. There were a large set of other limitations, such as the required level of education, age, gender, uncertainty in work and low money value of learned skills after training, earning loss, and the need to migrate. For instance, on the 5th of February 2020, a *Kaushal Mela* (employment fair) was organised in the Gola block office campus under the initiative of the 'Rural Development Department' of the Jharkhand government and 'Jharkhand State Livelihood Promotion Society (JSLPS)'. In this employment fair,

many educational foundations participated and circulated pamphlets among the local population to provide information about the formal skill development opportunities in the region. The criteria mentioned in those pamphlets made explicit the constraints in learning skills through formal initiatives on skill development.

Of the many educational foundations that participated in the employment fair, one was the NIAM educational foundation, which had its training centre in Ranchi. Through the 'Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY)' skill development initiative and in association with the JSLPS, the NIAM foundation provided three months of residential training to individuals belonging to the age bracket of 18 to 35 to become sewing machine operators and electricians. It also assured computer and soft skills, particularly communication skills. This educational foundation also ensured placement in non-farm jobs after training. Though it provided free residential training, it required five years of minimum education for the sewing machine operator training and ten years of formal education for the electrician training. There was no opportunity for earning when one was involved in the training, and after the training, the trainee needed to migrate outside the state for work, mostly to the cities in south India. These constraints limited the local participation in the NIAM foundation's training initiatives. Most of those who had undergone the training through this foundation's initiative had not taken placement opportunities. Bhola Prajapati took the training to be an electrician through this foundation but did not take the placement as it required him to migrate to a south Indian state, and ultimately, he relied on workplace learning to get employment locally. Another such case was Gita Nayak, who had been trained in sewing machine operations through this foundation and migrated to Kerala for a job but after her marriage, she was not able to travel back to Kerala to continue her job.

Like the NIAM foundation, there was E-HEREX, which also circulated information about the three-month training opportunity for sewing machine operators in Ranchi. This skill development initiative of E-HEREX Private Limited also provided training and placement through the DDU-GKY with the JSLPS. The age group for individuals to access the training opportunity was the same as the NIAM foundation but it required a minimum of eight years of formal education to access the opportunity. In this training opportunity, there was no scope for earning during the training period, and placement was provided outside the state. Like E-HEREX Private Limited, Shahi Exports Private

Limited in Ranchi also took the initiative to provide training and placement in sewing machine operators through the DDU-GKY with the JSLPS. The age bracket (18-35 years) and minimum years of education of eighth pass were the criteria for accessing the opportunity. Like others, through this initiative, the placement was provided outside the state and there was no payment during the training. This led to minimal participation of individuals from Kusumpali in learning skills through these formal skill development initiatives.

As was seen in the second chapter, workers from the lower economic and social strata could not join the major networks of migrant workers. There were, however, two exceptions where one Karmali and another Nayak worker had gone outside the district and state, respectively, for work. In such exceptional cases, migration was facilitated by their access to formal skill development and informal networks. The exceptional Nayak worker was Gita Nayak. She was an unmarried woman. She went to Kerala to work in a garment factory during the survey in Kusumpali. Gita got work outside the state after taking three months of free residential training as a sewing machine operator from the training centre in Ranchi of the NIAM foundation in collaboration with the JSLPS and through the DDU-GKY scheme.

Gita had access to this formal training opportunity through her mother's contacts, who headed 15 to 18 Self Help Groups (SHG) in the region. She had access to information concerning skill development and earning opportunities to empower women through her regular interaction with government officials and the members of non-government organisations in the region. Gita got information about free residential training in Ranchi from her mother. She moved to Ranchi and took three months of training in sewing machine operation and got basic English and computer skills. After the training, she got a placement opportunity in Kerala and initial financial support to migrate from the training institute. She worked there for a year, returned to the village, and never returned to her workplace. When she returned to the village, she got married, which restricted her mobility outside the state for work. It was difficult for members of the Nayak caste and the scheduled tribes and even more challenging for women from these caste groups to access formal skill development opportunities.

Women from these caste groups and across caste groups faced challenges accessing formal skill development and employment opportunities outside the village. An

unmarried Mahto woman had gone to Kerala with Gita Nayak after completing the same three months of free residential training from Ranchi. Gita was the woman's neighbour, and passed the information to her, and later worked in the same workplace in Kerala. But like Gita, she had also returned to the village, got married, and had never been to work again. Another Mahto woman went for formal training in sewing machine operation in Ranchi but could not work after training. She got placement in two places, one in Gujarat and the other in Kerala, but her family did not allow her to go outside the state for work.

In another instance, a Kumhar woman who was doing her graduation from a nearby town wanted beautician and nursing training but could not get permission from her family as the training centre was located around 30 kilometres away from the village. The social restriction on women accessing the skill learning and earning opportunities available outside the village was more challenging for women belonging to the Muslim community. Muslim women were not allowed outside the Gola region for any skill training. Even though they got formal training from the skill development initiative in the region, they were not allowed to go outside for work. One Ansari married woman took a one-month training in tailoring through the Skill India initiatives from a training centre in a neighbouring village. After her training, she got a certificate and the opportunity to work, but her husband did not allow her to go out to work. She took a loan of Rs 8,000 and purchased a sewing machine hoping to earn something by working from home. However, she did not get work as there were many tailors with whom she could not compete as she did not have experience. Her condition was vulnerable as she could not repay the loan, she had taken to purchase the sewing machine.

4.3.3. Jharkhand government tool room ITI college Gola

Besides the polytechnic college and the training opportunity created through the DDU-GKY scheme and with the initiatives of JSLPS, there was an Industrial Training Institute (ITI), i.e., the Jharkhand government tool room ITI college of Gola. The ITI college was located in Kenke, which is half a kilometre away from the village. This ITI college was developed after the polytechnic college in 2018-19. However, the institute did not start functioning fully till 2020. As per the advertisement made by this training institute, the focus was to provide vocational training to engineers, diploma and ITI

students on CNC programming and operation, 3D printing and many other technical skills.

During the study in 2019-22, there were no other training activities other than a residential one-month training programme on pottery and terracotta activities in the ITI college. The training in pottery and terracotta activities was provided by the initiative of the Jharkhand Mati Kala Board with assistance from the Jharkhand government. This one-month free residential training was organised to train the Kumhars with their traditional pottery skills and, through the terracotta skills, enhance the exchange value for their traditional skills. During the training period, Rs 150 remuneration per day to the trainee, along with free food and accommodation, was provided. According to this provision, the trainees used to get the sum of their income at the end of the one-month training programme. A ceramic engineer with a formal degree and work experience of more than six years in the domain of terracotta was assigned as the trainer in the training centre. The training had two parts: theory and the practical application of the theory. The initial days were invested in teaching the theoretical knowledge behind pottery skills, from preparing the clay to firing clay pots. Later days were divided into two parts: the first half of the day invested in theory and the latter half in gaining practical experience of the theory.

While spending days in the training centre, it was observed that the learning process was primarily instructional. The trainer emphasized the theoretical aspects of the skills rather than the practical aspects. When sitting with the trainees in their classes, it was noted that the trainer used flow charts, pointers, and other teaching methods to instruct the trainees. When the trainer was trying to teach how to prepare clay in one of the classes, he used one flow chart (see Figure 4.1). While learning the theoretical part in the classroom, the trainees primarily depended on the trainers' instructions. This process of instructional learning was one of the major limitations of acquiring skills on terracotta activities as many of the trainees in this particular centre were illiterate, did not know how to read and write, and some of them, mainly the women, were not able to understand and communicate in Hindi whereas the trainer was communicating in Hindi rather than in Kortha, the local language.

Chart on preparing clay

↓ ↓

Local soil (Red soil) Water

↓

Disintegrator

↓

Sieving

↓

Grinding

↓

Weight of Batch

↓

Ball mill ←Water

↓

Filter

↓

Pugging

↓

Casting

↓

Drying

↓

Finishing

↓

Firing

Figure 4.1. Flow chart prepared by the trainer on the blackboard.

It was also noted that the centre was used by outsiders from other districts and regions. The learning process was instructional as there was only one permanent and a temporary trainer for 50 trainees in one batch. The practical aspect of training was also missing as the centre had limited training equipment. For example, there was only one soil preparation machine, five electric pottery wheels and three Plaster of Paris machines for making terracotta pots. At the same time, it was observed that the trainees required more time and involvement with the equipment, as these types of equipment were new to them. For instance, the electric pottery wheels were new to many of them as they had access to the manual pottery wheel at their homes. The training period was also short for many of them to learn the new techniques for pottery activities, highlighted by many trainees in their interaction with this author.

The opportunity to learn skills through this initiative was limited as it was caste-based. It was meant only for the Kumhars, excluding other castes in the village. There were a few exceptions where a few Mahtos participated in the training initiative but there were no participants from any other castes. Some Mahtos got access to this learning opportunity as the Kumhar and Mahto considered themselves at a similar level in the caste hierarchy. The limited accessibility and greater importance to teaching rather than training, less or no marketability of the acquired skills in the region, and significant loss of earnings, made this learning option less preferable.

The lack of the required level of formal education was another important barrier to accessing formal skill development opportunities. The polytechnic college in the region demanded a 12th pass in the science stream or a 10th pass with two years of ITI training. The skill-providing institutes through government skill development schemes demanded education levels from the fifth pass to the tenth pass. As 30.01 per cent of

the working-age population in the village was illiterate, they had no access to these institutes. The lack of access to formal skill development opportunities pushed workers to prefer alternative learning processes to learn the skills.

4.4. Learning skills in the workplace

The easy access, flexibility and lower sacrifice of earning attracted many workers to learn new skills in alternative learning settings outside the formal skill development centres. The workplace was a prominent learning space for improving or acquiring new skills among all other alternative settings. In the workplace, it was observed that the workers were following channels such as observation, imitation, repetition and learning-by-doing to develop skills. During rural transformation in Kusumpali, workers used these processes to develop multiple skills, and most of them did so while working as helpers under skilled and experienced workers.

4.4.1. Learning by repetitive procedures and learning by doing

Barber (2003) noted that the process of "learning by repetitive procedures" was a common process of acquiring skills in the workplace. According to him, it was a process where one could acquire skills by repeating the procedures demonstrated by others until they became proficient in doing the activity. He further mentioned that some procedures were easy to follow, whereas others required further help whenever one faced problems in following the demonstrated procedures. This learning process was common among the workers in Kusumpali who were learning skills in the workplace from others, mainly by working as a helper to the skilled and experienced workers.

The workers in the village were generally learning the masonry skills through this process. To learn masonry, they approached a skilled mason usually from the same identity group but also sometimes from a different identity group. Working under them as helpers, they initiated several processes like observing, imitating, doing the work with the mason and, more commonly, by following the instructions and repeating the demonstrated procedures. Learning masonry skills by working as a helper under a mason was so deeply entrenched that local workers could not even think about any

other way of learning masonry skills. It was noted by Subal Mahto, a mason mentioned in the earlier chapters of this thesis, that; “Only after you serve as a *khalassi* (helper) can you be a mason”. They learned the masonry skills, starting from preparing the concrete to roof centring, mainly through repetitive learning procedures where the mason sometimes instructed and often demonstrated the procedures. The fellow workers followed the instructions and simply repeated the procedures until they could do the activity by themselves effectively and efficiently.

The mechanics and others involved in the welding activities were also learning the activities through repetitive procedures. One mechanic, Ali Ansari, who was involved in installing and repairing air conditioners, washing machines and refrigerators, learned these skills through this process from a workshop organised by a multinational company in Ramgarh. In the workshop, the company hired skilled workers with formal training to demonstrate the procedures. By following the demonstrated procedures and by trying them out independently, Ali learned the required skills to install and repair air conditioners, washing machines and refrigerators.

Similarly, after completing ten years of formal education, two other Ansari workers got access to a workshop in Gola through their relatives to learn welding-related skills. One of these Ansari workers mentioned that one of his cousins was working in the workshop in Gola, and he learned welding-related skills working under his brother as a helper. He learned the welding activities involved in making the different types of gates, shutters, stairs grills, load-bearing frames of automobiles and the iron and sheet shades of large industrial plants. He mentioned that his brother demonstrated the procedures, for example, how to cut the iron pieces and sheets, how to weld and how to move the welding machines for different types of welding like vertical, horizontal and root welding. His brother demonstrated the procedures sometimes by holding his hands and often by himself. He observed the demonstrated procedures and repeated the procedures initially with his brother and later by himself, and he learned the skills through his actions by doing and repeating the procedures.

Similarly, among the industrial workers who were working in the local industrial units, the process of learning by doing and through repetitive procedures was common in acquiring the required non-agricultural skills. For example, Bhola Prajapati mentioned that when he started working in the iron-bar-producing unit in the village, he learned

the skills by doing and repeating the procedure demonstrated by his coworkers. In his case, he got very few opportunities to learn from the skilled chemists under whom he worked, and he learned the skills by following the procedures demonstrated by his coworkers. Bhola worked with three other helpers, they demonstrated the procedures, such as how to operate the drilling machine while collecting the samples from the raw materials, intermediate and final products. The rest of his skills, like testing the chemical components of the iron ores and bars, he learned by doing and from others, by observing and imitating the procedures of the experienced chemists.

4.4.2. Learning from others

Learning from others in the workplace was also a common method in acquiring masonry skills by working as a helper under skilled masons. One of them was Amar Prajapati, who coordinated the largest caste-based migration network and had skills in multiple masonry activities and expertise in roof centring work. Before he migrated to Bengaluru, he worked as a helper under a mason from the Kumhar caste in the Gola area. From him, Amar learned basic masonry skills. Amar had learned the basic skills in masonry activities by observing the mason, doing work along with the mason and solving problems with the help of the mason. When he migrated to Bengaluru, he got to work with masons from different states, where he developed expertise in roof-centring work by doing the same activity repetitively. When he had expertise in roof-centring work, his younger brother and members of his extended family and caste learned the skills from him. They then dominated the contracts on masonry for workers in Kusumpali both locally and outside the state.

Similarly, Aslam Ansari, who coordinated the largest migration network for welding-related activities, learned the skills from one of his maternal uncles. His uncle was a welding mason engaged in constructing iron and steel structures for plants and apartments. Observing his uncle and other welding masons on the site taught him welding skills. He also took suggestions and guidance from his uncle. He worked alongside his uncle when the latter faced any problem on the site. In the initial stage, he learned the technical aspect of welding skills by observing and following the suggestions and instructions of his uncle and then doing the work with his uncle. The

learning process was smooth and easy as he worked with one of his family members, which facilitated the learning by doing strategy rather than being a passive observer.

The benefit of working with a person from the same identity group is not only limited to developing technical skills but also extended to how to expand the work network for future contracts. The ability of Aslam to expand the network helped him to migrate to different states of India, starting from Goa and Maharashtra to Karnataka and Chennai, Tamil Nadu. Just before the first wave of COVID-19, he was working in Chennai, where he took his younger brother to help him learn welding skills. Using his network-building and hosting ability, he helped, in addition to his brother, two of his cousins from his extended family, two Mahto workers who were his neighbours in the village, who migrated with him to Chennai. By developing expertise in welding-related skills and expanding work networks, he was able to dominate the largest migration network in the village in welding.

4.4.2.1. Learning through observation

Learning through observation was the method of acquiring non-agricultural skills for those who did not have access to the networks. In such cases, the workers approached the skilled workers from other identity groups, and under them, they learned the skills. One such worker was Budha Karmali, a Karmali mason who had centring, plastering, and bricklaying skills. He worked in the local sites under a local contractor from a neighbouring village. Masonry was not his traditional occupation, though his father also did masonry work. The Karmalis generally migrated to Kusumpali from different parts of Nagpur for blacksmithing, mainly to sharpen the iron part of the wooden plough and other iron tools used in agricultural activities. Budha did not have blacksmithing skills and had never learned and engaged in this occupation for his living. His father was doing blacksmithing work as his secondary means of living. This situation pushed Budha to seek work outside the traditional occupation of Karmalis, and agriculture. He migrated to Mumbai when he got information about a work opportunity from one of a fellow Ansari in the village who worked as a vegetable vendor in Mumbai. Budha migrated with the vegetable vendor and started selling vegetables with a cart in Mumbai. He did this work for two years and returned to the village to get married. After

his marriage, he started looking for work options locally and decided not to migrate anymore to long-distance workplaces because of his family responsibilities.

He started working as a helper under a Mason from the Nayak caste. He began by helping the mason prepare the concrete, pass the tools, etc. By observing the mason, he learnt the masonry skills within a year. The observation was an essential strategy for acquiring the masonry skill for Budha. This strategy was preferred by workers when they worked with skilled workers from different identities. After learning the skill, Budha started working independently as a mason by taking private contracts locally within Ramgarh district. However, getting work options regularly through personal contact was very difficult. Consequently, for five years preceding the survey he had been working under a local contractor from the neighbouring village. He got work regularly through the contractor, but in return for this regular work opportunity, he had to give some portion of his earnings to the contractor.

4.4.2.2. Learning by imitation

Learning by imitation was common among the masons and drivers in Kusumpali in acquiring skills by working as a helper under experienced workers. In learning by imitation, "imitation is more than the mere ability to reproduce others' actions; it is the ability to replicate and, by so doing, learn "new" skills…by the simple observation of those performed by others" (Billard, 2001, p. 156). One can learn the skills by direct means of imitation or through the indirect means of teaching (Billard, 2001). The masons and drivers in Kusumpali used the direct means of imitation to learn the required motor skills for masonry and driving. They learned the skills by observing and imitating both the repetitive and precise movements of the hands, legs, and other segments of the body of the skilled workers. Like learning through observation in learning by imitation observation is a crucial component in the learning process when one learns the skills from others by working as a helper under skilled workers. In this thesis, these two processes have been discussed separately. Workers learning by observation in Kusumpali were typically seen using incidental learning. In this incidental learning, one learns the skills "as a byproduct of some other activity, such as task accomplishment, interpersonal interaction, sensing the organisational culture, trial-and-error experimentation, or even formal learning" (Marsick & Watkins, 2001, p. 25).

In contrast, workers who learned by imitation were seen learning skills by doing the same activity in which they wanted to learn the skills in the workplace by imitating the actions of the skilled worker. When workers for example Budha Karmali mentioned earlier learned the masonry skills through observation when working as a helper under a Nayak mason he learned the skills through task accomplishment. In many instances, the tasks that Budha was carrying out were not the same as the Nayak mason was doing. For example, when the mason was doing the bricks laying and plastering of walls Budha was engaged in concrete preparation and passing the tools and masonry equipment to the mason. Hence, his learning of masonry skills was a byproduct of activities that he did as a construction labourer under the Nayak Mason. The learning process of Budha Karmali was different from the workers such as the masons like Fagunu Prajapati who learned the skills primarily through imitation.

Fagunu Prajapati was involved in masonry work for 15 to 20 years. He knew plastering, brick lining, foundation, and roof-centring work. He learned these skills by helping an Ansari mason belonging to the village. Learning by doing was one of the methods he kept citing repetitively in many of our conversations. It was true that this method, along with the observation method, was common among the workers when they acquired skills from a skilled mason from a different identity group. Along with the method of learning by doing and observation, he cited imitation as another method through which he learned masonry skills. In our discussion, he cited an example of the learning process of bricklaying where he said that while carrying out the process of bricklaying, the mason puts a straight-line string connecting the two opposite ends of the wall. Then, both started joining the bricks from opposite ends; in this process, he observed the mason and his procedure and followed the same by imitating the same bricklaying procedure carried out by the skilled mason. He learned the concrete-making process by following the instructions of the mason. He said for making the ten-inch wall, the proportion of sand and cement ratio should be 7:1; similarly, for making the five-inch wall, the ratio should be 5: 1. In this line, he detailed the difference in concrete preparation used for plastering and centring.

Though both Budha and Fagunu learned the skills from others by working as helpers under the skilled masons from different identity groups their means of learning were different. In both cases, observation was the primary component in the learning

processes but in Budha's case, the learning of masonry skills was a byproduct of his engagement in carrying out the activities of a construction labour rather than a mason. However, in the case of Fagunu, the learning of masonry skills was through direct imitation of the skilled Ansari mason with whom he was working as a helper. Unlike Budha, Fagunu was learning the skills by doing the same activities that the skilled mason was doing. For example, if the skilled mason was doing the bricklaying, then Fagunu was also involved in bricklaying and learned the skills by observing the hand movements of the skilled worker and imitating his movements. In simple terms, when learning by imitating skilled workers fellow workers were seen repeating the actions of the skilled workers simultaneously with him when he performed an action or immediately in the workplace. This sort of immediate repetition of actions of the skilled workers had not always been seen for workers learning through observation.

Learning by imitating experienced workers was also observed as a common method among those involved in heavy vehicle driving. In the village, a substantial proportion of workers were involved in heavy vehicle driving in different mines both within and outside the state. These workers learned the skills through '*khalassi'* (working under a skilled driver), by observing and imitating the activities of the drivers.

4.5. Demand for learning skills in Innovation

We have seen the need for learning skills for tapping the jobs emerging out of rural transformation. The workers who could not tap these jobs became self-employed by finding alternative means of living through innovation. For example, with the emergence of large industrial units in the village, many landholding households and those with capital started a series of businesses in the emerging market area. While keeping the demand for the industrial workers' food, groceries and clothing needs, many local individuals started running small tea and snack stalls, food stalls, grocery stores, egg and meat counters and garment and tailoring stores near the industrial units. Being self-employed through these non-agricultural activities, however, required land in the emerging market area and lumpsum initial capital.

The inability to access non-farm jobs or to start small businesses, which required land and large investment, forced some of the workers to look for alternative routes to self-

employment. They sought other non-agricultural activities which required less investment and provided them with enough opportunities. In some cases, finding alternative ways to be self-employed with limited means led to innovation. Innovation under the situation of limited means is not new. Barber (2004) noted how informally trained auto mechanics have developed the complete bodies of Jeeps with homemade tools. He also mentioned the emergence of new or different work practices is a crucial advantage in the informal sector. Further, he noted that "innovation was not only an advantage, but also often a necessity" (Barber, 2004, p. 133). However, the process of innovation also requires the learning of skills.

4.5.1. Motivation for innovation: Need to create products from scrap

Figure 4.2. Innovation by Sukhender Prajapati.

Source: Photo by the author.

We can explore the motivation and processes of learning skills involved in innovation through the experience of Sukhender Prajapati. Sukhender made a modified motorcycle with a carrier from scrap (see Figure 4.2). He belonged to the Kumhar community but never learned the skills required for pottery, which was their traditional occupation. He also didn't belong to a landholding household, unlike many Kumhars in the region. His identity as a worker from a landless household limited his options to find employment

in agriculture and local industrial units, as the agricultural activities in the village were largely carried out by family labour, and the industrialists often preferred hiring workers from landowning households who had sold land to the industries. Additionally, there was resistance to the idea of hiring local workers, particularly landless ones.

Sukhender did not pursue his traditional caste-based occupation and could not start any shops or businesses in the emerging market area near the local industries. He neither had land in the emerging market area nor had large capital to invest in shops or businesses. Being 40 years old and having received only three years of formal education limited his option for migration to tap the non-farm jobs available outside the district and state. The only option he had left was to find self-employed work at commuting distances, which would require minimum initial capital. He started dealing in scrap and had been involved in this activity for 20 to 22 years. As he put it,

> "My father and others from his generation were involved in pottery-related activities… but we have never learned pottery work-related skills… second thing, we are not educated... so I chose this alternative way by holding the hands of others… and learning from them. Today with that I am now managing my living and taking care of my family."

He had a small piece of land on which he built a small sheet-roof house with a toilet in the compound. The assets possessed by his household included a cycle, a modified motorcycle, a mobile and three fans. While discussing his economic activity in detail, he explained that he collected scraps, particularly scrap iron, tin, plastics, books, notebooks and papers from rural areas, both from households and shops and sold them in a census town located around 10 kilometres away from the village. He bought scraps at a lower price from rural areas and sold them at a relatively higher price in a godown in the town, and with that little margin, he managed his living. Initially, he had a cycle-rickshaw which he used to do scrap dealing with others. From them, he learned the skills of scrap dealing. While working with others, he learned where and how to collect and sell the scraps. It required knowledge about the availability of scrap products for collecting many scraps from limited places and about the place for selling the collected scraps at a higher price. It also required interpersonal skills as it had been a competitive activity with the involvement of an increasing number of individuals. He learned all these skills while working with others and by observing others when dealing with the

local population, dealing with the shop owner while collecting scraps, and dealing with the dealers at the godown while selling the products.

The demand for scrap products had increased with the emergence of industries, with the appearance of numerous shops, particularly on the '*Rajrappa road'* that connects Gola town with the renowned '*Chinnamastika'* temple of Rajrappa through Kusumpali and many other villages. The economic activities on both sides of the road increased as Gola town expanded towards Kusumpali; as a response, this village and the other villages in between were also expanding on this road. The increasing demand for scrap products, particularly cardboard-related scraps, was met by the emergence of large shopping malls such as the Reliance Trends and many more in Gola town. To meet the increasing demand, he needed to cover a large distance, work for more hours, and get relief from health-related issues, he purchased a motorcycle in 2019. He said while doing scrap activities with the manual cycle rickshaw he used to experience health-related issues such as chest pain and swelling in his hands and legs. These health-related problems manifested because he had to pull the rickshaw for more than 50 to 60 kilometres daily, which became more difficult when his age crossed 40 years.

He bought a second-hand TVS Star City motorcycle from the town where he sold the collected scrap products, for Rs 12,500. He then modified the motorcycle and attached the carrier of his rickshaw to the motorcycle. The motorcycle was modified without changing the function and body of the motorcycle other than the motorcycle seat. He removed the motorcycle's seat and attached the rickshaw's carrier with the help of iron and wooden bars.

4.5.2. Processes of learning in innovation

Unlike the processes of learning involved in tapping the non-farm jobs, which were largely collaborative learning, the processes of learning observed in innovation were mainly self-directed. It is a learning process where the learner directs the conceptualisation, design, evaluation (Brookfield, 2009) and problem-solving. For example, the carrier vehicle to cover more area with less effort was conceptualised by Sukhender due to the need (to counter the exclusion) and opportunity (to increase the scale with minimum effort) led by the rural transformation in Kusumpali.

He also directed the learning processes of designing a modified motorcycle by attaching a cycle rickshaw carrier and the carrier from scrap products. He said that the carrier was made out of two scrap iron mobile oil drums and some pieces of scrap iron bars. He collected the iron drums from the scrap godown, where he sold his scraps against cash. He collected two drums of around 22 kg each for Rs. 40 per kg. He collected the pieces of iron bars from different rural areas for Rs 25 per kg at different stages. After collecting the iron bars and drums, he took them to one of his brothers, a welder in the town. He then instructed his brother to remove the front and back caps of the drums. When they removed the top and bottom portions of the drums, it reduced the weight of the drums by 6 kg each. After removing the top and bottom caps of the drums, he instructed his brother to make two plain sheets out of the two drums. He further instructed his brother to do the welding of the iron sheet with the iron bars and make a carrier out of that. He initially used two iron bars, each weighing around 5 to 6 kg. According to him, he had not incurred any cost of labour other than Rs 800 to the welder for his labour. Sukhender said that he has never taken any ideas from anyone in developing the products. He further added,

> "From the beginning, when I first modified the rickshaw to the time when I developed this motorcycle, it was all my knowledge through which I made all these modifications… before 2019, we never saw such a modified motorcycle in our locality… we were the first to develop this sort of modified motorcycle…there were three others from the town, including me we four modified our motorcycles together…after seeing us, there are many more now, but none of them is like ours."

4.5.2.1. Problem-solving

When he initially developed the motorcycle, he met with accidents due to problems with the product. He said the product had levelling issues. He also experienced a few instances when the motorcycle was not moving straight but rather pulling him in one direction. He also noted that in a few instances, he was not able to start the motorcycle and did not know the exact problem. These issues with the product demanded problem-solving skills. The processes through which he solved the problems that he faced

revealed that the problem-solving process involved two learning processes, one reflective practice and another, the trial-and-error method.

The way he solved the problem when he was not able to start the motorcycle and did not know the exact problem revealed that it involved the reflective practice of learning. It is an 'iterative loop' that starts with the process of problem identification, followed by solution exploration, solution testing and solution monitoring (Barber, 2004). According to this process, one learns through solving a particular problem by first identifying the problem, testing and monitoring the solution and finding an effective solution. The process of learning ends when one effectively solves a problem; otherwise, the process repeats from the beginning with the problem identification. Sukhender noted that when he faced the problem where he was not able to start the motorcycle, he first disassembled all parts of the motorcycle to identify the problem. He then sought solutions through different thought processes by combining his past experiences and other accumulated knowledge, and often by intuition, he found a solution and tested and monitored the solution until he successfully started the motorcycle. Sometimes, he took the help of others for welding-related help but never depended on others for an idea for solving problems.

Similarly, how he solved the levelling issues with the product, and the problem of the motorcycle not moving straight but pulling him in one direction, involved the trial-and-error learning method. It is one of the popular problem-solving methods (Tönnsen, 2021). In this method, one tries to solve a problem through random actions when one does not have a solution in advance. In this process, learning happens through trialing random solutions one after another, and at each stage, an evaluation is made. If the trial of an idea provides a negative result, that is followed by testing another idea, and this loop of trial and error continues till one has solved a particular problem (Tönnsen, 2021). To solve the levelling issues, he first checked the tyre pressure of the rickshaw wheels attached to the carrier, which was his everyday practice. With this procedure, he did not solve the problem, he then intuitively changed the height of the rickshaw wheels attached to the carriers, which also did not work. Then, he attached a heavy piece of wood at the back, which solved the problem. The idea of attaching a piece of wood came from his daily experience of observing workers who were involved in stealing coal in bicycles carrying a heavy piece of wood, as demonstrated in Figure 4.3, to make the balance of the bicycles. Watkins and Marsick (1992) conceptualised this

type of knowledge as ‘tacit knowledge’ when one derives knowledge from incidental experiences to develop an understanding.

Figure 4.3. A worker carrying coal on his bicycle.

Source: Photo by the author.

4.5.3. Repetition of the Innovation Procedure

Figure 4.4. Innovation by Fagulal Ansari.

Source: Photo by the author.

After seeing the product developed by Sukhendar, a few others have developed similar products by learning the process of innovation from him. One such case was that of Fagulal, a Muslim immigrant, who had also modified his motorcycle with scrap products. Fagulal was a 45-year-old immigrant from Bihar living in a rented house with his family in the emerging market area. He had received two years of formal education but was able to migrate to Jharkhand as Gola was his maternal place. He was involved in scrap dealing activities, used to collect used oil tins, plastic bags, cardboard and other scraps from different shops and malls in Gola and was selling them in Ramgarh.

Earlier, he was doing the activity manually, collecting the scraps from different shops and carrying them on his head, then loading them in a bus or auto to sell the products in Ramgarh. Sometimes, based on the weight of the products, he hired a manual cycle rickshaw to carry the products from the shops to his house or to the Gola bus stop. He

mentioned that carrying the products on his head daily was a painful task, and he was not able to do the activity for long because of his age. He planned to buy a motorcycle and modify it to carry the scraps after seeing the modified motorcycle developed by Sukhender. He then bought a second-hand Hero Honda motorcycle from Gola, paying Rs 10,000.

As both of them were involved in the same activity, they interacted on a regular basis. With his interaction with Sukhender, Fagulal learned how to create the product from scraps. Fagulal got a scrap advertising tin hoarding from a shop and took that to the welding shop where Sukhender's brother was working to make a carrier out of the hoarding and joined that with his motorcycle by fitting two cycle rickshaw wheels. In this process, he spent a total of Rs 2,200. In creating the product, he used all the knowledge he gathered from the experience of Sukhender and through the expertise of the welder. While answering a question about the change in his income after using the motorcycle for his work, he said his earnings had not changed and that he earned Rs 100 to Rs 150 daily. But in the background, his wife said his average earnings had reached Rs 400 because of the motorcycle. This shows how innovation has changed the earning structure of workers and made them part of the rural transformation process, who otherwise would have been excluded from the opportunities provided by the process of structural change.

To learn skills through the formal skill development system in the region required access to formal opportunities for acquiring skills. Differences in accessing these opportunities lead to inequalities in learning skills. Similarly, collaborative learning in workplaces to learn non-agricultural skills required access to workplaces. Likewise, self-directed learning and learning from others involved in innovation required access to informal finance to arrange the initial capital necessary to innovate alternative means for self-employment. Differences in access to workplaces and informal finance can generate differences, leading to inequalities in learning skills. The next chapter will outline the differences in the process of learning skills and identify which differences can be considered inequalities.

Chapter V: Inequalities in the processes of learning skills

5.1. Introduction

The earlier chapters discussed rural transformation in Kusumpali and the importance of acquiring multiple skills to participate in this change. The last chapter examined various learning processes, including the government and autonomous societies' formal initiatives on skill development. It also explored the learning processes in the workplace, a primary informal setting for acquiring skills for workers of Kusumpali. While mapping formal skill development initiatives in the region, it was noted that some groups and individuals faced barriers in accessing such opportunities. These differences could lead to intergroup and interpersonal inequalities. As a result of these differences, many individuals relied on workplace learning to acquire skills. Like formal learning, though, workplace learning can also see differences in access and experience across groups and between individuals, resulting in intergroup and interpersonal inequalities. We can see the emergence of intrapersonal inequality with the differences in an individual's experience across economic activities and locations. This chapter explores all the inequalities in the processes of learning skills. It also examines whether the nature of inequalities in informal learning is aligned with formal learning. If they are, the inequalities in informal learning may exacerbate those of formal learning. If not, a new set of inequalities may emerge.

Inequality has been defined and perceived in multiple ways by various scholars based on their disciplinary backgrounds and interests. It is commonly understood as a measurement of uneven distribution in a particular structure, practice or system. These unevenness and imbalances can be observed in economic, social, political, and regional dimensions. In the economics literature, economists have broadly argued about inequality in three economic aspects: wealth, income and consumption (Das et al., 2016). Inequality has also been understood as a “lack of equality” in various aspects ranging from status to opportunity (Danel, 2016). The definition of inequality in which the thesis is interested defines inequality as the differences in the attributes of individuals and groups (Babikir, 2018). However, not all the differences can be termed as inequality as some of the differences (for example, the variation in talent and ability in learning) can be considered aspirational differences. The thesis uses a more specific

definition of inequality where ‘it considered only those sets of differences as inequality which are not ethically acceptable’ (Pani, 2017). The primary concern of the thesis is to first map all the differences that exist in the process of learning skills. It then extends the analysis to identify the ethically undesirable differences that lie in the process of learning skills from the large set of differences.

The differences in the characteristics of individuals, groups and other unethical differences in society that arise as a result of the differences in the movement away from agriculture, can influence the process of learning skills. In India, the socio-economic structure of a society is interlinked with formal education and informal learning. For example, Vidya i.e., education, is related to Veda and Varna i.e., religion and caste respectively (Borooah & Iyer, 2005). Similarly, social capital which is a set of three components such as ‘network, norms and shared trust’ is related to caste and ultimately to learning (Coffield, 2000; Srinivas & Béteille, 1964). Caste has an association with mobility in the occupational structure as well. Caste differences contribute to differences in the ability to change occupations which leads to variation in access to learning at the workplace (Driver, 1962). The social capital, formal education and informal learning are interrelated and influence each other (Field & Spence, 2000).

Again, there is an association between “education, inequality and social mobility” (Froerer, 2011). In Sen’s consideration of ‘development as expansion of freedom’ one important determinant of freedom is education (Sen, 1999). Referring to the instrumental function of education, Drèze and Sen (1995) argued that social mobility happens through education which also gives access to various opportunities. Human capital (where education is a component) is related to wage inequality (Dutta, 2005). Differences in the level of skill and wage differences are also related to each other (Sarkar & Mehta, 2010). Lifelong learning, income inequality and social mobility also have an association among themselves (M. Lee & Morris, 2016). It has also been seen that educational factors play an important role in bringing equality in the distribution of income (Gregorio & Lee, 2002).

It was evident in Kusumpali that learning skills had the potential to reduce inequalities. For instance, learning non-agricultural skills by agriculturalists could reduce intergroup and interpersonal inequalities between agriculturalists and non-agricultural workers.

Differences between the agricultural and non-agricultural workers were observed in the availability of opportunities for workplace learning, which was essential to cope with uncertainty. In this regard, non-agricultural workers had greater opportunities for workplace learning as they had access to non-agricultural workplaces in the village and outside. Conversely, the workplace learning of agriculturalists was limited when they were carrying out agriculture as their primary activity without having any secondary economic activity in other sectors. The different opportunities for learning in agriculture and non-agriculture brought up the possibility of working in both sectors. Agriculturalists could expand their workplace learning opportunities by accessing multiple non-agricultural workplaces in the village and outside.

The processes of learning could then be associated with inequality in multiple ways. They could perpetuate inequalities, they could generate further inequalities, and they could mitigate inequalities. The experience of Kusumpali gives us an insight into the multidimensional nature of the relationship between learning and inequality at a time of rural transformation.

The five sections of this chapter explore the differences in accessing learning opportunities, both formal and informal. Following this introduction, the second section explores the differences in formal learning. The focus is on identifying who gets access to, and who has been excluded from formal learning. The differences in accessing formal learning will then be mapped by demonstrating the variation in educational attainment across groups and between individuals to identify the intergroup and interpersonal inequalities in formal learning. These inequalities in formal learning added to the search for informal learning. The third section investigates who searched for informal learning, and who were excluded. It also explores why some groups were not required to search for alternative learning processes. The fourth section explores the challenges in accessing workplace learning, a primary form of informal learning preferred by the workers of Kusumpali during the rural transformation. The challenges in accessing the workplaces generate differences in informal learning. This section then explores the differences in informal learning and the resulting inequalities in informal learning. The fifth section compares the inequalities of informal learning with that of formal learning. This last section addressed the consequences of inequalities in learning skills. It also discusses the consequences of learning skills on inequalities. This section

deals with what learning skills do to inequalities, whether it reduces them, perpetuates the existing inequalities, or leads to new sets of differences, resulting in new inequalities.

5.2. Differences in formal learning

It has already been noted in the previous chapter that there were constraints in accessing formal learning processes as there were barriers to accessing formal skill development opportunities in the region, evident in the lower participation of individuals in formal skill training centres and other skill development institutes. There were also barriers to accessing formal education, reflected in the lower participation in formal education and low educational attainment of individuals from Kusumpali. The lower participation of individuals in formal education was reflected in the lower percentage of the literate population in the village compared to the state and national averages. For instance, the literacy rate in the village was 55.42 per cent compared to 66.41 per cent for Jharkhand and 72.98 per cent for India as per the census, 2011. Similarly, the low educational attainment of the population of the village can be perceived from the survey data collected in 2019-20 for this thesis showing that the average years of education received by individuals who were 15 years and above was 1.89 years. Out of the adult population (ages 15 years and above), 33.67 per cent had zero years of formal education, and 60.38 per cent had less than five years of education.

As highlighted in the previous chapter, access to formal learning processes was unequal. Some groups and individuals had easy access to these processes, while others faced many challenges. Differences in accessing formal learning processes across groups led to intergroup inequality just as differences between individuals led to interpersonal inequality in formal learning. Whether the inequality in accessing formal learning processes led to a reduction in existing inequalities or exacerbated them depended on who got access to the opportunities for formal skill learning and education and who were excluded from the formal skill development opportunities and formal education.

To map the differences in accessing formal learning processes across groups and between individuals, the nature and design of formal skill development initiatives in

the region were analysed. It helped evaluate whether these initiatives provided equal access to all groups and individuals or favoured some and excluded others. The field reality revealed that the formal skill development initiatives made in the region had been designed in such a way that it led to intergroup and interpersonal inequality. For example, the one-month training programme designed to impart pottery and terracotta skills by the 'Jharkhand Mati Kala Board' in association with the Jharkhand government and functioning in Gola ITI college was explicitly designed to train the Kumhars in the region. The caste identity determined the access to this training programme. At the same time, a few Mahtos also had access to this training opportunity as they were at the same level as the Kumhars in the caste hierarchy in the region. However, the individuals who came at the lower end of the caste hierarchy in the region, such as the scheduled castes and the scheduled tribes or those from the minority community, were excluded from this training programme. For example, the scheduled caste in the village, the Nayaks, and the scheduled tribes like the Karmalis belonging to Kusumpali were excluded from this training opportunity.

The scheduled caste and the scheduled tribes had also been excluded from the other formal skill development institutes in the regions, such as the Gola polytechnic college located in one of the neighbouring villages of Kusumpali. Many castes, in general, and the scheduled caste and the scheduled tribes, in particular, had been excluded from accessing the courses in the polytechnic college because of the entry barriers. For example, one of the entry barriers was the high fee structure to access the courses in the polytechnic college, ruling out the participation of the scheduled caste and the scheduled tribes in the diploma courses of the polytechnic college. The fee structure provided in the portal of Gola polytechnic college for these courses revealed that it ranged from Rs 29500 to Rs 163300 for three-year diploma courses. The relaxation of fees for the students from scheduled castes and scheduled tribes was provided, but the reduction in fees was very low. The fee relaxation also depended on the channels through which the admission happened. If the admission had happened through government counselling, the student would have gotten some relaxation and a scholarship to cover some of the fees. In contrast, if the admission had not happened through government counselling, it would have been complicated, even impossible, for the students from scheduled castes and scheduled tribes to get admission through the management quota. Hence, none of the students from the scheduled caste and the

scheduled tribes belonging to Kusumpali were found in the courses of the polytechnic college.

In contrast, by the end of the fieldwork in Kusumpali in 2022, it was found that the Kumhars had started participating in the diploma courses at the Gola polytechnic college. One Kumhar, Naba Prajapati, revealed that he wanted to send two of his sons to the polytechnic college. Both his sons had passed the 12^{th} exam in the science stream. However, the younger one did not want to join the diploma course, so he sent him to Hazaribagh to pursue his undergraduate studies. Alongside his undergraduate studies, he was also provided with the opportunities to access private coaching centres to prepare for the competitive exams for government salaried jobs. At the same time, he admitted his elder son to one of the diploma courses in Civil Engineering at the polytechnic college. Naba had managed to invest in the higher education of his sons as he belonged to one of the village's landowning castes and had some land. He had the opportunity to earn from agriculture. Along with his options of earning from agriculture, he had other options for earning from non-agricultural activities. He worked as a tractor driver as he had driving skills. He also ran a small restaurant near one of the industrial plants in the village, as he had land near the industrial plants in the emerging market area. He managed the restaurant with the help of his wife and youngest son. He also did the brick business; he prepared clay, moulded the bricks, dried and burnt them by hiring the Nayak workers on his agricultural land, and sold the bricks locally.

Being a person from one of the landholding castes, with skills in multiple non-agricultural activities, provided him with the opportunity to have multiple occupations across sectors and economic activities to maximise his earnings and cope with uncertainty. The earnings from different sources helped him invest in the higher education of his sons.

The fact that Naba Prajapati and other members from the landowning castes had the ability to access courses in the polytechnic college and other formal skill development opportunities and also invest in higher education for their children was reflected in their economic profile. Their IDFAD was in sharp contrast to that of the landless Nayaks and the scheduled tribes in the village. The major landowning castes constituted 63.38 per cent of the total IDFAD, whereas the landless Nayaks and the scheduled tribes constituted 2.66 per cent of the total IDFAD in the village. The differences in the

average IDFAD of the identity groups in the village also reflected these differences in the economic status of these communities (see Table 5.1).

Table 5.1. Average IDFAD of identity groups in Kusumpali.

Identity	*Average IDFAD*
Ansari	9.82
Kumhar	10.74
Mahto	13.39
Others[11]	5.82
Nayak (SC)	1.41
ST	3.73
Total	9.92

Source: Computed from the household survey conducted by the author.

The lower economic profile as seen in Table 5.1 could be considered as one of the factors for intergroup inequality between the landholding castes and the landless scheduled caste and the scheduled tribes in accessing formal learning processes with entry barriers due to high admission fees. One such intergroup inequality across castes can be perceived by looking at the differences in the average years of education received by individuals aged 15 and above, as depicted in Table 5.2.

[11] It encompasses all the non-SC/ST caste groups whose individual share to the total population was less than two per cent and total share of these caste groups to the total population in the village was less than five per cent.

Table 5.2. Caste-wise depiction of average years of education of individuals aged 15 and above.

Main caste groups	*Average years of education*
Ansari	6.31
Kumhar	6.17
Mahto	5.76
Nayak	4.79

Source: Household survey by the author.

To confirm whether there was an association between formal years of education and caste identity an ANOVA was done by taking the years of education as the dependent variable and six caste groups (the Ansari, Kumhar, Mahto, Nayak, Scheduled Tribes and Others) as the independent variable. The result of the ANOVA analysis is given in Table 5.3.

Table 5.3. ANOVA analysis result table.

	Sum of Squares	*df*	*Mean Square*	*F*	*Sig.*
Between Groups	203.616	5	40.723	1.738	0.123
Within Groups	19162.773	818	23.426		
Total	19366.388	823			

The p-value of the ANOVA at 0.123 being marginally significant suggests that the differences between castes could not be dismissed, even as the differences within castes needed attention. Differences in the formal years of education within castes have an economic dimension as reflected in the correlation between formal education and the economic status of households. The correlation was done between the average years of

formal education received by all the working-age members in the households with the IDFAD of household and the result of the correlation presented in Table 5.4.

Table 5.4. Correlation analysis result.

		Average years of formal education	*IDFAD*
Average years of formal education	Pearson correlation	1	0.169
	Sig. (2-tailed)		0.006
	N	259	259
IDFAD	Pearson correlation	0.169	1
	Sig. (2-tailed)	0.006	
	N	259	259

The correlation between the average years of education and IDFAD of households is significant as reflected in the 2-tailed significance value which is 0.006. However, the relatively low magnitude of the coefficient of correlation (0.169) indicates that the variation in IDFAD explains a relatively low proportion of the variation in education level. There are therefore other factors that have also contributed to the variation.

This finding is consistent with the qualitative insights as differences in formal learning within castes were noted, as not all group members had access to the formal skill development initiatives in the region. Some individuals had access, and some had been excluded from the formal training and placement opportunities. For example, not all the Kumhars had access to formal skill development initiatives in the region. For instance, Bhola Prajapati and his sister Urmi Prajapati got access to different skill

development training centres and also received monetary benefits as they had better economic conditions and her mother had access to information about formal skill development initiatives in the region. They had better economic conditions as out of five members in Bhola's family four members were working. His father was a scrap dealer and his mother had a private salaried job in the Central Bank of India in Gola. He had a job in one of the large industrial units in the village and his brother also had a private salaried job in Gola. Along with these non-agricultural earnings they had earning opportunities in agriculture as they had agricultural land. Of the total land they had some of that, they had leased out to Mahtos and shared the output in 50:50 ratio and in some they were cultivating.

In sharp contrast, when Bhola's cousin (one of the daughters of his uncle) wanted to learn some skills when she was not able to pass the 10^{th} exam, she could not get access to training opportunities because of multiple reasons, of which their economic condition was a crucial factor. Their economic condition was not as good as Bhola's household as in his uncle's family his uncle was the only earning member whose earning was sporadic as he worked as a mason locally without the intervention of labour contractors. Similarly, even within the Nayaks, not everyone was excluded from formal learning some outliers had access to formal skill development initiatives. These outlines were the ones who had better social and economic capital as can be seen from the case of Gita Nayak. She got access to the formal skill development initiatives in Ranchi even after being someone from the Nayak community and a woman because of the network developed by her mother which could not be possible for all other Nayaks.

The differences in accessing formal learning processes within the group contributed to the interpersonal inequality in formal skill learning and education. Among the interpersonal differences were many formal vocational training courses designed to impart skills to individuals from a particular age group, excluding others. For example, the NIAM educational foundation in Ranchi was facilitating the three-month residential training program for the youth in the age group of 18 to 35 years and excluded individuals below 18 and above 35. This foundation had been taking initiatives to provide training and placement to rural youth since 2013. Under the umbrella of Skilling India and specifically under the DDU-GKY scheme, the NIAM foundation had been training sewing machine operators and electricians and facilitating their placement

after the training. As age was an important criterion for accessing this training opportunity, it excluded a large set of individuals who were below 18 and above 35 years old. The lack of access to those over 35 who could have used the training contributed to the interpersonal inequality in learning skills.

Similar to the NIAM educational foundation, there were many other formal vocational skill development establishments, such as the initiative taken by Shahi Export Private Limited, E-HEREX Technologies Private Limited, etc. These institutes were also imparting technical skills and various generic skills to youth in the age group 18 to 35 years. The age-based intergroup inequality within the caste groups was also reflected in the differences in the educational attainment of individuals of different age groups, as seen in Table 5.5. From Table 5.5, one can also perceive the intergroup inequality across castes as the Nayaks who were below 45 years had fewer years of educational attainment on average than those in the same age groups and belonging to other castes.

Table 5.5. Age category-wise and caste-wise depiction of average years of education.

Main caste groups	*15 years to 29 years*	*30 years to 44 years*	*Above 45 years*
Ansari	9.34	4.56	2.04
Kumhar	9.90	4.59	2.63
Mahto	10.03	4.60	1.11
Nayak	6.74	3.23	2.00

Source: Household survey by the author.

The process of formal learning was also marked by a sharp gender inequality. Women from all caste groups faced more challenges compared to men due to social restrictions and family constraints to working outside the village. Working away from the village was necessary as all of the formal vocational training centres were located outside the village, and most were outside the district. Moreover, the placement opportunities after training provided by these formal skill development establishments primarily demanded migration outside the state. It was because most of the establishments were

providing placement opportunities outside the state, particularly in south Indian states. For example, the NIAM educational foundation, after three months of vocational training to the women in the region on sewing machine operations, offered job opportunities in different garment factories in Kerela. Many women, after being trained, did not take the placement opportunities. A few who had participated in placement opportunities and migrated outside the state could not continue their jobs for long as most of them left their jobs after marriage.

The case of the unmarried girl from the Kumhar caste, noted previously, clearly shows the challenges for women participating in formal vocational training when the training centre was located outside the village. This unmarried girl, Urmi Prajapati, wanted to learn nursing skills but did not succeed in continuing the training. There were initiatives in the region to impart training in nursing, particularly during the COVID-19 pandemic, where the government had taken the initiative throughout India through Skilling India to create more COVID-19 frontline workers for basic care support. Under this initiative, there were provisions to give residential training in nursing at their centre to women in the region. This program was designed to provide nursing training for 21 days and then additional training for three months to those who had successfully completed the initial 21 days. There were also placement opportunities after the completion of training. In addition to being a residential training program, there were also provisions for some minimum remuneration to the trainees during the training period.

Urmi got the information about the training program from her mother. The challenges for Urmi arose when she informed her family that the training centre, namely the 'Iswarchandra Vidyasagar National Youth Council', where the vocational training on nursing through this government initiative was taking place, was located outside the subdistrict. This particular skill centre was located around 30 kilometres away from the village. For taking the training, Urmi had to commute to the centre daily or stay there in the hostel. From the beginning, her father was against Urmi's participation in the training program and strictly against letting his unmarried young girl go to the hostel for training. Urmi convinced her father by saying she would not stay in the hostel but commute daily from home. She commuted to the centre for a few days but did not complete the initial 21 days of training due to many difficulties in travelling to the training centres daily as the training centre was located in an interior village in Ramgarh subdivision. She dropped out of the training program.

In sharp contrast, when her elder brother wanted to learn the skills of an electrician, her father allowed him to take residential training in Ranchi. Her brother took three months of residential training to become an electrician through the initiatives of the NIAM educational foundation under the DDU-GKY project in Ranchi. This type of discrimination within the family added another dimension to interpersonal inequality in learning skills. This interpersonal inequality between men and women was also found in formal education. The interpersonal inequality between men and women in formal education can be perceived by looking at the differences in the educational attainment of men and women in the village, as depicted in Table 5.6.

Table 5.6. Average years of education received by men and women aged 15 years and above.

Sex	*Average years of education*
Male	6.98
Female	4.93

Source: Household survey by the author.

The case of Urmi Prajapati also revealed the emergence of intergroup inequality among women. There was a clear difference in the access to economic and social capital between the women from the landowning castes and those from the landless castes. The difference in social capital was reflected in the contrasting experiences of Urmi and the Ansari woman, Saira Khatoon, mentioned in the previous chapter. Though Urmi dropped out of the training program, she got a certificate for completing the training for 195 hours on COVID frontline worker basic care support and a lumpsum monetary benefit of Rs12000 through her mother's contacts.

In contrast, Saira Khatoon completed the training for one month under the Skill India initiative but did not get the monetary benefit promised to her before she joined the training program. She was forced to take a loan of Rs 8000 from a private financial company to buy a sewing machine to start working from home and earn something, as she could not take the placement opportunity. Unlike Urmi, Saira had no social contacts

to get the monetary benefit for her training period. These differences generated interpersonal inequality between a woman with access to social and economic networks and a woman without an association with these networks. It also generated intergroup inequality between the Kumhar and Ansari women. The intergroup inequality among women from different caste groups was also visible in the fact that none of the women from the scheduled caste and the scheduled tribes had access to the formal vocational training centres in the region, other than one exception, Gita Nayak[12]. This intergroup inequality among women from different castes was also observed in formal education. This intergroup inequality in formal education can be seen in the differences in the educational attainment of women belonging to different caste groups, as presented in Table 5.7.

Table 5.7. Caste-wise depiction of Average years of education of women aged 15 years and above.

Main caste groups	*Average years of education*
Ansari	5.24
Kumhar	4.35
Mahto	4.99
Nayak	3.34

Source: Household survey by the author.

5. 3. Search for informal learning

The inequalities in accessing formal learning processes led workers to search for alternative learning processes to acquire skills and develop expertise. The search for alternative learning processes outside the formal system pushed the deprived groups

[12]. The case of Gita Nayak has been mentioned in the previous chapter. She was the only woman from the SC/ST group who completed the three-month residential training program at NIAM Foundation in Ranchi through her mother's contact. She was also the only one from the SC/ST group who migrated to Kerela for jobs through the placement facility after training for three months in sewing machine operation. The challenges of Gita in continuing her job in Kerela when her marriage was fixed have also been highlighted in the previous chapter.

and individuals to rely on informal processes to learn skills and develop expertise when they wanted to be part of the rural transformation. The caste groups deprived of formal learning, such as the Nayaks and the scheduled tribes, searched for these alternative learning processes and became dependent on workplace learning to acquire skills. They searched for access to workplaces in the village and outside. Along with workers from these deprived castes, there were also individuals from the prominent castes who did not have access to formal learning due to constraints like the cost of training. These individuals from the prominent castes also searched for opportunities for informal learning. This introduced an element of inequality in the search for informal learning as well. Members of the prominent castes used their caste identity to get access to workplaces both in the village and outside. Though the young men from the landowning castes had access to formal learning, they did not want to learn skills there. Instead, they preferred to learn skills through informal processes, because of the flexibility in the informal workplace learning and their ability to access the workplaces in the village and outside easily.

Women who were deprived of formal learning had less need to search for informal learning processes, particularly informal workplace learning, as their participation in economic activities as compared to the men was less. Out of the workers aged 14 and above 16.67 per cent were female and 83.33 per cent were male. Out of this small proportion of women in the total working population, many were primarily involved in agriculture as cultivators. In the non-agricultural sectors, they worked as wage labour in the construction sector. A few of them were also working in the local industrial plants, where they were engaged primarily in the loading and unloading of raw materials and final products. In the large industrial plants, they were also involved in cleaning the raw materials by separating them from other unwanted elements under the supervision of skilled workers. There were also a few outliers, including women with private salaried jobs other than jobs in the local industries and a few self-employed women. The need for women to search for informal learning processes for learning skills was limited as they were not involved in multiple economic activities outside the home and were not a part of worker groups that changed workplace locations as the men did.

Similarly, older individuals deprived of formal learning processes also had a limited need to search for alternative learning processes and depended on informal learning

processes to acquire skills and develop expertise. Workers from the older generations did not search for informal learning processes as they had less demand to learn new skills. The older workers were less interested in being a part of the rural transformation in the village. For example, the older individuals belonging to the landowning caste who were primarily dependent on agriculture continued to be in agriculture, as they could not change their occupations. They did not require new skills hence, there was no need to search for informal learning processes. Similarly, older individuals who were working in the non-agricultural sector, such as the masons, did not want to change their occupation unless they were forced to change due to uncertainty. The older masons, for instance, would not change their occupation as there were thresholds concerning age in learning new skills. They were also not changing their workplace locations as migration was primarily dominated by workers from the younger generation. Moreover, the older individuals had less need to search for informal learning processes as nearly a fifth of them were not working. Out of the total individuals aged above 45 years, 19.37 per cent were not working. Hence, the young male individuals were mainly looking for workplace learning to acquire new skills and develop skills in multiple economic activities based on the needs and opportunities generated by the rural transformation process.

5.4. Inequality in informal learning

Learning skills informally in the workplace requires access to the workplace. The differences in accessing workplaces led to inequality in informal learning. One such difference in access to non-agricultural workplaces in the village, particularly to the large industrial plants, was observed between the landowning and landless castes, leading to intergroup inequality. As discussed earlier, the landowning castes had easy access to the large industries as they had given land to the industries and, in exchange, asked for access to the jobs in the industries. This negotiation process of workers from the landowning castes with the industrialists provided them easy access to large industries in the village. In contrast, the resistance of industrialists to hire local workers from the village excluded the workers from the landless castes.

The inequalities were, however, not based on land alone. Intergroup inequality across castes was also noted between the landless castes. Members of some landless castes got

access to non-agricultural workplaces in the village, even as other landless castes were excluded from these workplaces. The Ansaris gained access to local industrial jobs, whereas workers from other landless castes, such as the Nayaks and the scheduled tribes, were excluded from these workplaces. Some of the Ansaris got access to the local industries even though most were landless and did not exchange any land with the industries, which was the usual basis for accessing jobs in these industrial units. These Ansari workers got access to industrial jobs through labour contractors belonging to their caste. These contractors initiated their association with the local industrial units through their role as the middlemen in solving the conflicts which started after the accidental death of two villagers in one of the large industrial units. Since then, these contractors have been solving local conflicts effectively on behalf of the industrial units and ensuring minimum costs to the industrialists in their local conflicts. Through their effective role in solving the conflict, some of these persons were given the responsibility of supplying workers to the industrial units. Through this process, they became labour contractors. When these contractors hired workers for the industries, they preferred hiring Ansari workers. The preference of workers based on caste identity while providing access to workplace learning in the local industrial units generated intergroup inequality in informal learning across caste groups. This intergroup inequality was observed as the caste groups with access to industrial jobs could learn industrial skills and transfer the skills to the other members of the group. In contrast, the excluded caste groups were deprived of learning industrial skills.

The Ansari workers who got access to jobs in the local industrial units and the contractors who had been supplying workers for the industrial jobs started investing in the emerging market area. It was easy for these workers to invest in the emerging market area as some of these labour contractors were involved in land deals by investing the funds, they received from the industrial units for solving local conflicts and supplying workers. Through these land brokers, many Ansari households bought land in the emerging market area and started investing in multiple businesses. This process again enhanced the workplace learning on enterprise and innovation skills of Ansaris when they started a diverse set of self-employed activities and businesses in the emerging market area.

Similar to the differences in accessing the non-agricultural workplaces in the village across caste groups, differences were also observed in accessing the workplaces outside

the village. The Nayaks and the scheduled tribes were further deprived of informal workplace learning by being excluded from workplaces outside the village, particularly from those located outside the district and state. Unlike the workers from the scheduled caste and the scheduled tribes, the other landless caste in the village, the Ansari workers could access the workplaces outside the village. This opportunity opened up for them through their access to local industrial units. This allowed the Ansaris to interact with workers from outside the state, working in the local industrial units. With the social capital developed through these immigrant workers, some of the Ansaris migrated outside the state and developed their initial networks. Once their networks were developed, they provided access to the other members from their caste to the workplaces outside the state. This further expanded the workplace learning of these workers.

A similar pattern was followed by the Mahtos and Kumhars. These castes also established their initial contacts outside the state by associating with the immigrants while working in the local industrial units. These networks of these castes were initiated with a network by a Kumhar contractor and others then established their networks throughout the country, such as in Karnataka, Telangana, Andra Pradesh, Tamil Nadu, Odisha, Maharashtra and other parts of the country. Some of the coordinators of these networks and their other household members started investing in the emerging market area and other workplaces at commuting distances. Through these processes, the Ansaris, Kumhars and Mahtos dominated access to the workplaces outside the village, both locally and over long distances like the ones outside the state.

The workers from the scheduled caste and the scheduled tribes had been facing challenges in accessing workplaces outside the village as most of the contracts at commuting distances were taken by the Kumhar, Mahto and Ansari contractors. These three castes were also coordinating the migration networks required to access the workplaces located outside the district and state. Whether hiring workers for workplaces at commuting distances, or mobilising workers to distant workplaces these coordinators preferred hiring workers from their caste identities. In both cases, these contractors excluded workers from the scheduled caste and the scheduled tribes.

The workers from the scheduled caste and scheduled tribes were excluded from the informal workplace learning as the purpose of the local contractors and coordinators of

the migration networks was to first transfer the learned skills to the individuals belonging to their identity groups. In this informal learning process, the skilled workers, the contractors or coordinators first provided access to workplace learning to family members, then to extended family members, and then to the members of the caste group. Later, they provided access to the workers belonging to the other castes that come at a similar level in the caste hierarchy.

By providing access to informal workplace learning to the family members and to the individuals sharing their caste identity, the contractors and coordinators formed a specialised network. For example, Amar Prajapati built a specialised network of centring by providing access to informal workplace learning to his brothers, his nephews and others from the Kumhar caste. Similarly, Aslam Ansari built a specialised network of welding by providing access to workplace learning to his brother, then to two of his cousin brothers and many other Ansaris and Mahtos. But none of these specialised networks functioning outside the state included workers from the scheduled caste and the scheduled tribes. Workers from the scheduled caste and the scheduled tribes were deprived of formal learning and again deprived of informal workplace learning by being excluded from accessing the non-agricultural workplaces, whether in the village or outside the village at commuting distances and long distances.

5.5. Consequences of inequality

The exclusion of the scheduled caste and the scheduled tribes from formal learning extended to informal learning, and hence to their capacity to earn. The consequent inequalities were reflected in the differences in their standard of living. Of the total scheduled caste and scheduled tribe houses majority had sheet roofs, while in all other castes, a majority of the houses had RCC roofs (see Table 5.8). It is also reflected in the differences in the number of rooms on average across castes (see Table 5.9). The intergroup differences in the standard of living were also observed in the proportion of households facing absolute deprivation, that is the proportion of households that did not have even one of the basic durable assets the survey had considered for its ‘Index of the Distance from Absolute Deprivation (IDFAD)’. As can be seen in Table 5.10, 13 per cent of the Scheduled Tribe households faced absolute deprivation. This figure was much lower for the Kumhars, the Mahtos and the Ansaris. The general level of poverty

in the village is evident from the fact that every caste had some percentage of those facing absolute deprivation.

There was also an important place in the village community for mobility-related assets, including personal mobility assets like motorcycles. In addition to providing mobility for self-employment and to non-agricultural workplaces, it was also seen as a sign of social status. Table 5.11 brings out quite clearly the inequality in the ownership of this asset. Over 40 per cent of the Kumhar households had a motorcycle, while this figure was less than five per cent for the scheduled caste households.

The inequality extended to the ability to innovate. The Kumhars and Ansaris were able to innovate when faced with the prospect of being excluded from the economic opportunities emerging in the village. The case studies of Sukhender Prajapati and Fagulal Ansari, discussed in the previous chapter, revealed that for innovation one was required to have access to knowledge and also have access to informal finance. In both Sukhender and Fagulal's cases, they had access to informal finance to arrange the initial capital to buy the motorcycle and invest in the raw materials and labour to develop the products. Sukhender had access to the Kumhar committee, an informal caste-based financial committee. From this committee, he got a loan for buying a second-hand motorcycle and other expenses he incurred while developing the modified motorcycle. Similarly, Fagulal financed his whole innovation process with the help of one of his relatives. Workers belonging to the scheduled caste and the scheduled tribes typically did not have such informal sources of finance.

Table 5.8. Roof types across identity groups.

Roof type	*Tile*	*RCC*	*Sheet*
Ansari	11.76	55.29	32.96
Kumhar	19.05	59.52	21.43
Mahto	17.71	65.63	16.67
SC	0.00	45.45	54.55
ST	6.67	46.67	46.67
Others	11.11	66.67	22.22

Source: Household survey by the author.

Table 5.9. Average numbers of rooms and identities.

Identity	*Average number of rooms*
Ansari	2.34
Kumhar	2.67
Mahto	2.24
SC	1.50
ST	2.00
Others	2.56

Source: Household survey by the author.

Table 5.10. Proportion of households facing absolute deprivation.

Identity	*Proportion of households*
Ansari	0.06
Kumhar	0.05
Mahto	0.07
SC	0.10
ST	0.13
Others	0.11

Source: Household survey by the author.

Table 5.11. Identity-wise percentage of households with a motorcycle to the total number of households.

Identity	*Households with motorcycle*
Ansari	35.29
Kumhar	40.47
Mahto	29.17
ST	20.00
SC	4.54
Others	100.00

Source: Household survey by the author.

The inequality in the access to capital extended to migration capital. The inability of the scheduled caste and the scheduled tribes to generate large capital was also reflected in migration. Women from the scheduled caste – Nayak – and one of the scheduled tribes – Karmali – did start financing a migration network in the Ramgarh and Ranchi region through a Nayak coordinator, Mahadev Nayak, in the hope of mobilising workers from their castes but could not mobilise a large enough number of workers, due to a limited ability to build migration capital. This was in stark contrast to the Kumhars. The Kumhars were able to run the largest network coordinated by Amar Prajapati as they were able to generate large amounts of capital within their caste through the Kumhar committee and invest that in the migration network. This network facilitated the workplace learning of the Kumhar workers and enhanced their earnings and overall standard of living.

The inequality in learning skills across caste groups further exacerbated the existing inequalities among them. For instance, with access to workplace learning, a Kumhar worker learned masonry skills and later developed expertise in masonry by accessing workplaces in big cities. His expertise in masonry increased his earnings by improving his wage rate. While working in big cities, the mason could earn more overtime. Hence, in nominal terms, the Kumhar mason earned far more than the Nayak mason working locally. The differences in earnings led to the differences in living standards in the village. The exclusion in accessing learning processes by a person from a particular caste can limit the processes of learning of that person, his family members and other members of his caste. This is similar to the process where access of a person to learning opportunities can improve the processes of learning of family members and other members of his caste.

In summary, we have seen that the inequalities in the rural transformation process led to differences in access to learning and gaining expertise over marketable skills. The differences in access to formal education and skill development initiatives in the region generated a set of inequalities. Further, the differences in workplace learning exacerbated these inequalities. Factors that led to inequalities in formal learning were seen being repeated in workplace learning. The Mahtos and Kumhars who had access and the ability to invest in formal learning also had easy access to workplace learning by having access to workplaces in the village and outside. The Ansaris who had the highest years of formal education on average as compared to other castes in the village

also managed to access the non-agricultural workplaces across locations which facilitated their workplace learning through their developed networks. In contrast, the scheduled caste (the Nayaks) and the scheduled tribes who could not invest in formal education and were excluded from the skill development initiatives in the region also had limited scope for workplace learning. This process increased the existing ingroup inequality among caste groups in the village.

Similarly, the individuals from the older generation who had relatively fewer years of formal education on average as compared to the individuals from the younger generation and excluded from the formal skill development initiatives were also facing challenges in accessing the workplace learning processes. The workplace learning of older workers was limited as they were denied from the migration process which provided access to workplaces outside the village. They also had limited ability to change their occupations and have multiple occupations further limiting their scope for workplace learning. These differences were leading to interpersonal inequalities within castes between the workers from younger and older generations. These differences were also leading to intergroup inequality between the caste groups as the older workers from the scheduled caste and scheduled tribes were more deprived than the ones belonging to the Mahto, Kumhar and Ansari castes in accessing and benefiting from multiple learning processes.

Women across caste groups had fewer years of formal education on average than men. They were also experiencing multiple challenges in accessing and participating in formal skill development initiatives for training and availing the benefits of the placement opportunities provided by the training centres in the region. Further, they were seen as being deprived of workplace learning as reflected in their limited participation in the workforce. The workplace learning of women was also limited as the migration process in the village was male-dominated. These differences in learning concerning gender differences led to interpersonal inequality between male and female individuals within homes and identity groups. There were also differences between the women belonging to different caste groups in attending formal education and getting the benefits of the formal skill development initiatives. Women from the scheduled caste and the scheduled tribes and from the minority community (the Ansaris) were seen as more deprived of formal learning than the Kumhar and Mahto women. These

differences led to the emergence of intergroup inequality between the women from different identity groups.

Chapter VI: Impacts of the COVID-19 pandemic on inequalities

In exploring the inequalities in the process of learning skills, the previous chapter concluded that inequality had multiple dimensions and that the nature of inequality in the village had been changing over time. The differences in access and experiences were changing the nature of inequalities by exacerbating the existing inequalities and/ or perpetuating new inequalities over time. Workers in the village were dealing with these inequalities or bypassing them by changing their occupations and/or having multiple occupations. They were developing these coping strategies by having multiple occupations both in agriculture and non-agriculture or by migrating away from the village to get access to non-farm jobs for an extended period. If they failed to develop these alternative strategies, they were seen bypassing the inequalities by entering illegal activities for a living. However, the real pressure of these inequalities was realised at the time of a shock. The situation caused by a shock could increase the vulnerability of workers which is "the immediate conditions that make the workers less capable of adjusting to contingencies" (Vijay, 2005, p. 2312). It could also create new opportunities for them to cope with uncertainty by reshaping the nature of rural transformation at the time of a shock.

This chapter explores what happened to the inequalities during the complete failure of the whole system due to a shock. In this regard, there is no better example to analyse this question than the situation created by the COVID-19 pandemic. This chapter explores whether the situation created by the COVID-19 pandemic increased the existing intergroup, interpersonal, and intrapersonal inequalities or perpetuated a new set of inequalities. This chapter also examines whether the situation caused by the COVID-19 pandemic increased the vulnerabilities of the marginalised groups and vulnerable individuals within the groups by posing new challenges for them. It then investigates whether the situation caused by the pandemic created new opportunities for workers by changing the dynamics of the rural transformation process. Additionally, it explores whether the experiences of individuals had changed with the change in nature and location of work during the pandemic.

6.1. The COVID-19 pandemic[13]

India witnessed one of the most severe humanitarian crises since independence due to the sudden nationwide lockdown announced on the evening of 24th March 2020 with a notice period of four hours. It put a large working-class population, predominantly migrants, in a sub-human condition as they lost their jobs, earnings, and access to food and shelter while facing challenges to return to the place from where they had migrated (Sen, 2020). In response to this historical humanitarian crisis, millions of migrant workers started walking back from various cities and urban centres to their rural places of origin (Bhagat et al., 2020; Dandekar & Ghai, 2020).

The immediate effect of the nationwide lockdown was the shutdown of all economic activities and means of transport, except essential services. Millions of migrants in urban centres lost their livelihood overnight while facing a severe health crisis due to the fear of infection and anxiety (Bhagat et al., 2020). The situation worsened when millions of them started walking back to their homes in the hope of "some warmth and empathy more than anything else" (Dandekar & Ghai, 2020, p. 28). Images of countless migrants walking or cycling back home on empty highways for hundreds of kilometres, wherein they faced discrimination and inhuman treatment from various authorities, are by now well-known due to the widespread circulation of narratives and images on national and international media (Priyadarshini & Chaudhury, 2020; Shoaib Daniyal, 2020).

An extensive set of scholarly literature during the pandemic period focused on the challenges of migrants at urban destinations, their vulnerability while marching back to the places they came from and the failure of state authorities (Bhagat et al., 2020; Dandekar & Ghai, 2020; Irudaya Rajan et al., 2020; Pal et al., 2021; Rajan & Bhagat, 2021). Various consequences, such as increased poverty, unemployment, and inequality, both at the urban destination and the rural source of their migration have also been discussed (Guha et al., 2020; Kapoor, 2020; Sengupta & Jha, 2020; Singh, 2020). Some, like Dandekar and Ghai, anticipated the crises at the places of origin of their migration due to the reverse migration for which the rural economy was not ready (Dandekar & Ghai, 2020). They noted that "the source regions cannot be relied upon to

[13] Parts of this chapter has been published in "To stay put or migrate: Dynamics of migration in a village in Jharkhand, India" in "Transitions: Journal of Transient Migration".

take the additional load of the returning sons and daughters of the region" (Dandekar & Ghai, 2020, p. 30).

This chapter summarises— the challenges of migrant workers at the destination and while returning to their place of origin during the pandemic through the qualitative insights gathered from Kusumpali, a source of short-term migrant workers. It then examines in detail the challenges of reverse migrants in the village when they manage to reach their homes. It further examines the effect of reverse migration on agriculture and workers engaging in non-agricultural activities in the village and at commuting distances. Additionally, it explores the effects of the changing nature and size of the networks revived and formed during the post-pandemic period on inequalities and vulnerabilities.

6.2. Effects of the COVID-19 pandemic

6.2.1. Challenges of long-distance migrants

The COVID-19 pandemic affected all non-agricultural workers but the workers who were working at different urban centres outside the state at a distance of more than a thousand kilometres from the village were affected the most. The pandemic affected them at multiple stages— at the destination while returning to the village and in the village when they somehow managed to reach their homes after completing their difficult journey. The experiences of many long-distance migrants revealed their challenges. One such migrant was Nilesh Mahto, a 28-year-old man. He said he had been working as a welder in a metropolitan city in south India for around eight months when the pandemic hit India. Before that, he worked in the state of Gujarat in the shipping industry. Before working as a welder at different destinations, he worked in the village as a welder in a local industrial unit for nearly six months. However, due to the low wages in the local industrial units, he moved to Chennai with one of his neighbours, who had contracts in welding-related activities in Chennai. His neighbour, Aslam Ansari, an Ansari contractor included Nilesh in his network as Nilesh had prior experience in welding-related activities. He learned some basic welding-related skills when working as a '*Vati*' (furnace) worker in the local industrial unit. He was able to learn welding skills as he was friendly with the welding mason when working as a

furnace worker on a floor above where the welding masons were working. By observing them while working and working with them in their free time, he learned some of the basic welding-related skills. The basic skills helped him to be part of a migration network that specialised in welding-related activities and taking contracts in big cities on complex welding-related work.

When the central government imposed COVID-19-related restrictions in the country, Nilesh was in Chennai. He said during the pandemic, he did not have work. He and his co-workers in the migration network were sitting idle there for one and a half months. They were receiving some small amount of cash from a local contractor in Chennai every week. With that cash, they were managing their basic grocery need and staying on the worksite in an inhuman condition with greater exposure to the infection, as around 18 to 20 workers were staying in a small tin roof room. The state of being jobless, uncertainty about the end of the lockdown, and the situation when they get better, along with the fear of infection and rumours regarding the disease, increased their desperation to return to the source regions which they consider their original homes without thinking about the risk of travelling during the pandemic.

To return to the village, they looked for all means of transportation, from air to bus, but did not get any tickets. In the first instance, they also lost a significant amount of money while trying to book tickets through brokers. Their inability to book the tickets pushed them to contact the state authorities in Ranchi and other autonomous societies in the state. But they did not succeed in arranging tickets to return to the village. However, their interaction with the formal authorities provided them with some support for their survival at the destination of their migration. These authorities told the migrant workers that they could arrange some ration for their survival but could not make any arrangements for their travel back to their villages. The migrant workers saw the help of the formal authorities as a backup for survival in a situation when the contractors withdrew their support and stopped sending the money for food. Their failure in arranging the tickets left them with one option, which was walking towards the railway station without any tickets and without any knowledge about the status of the trains and the consequences of walking towards the station during the lockdown. Nilesh said that they started their journey in small groups, but on the way, many workers from Jharkhand and Bihar joined them, and, in the station, they met with a large crowd of workers from the region.

But when they reached the station, the police caught them, and Nilesh noted, “We were fed with khichdi, pulao, etc., for a week.” It means they were quarantined for a week, but they did not have an idea why the police caught them and why they sent them to different places from the railway station. Again, he said,

> “Once we left that place, we kept on waiting as trains for Jharkhand had not yet been allowed to start. Instead, we boarded a train towards Patna and were deboarded at Nawada, a city in Bihar. From there, we took a bus to our place.”

Their struggle had not ended yet. When they reached their village, the state authorities again sent them to the polytechnic college for another round of quarantine. The situation created by the pandemic took away their earning options and pushed them back to the village. This increased their vulnerabilities due to their struggles while marching back to their village and the risk of complete failure and uncertainty about the future.

A similar set of challenges was mentioned by another long-distance migrant whom we shall call Sumit Prajapati. Sumit, after completing his intermediate (12^{th} grade), migrated to Hyderabad through a contract established by one of his relatives. In Hyderabad, he was engaged in electrician work initially as a helper in the project of a company. He said he lost his job on 22^{nd} March 2020 as an effect of the COVID-19 pandemic and was staying at the worksite till July 2020. During that time, he lived in a sheet-roof house with ten other workers from villages neighbouring his own. The company in which he was working provided some cash for these workers to purchase groceries and cook their food in that small room for all ten workers. In July 2020, when the state government was arranging transport facilities to bring the migrant workers to their home state, Sumit got to know about it from the media. Sumit said, “I got the information regarding the arrangement as I spent many hours with my smartphone during that time”.

He added, “When I reached the village, as per the recommendation, I was in home quarantine for two weeks as I came from a green zone. But the villagers, particularly those who knew that I came from Hyderabad and the Begumpet region, were keeping unwanted distance from my family members”. He said, “I was not going out of my home, but my family members were. My father was going to buy our daily food and other commodities. My mother was going to graze our goats. During that time, villagers

were maintaining a distance from my parents and suggesting they should send me to the polytechnic college for an institutional quarantine."

Sumit further noted that he did not want to take the institutional quarantine as the state authority did not suggest it as he returned from a green zone. He also cited the mismanagement and chaos at the polytechnic college, the local quarantine centre. He also did not want to stay with the Nayaks and Ansaris in the same place during the quarantine. This indicated the hostility of Mahtos and Kumhars towards the Ansaris and the scheduled caste and the scheduled tribes reflected in the social discrimination even in the local quarantine centres. Their hostility was so strong as Nilesh noted that many of the Mahtos were escaping from the local quarantine centres for the mismanagement of food and other basic facilities, and more explicitly, he mentioned that "in workplaces there in *bidesh* (referring outside the state) it is fine to stay with Ansaris but here in our local place we can't stay in one room, eat together, the villagers will do the '*kriya karm'* (funeral rituals) if we do so".

6.3. Challenges of returned migrants in the village

6.3.1. Forced change of occupations, skill loss and opportunity cost

The process of reverse migration caused by the pandemic generated multiple consequences for migrant workers which had not ended even when they reached their homes. The migrants had to face another set of challenges in the village. The migrants who returned to the village during the pandemic were forced to change their occupations as the activities in which they had skills had limited value in the local workplaces. In changing occupations, they had to learn a new set of occupation-specific practical technical skills. To learn a new set of skills, they had to sacrifice a major proportion of their earning as compared to what they were earning at different urban centres outside the state. This process also demanded an opportunity cost concerning the time that they were required to sacrifice to learn the skills demanded by the local workplaces. More than these costs in most of these cases, the learned skills of the migrant workers became redundant at the local workplaces. For example, a 21-year-old migrant worker, Raghu Mahto, with ten years of formal education, was working in Hyderabad as a JCB driver before the pandemic. After returning to the village, he searched for work as per his skills as a driver but did not find any relevant job. JCB

drivers in the local area generally got work in the summer season and were unemployed for more than six months in a year. Later, he got an opportunity from one of his uncles, who was working as a mason in the local area, to work as a helper. He helped his uncle in various activities such as preparing concrete, bricklaying, bar-bending, etc. He had no prior experience with masonry work but was compelled to change his occupation. This resulted in the loss of a significant portion of his earnings. Before the pandemic, he used to earn Rs 9000 a month when working in Hyderabad as a JCB driver, which was reduced to Rs 200 per day when working as a helper locally. The availability of construction work in the local area was also limited, which resulted in sporadic earnings. The lack of options forced him to continue to work as a helper for his uncle and learn masonry skills to get better market value for his labour. However, as someone from the Mahto identity group, he was able to mobilise his kin network, which was not possible for the workers from the scheduled caste and scheduled tribes.

Similarly, when Sumit returned to the village from Hyderabad, he looked for work related to his acquired electrician skills but did not get the work. He had developed skills in electrician activities, particularly in electrical wiring during his stay in Hyderabad. As the construction activities were completely shut down during the pandemic and revived very slowly in the post-pandemic-related restriction period, Sumit did not get work related to his electrical wiring-related skills. Then, he was forced to enter one of the large industrial units in the village to work as a helper under a welding mason. In the process, he changed his occupation from an electrician to a helper under a welding mason. To make this occupational change, he had to sacrifice a considerable proportion of his earnings. While working in Hyderabad, he was earning Rs 300 a day for 8 hours of work, and there were also chances for extra earnings from overtime, where the wage was calculated hourly. But when working in the local industrial unit, he was getting a monthly salary of Rs 5000 for 12 hours of work a day. However, being a Kumhar, he at least got access to a job in local industrial units, which would not have been possible for workers from the scheduled caste and the scheduled tribes.

Likewise, when Nilesh returned to the village, he started engaging in agricultural activities. Nilesh had this opportunity for occupational change from non-agricultural to agricultural activities as he belonged to a landholding household, which would not be possible for workers from landless households. Nilesh noted that when he returned

home, it was the harvesting time of the vegetables and corn which was grown by his family members, so he quickly found work in agriculture. He engaged in agriculture for a few months, as the harvesting of vegetables and corn, followed by the activities involved in field preparation and transplantation for paddy cultivation, demanded a greater number of agricultural workers. However, he realised that he had not contributed much after the transplantation of paddy and thought his family members, his parents, wife, and sister-in-law, were easily managing the agricultural activities in his and his brother's absence. Hence, he migrated to Ranchi to be involved in welding-related activities for a few months.

However, due to irregularities in the availability of work opportunities related to his welding skills in local workplaces, he was not getting work regularly even when he migrated to Ranchi. Again, he was receiving a relatively lower wage for the same amount of work, so he did not want to continue welding-related work locally. He returned home and was unemployed for some time. These uncertainties in employment and earnings arose as he changed his network and was working with some unknown contractors in Ranchi which reduced his bargaining power for employment and better wages. When he returned to the village from Ranchi, he tried other options for earning, like buying four buffaloes and selling the milk in a local dairy. Still, he did not find an economically viable option for a joint family. In this initiative also he found himself underemployed as other female family members and his father was easily managing the dairy activities without his involvement. In our last interaction, he noted that he wanted to migrate to Chennai again.

> "Yes. Why not. If the money is good, why won't I go? The overall mood and situation don't look very assuring. People are saying that something called Omicron is now spreading. I will reconsider in January 2022. The contractor keeps calling every once in a while, because it's in his interest for us to go there. He is not concerned about our problems. If everything looks good in January, the young men will consider returning to work again."

As we can see from the above cases, after returning to the source place, the market value of Raghu and Nilesh declined, and Sumit's skills became redundant. The market value of a skill is intrinsically tied to a time and place. Drawing from "concepts of value" (Gupta, 1960), market value in this thesis refers to those skills with both the use

and exchange value. Reverse migration changed the location of migrant workers, which limited the market value of the acquired skills, and in some cases, the skills became redundant as they lost all their market value in their villages. Due to skill loss, workers were forced to change their occupations, which necessitated acquiring new skills, which posed challenges, as seen in Raghu and Sumit's case. Raghu and Sumit suddenly found themself at the bottom of the ladder and had to lose a significant portion of their wages and spend time acquiring new skills. Nilesh changed his occupation and entered agriculture but found that he had not been adding anything to the output in agriculture after some time. He tried other activities in the agricultural sector but found himself underemployed, and later, when he started doing the non-agricultural activities in which he had skills, he faced irregularities in the availability of work opportunities matching his acquired skills locally, which forced him to consider the long-distance migration option again.

6.4. Impact of reverse migration on workers working in commuting distances

The ability to deal with uncertainties caused by the pandemic was not equal for workers belonging to different caste groups. The Mahtos and Kumhars had better scope as compared to the workers belonging to the scheduled caste and scheduled tribes. Being from Mahto and Kumhar castes Nilesh, Sumit and Raghu could change their occupations and be involved in multiple occupations to deal with the irregularities in employment and earnings due to the situation caused by the COVID-19 pandemic. In contrast, the scheduled caste and the scheduled tribes were seen facing multiple challenges in dealing with the uncertainties caused by the pandemic. The experiences of the workers from the scheduled caste and scheduled tribes revealed that they were pushed away from their workplaces located outside the village at commuting distances as the returned long-distance migrants were preferred. The members of the scheduled caste and the scheduled tribes were forced to be unemployed for extended periods or chose illegal activities for their survival. These differences led to an increase in intergroup inequalities across caste groups as the situation caused by the pandemic expanded the workplace learning of Mahtos and Kumhars through their ability to change occupations and have multiple occupations. In contrast, it limited the workplace learning of workers from the scheduled caste and the scheduled tribes when they were

unemployed for extended periods and depended on illegal activities with exposure to further uncertainties, leading to an increase in their vulnerabilities.

One such worker from the scheduled caste was Mahadev Nayak, a 19-year-old man. He was working before the pandemic as a mason in Ramgarh, a workplace at a commuting distance. During the pandemic, he lost his work due to a lack of contracts and crowding out of the workplace due to returned migrant masons in the village who sought work at places at a commuting distance. Mahadev was the only Nayak worker who had an opportunity to learn masonry skills at the construction site of the ITI college in the region. He got access to the construction site through his mother's associations with the Kumhar women and immigrant contracts from Bihar. His mother had an association with the Kumhar women as she was heading many SHGs in the region. She also developed contacts with the immigrant contractors in the construction sites of the ITI college where she worked as a construction labourer for some time. Through her association with the immigrant contractors and the recommendation of the Kumhar workers, she provided access to her son, Mahadev to learn masonry skills from masons from other upper castes.

Under challenging circumstances, he acquired masonry skills by working as a helper for more than a year. After learning the skills, he found work at a construction site in Ramgarh through the same networks, which he lost with the onset of the pandemic. He tried finding other options in the village and other workplaces outside the village at commuting distances but couldn't succeed due to the excessive supply of masons resulting from the process of reverse migration during the pandemic. Due to this, he involved himself in the illegal coal mining in the region. When asked about his involvement in illegal activities, he said,

> "Brother, who will give us work now, as the Prajapati has now taken the contract in the local places? We can only get work from Ansaris, but that is very limited, and as you know, there are so many masons in Nayak caste also, so we are getting work very rarely. One or two assignments in a week is a big thing for us. We are somehow surviving through this coal work, but it is too risky nowadays as the local authority is strict and asks for money when we get caught. So, most of the time, we lose the only asset we have, the cycle, in negotiation with the local police".

The vulnerability of workers from the scheduled caste and the scheduled tribes who primarily depended on workplaces within commuting distances outside the village increased as the reverse migrants competed with these workers in tapping the limited opportunities available locally. Further, when the returned migrant contractors and their family members took contracts in the commuting distances and hired workers based on their identity, the vulnerabilities of the workers from these marginalised groups increased. This process primarily increased the vulnerabilities of the workers from the marginalised groups as these workers had been left only with work opportunities at commuting distances. They did not have options in the village both in agriculture and non-agriculture, and could not migrate outside the district and state. Such a situation emerged when a returned migrant coordinator (Amar Prajapati) of a network functioning in Hyderabad before the pandemic took a contract along with his brother in the Gola region. When they took the contracts in workplaces at commuting distances, they preferred to hire workers from their caste group. The reasons for their preference for workers from their identity group will be discussed in the subsequent section when the nature of the network and its financial aspect will be explored.

6.5. Process of network formation

The process of migration from Kusumpali can be seen as "chain migration". Banerjee (1983) noted that chain migration is of two types, one is family migration, and another is serial migration. According to him, in family migration, different members of a family migrate from the origin to the destination at various stages. In this process the initial contacts are established by one or more family members and the other members

follow the initial movers to the destination at later stages. In serial migration he noted the process of migration "involves interactions between individuals who are not family members" (Banerjee, 1983, p. 185). These processes of chain migration can be seen from the processes through which the migration networks initiated from Kusumpali and operated at various destinations.

For example, a Kumhar contractor, Amar Prajapati was coordinating a network operating in Hyderabad before the pandemic. He worked initially in Bengaluru and later in Hyderabad as a centring mason. He acquired the skills in formwork locally and then migrated to Bengaluru in the hope of earning more. The initial migration of Amar to Bengaluru was facilitated by a network developed by one of his co-workers who had contact with a local contractor in Bengaluru. While working in different construction sites in Bengaluru, Amar became an expert in formwork in a year and developed some networks, according to Banerjee's (1983) term "destination-based contacts" which helped him to take independent contracts in Bengaluru. These contacts in Bengaluru also helped him find contracts for his specialised skills in other destinations. His association with the engineers in the construction sites in Bengaluru where he worked initially provided him with a fresh contract in Hyderabad. To take independent contracts, he took an informal loan from the *Kumhar Samiti* (Kumhar Committee[14])

[14] Kumhar Samiti is an informal committee of the Kumhar caste where every member of the committee pools a certain amount of money every month, and the required members of the committee take the sum at an interest rate. In the village, there were two such committees: the '*Bada logo ka group'* and the '*Chhota logo ka group'*. In the '*Bada logo ka group'*, which has been functioning since 2011-12, there were 22 members, each saving Rs 100 monthly on the first Wednesday of every month. The sum was saved in a joint bank account in the Central Bank of India. Similarly, the '*Chhota logo ka group'* has been functioning since 2017 and there were 18 members, and each group member saved Rs 50 on the 1st of every month. Members who fail to deposit the respective amount of the two groups in the mentioned days need to give a fine of an extra Rs 10, which is compounded with the time. Anyone from these groups can borrow from the lumpsum deposit in the Central Bank of India against an interest rate of 2 per cent per month.

functioning in the village. He mobilised certain workers from the village and neighbouring places, initially from his own family (his brothers and son), extended family (his brother's family members), and members of his caste and later the Mahtos became a part of his network. This network functioned as an identity-based and assignment-based network where the demand in the destination determined the magnitude of the workers to be mobilised from the source. However, the preference was provided first to the family members then to the extended family members and members of his caste identity group and later to the workers from other castes. This association with other identity groups did not extend to the marginalised groups such as the scheduled caste and the scheduled tribes.

Similarly, another network of workers involved in welding-related work functioned in Chennai, hosted by a person from the Ansari caste. The coordinator, Aslam Ansari, previously worked as a tailor but migrated to Odisha to learn welding skills from one of his maternal uncles. Aslam stayed with his uncle and worked at different construction sites for one year and acquired welding-related skills. During that period, Aslam expanded his contacts to get independent contracts, which later helped him to travel to other areas like Bengaluru, Maharashtra, Goa and Chennai to do welding-related work. Before the pandemic, for six months, he coordinated a network of workers involved in welding-related work in Chennai. Through his network, he initially mobilised his younger brother and two of his cousins from the extended family, as well as two of his neighbours. Later, he succeeded in developing a network of more than ten workers from the village and neighbouring places.

The functioning of identity-based networks and assignment-based networks, as demonstrated, rely significantly on the identity of the coordinator/host and the workers. This excluded a large set of workers, particularly the members of the scheduled caste and the scheduled tribes. As mentioned before, the workers of these groups were already vulnerable due to the lack of work in agriculture and local industrial units due to their being landless. Exclusion from migration networks compounded their vulnerability further. The process of reverse migration and the dominance of the returned contractors over the contracts for non-agricultural activities within commuting distances limited the access to workplaces and hence to workplace learning for the marginalised groups. This further increased the intergroup inequalities among caste groups.

6.6. Revival of networks increase inequality and vulnerability or reduce them

The broken migration networks had started reviving after the first wave of the COVID-19 pandemic, but the dynamics of the networks transformed considerably. For example, Amar established a fresh contact in Bengaluru and started mobilising workers from the village to Bengaluru. The number of workers in his network at the pandemic time was few and mainly confined to his caste.

The number of workers in the network had declined as the coordinator of the network, Amar, was unable to generate the large migration capital required for covering travel costs and advance payments to the family members of the migrant workers. He failed to settle his dues with the previous workers he had mobilised earlier before the pandemic. This made the workers unwilling to join his network. Despite these apprehensions, workers from his own family, kin and caste networks were willing to join him, while other members of other castes were apprehensive about joining him at the destination in the time of pandemic and uncertainty. The decline in the number of workers in Amar's network not only increased the intergroup inequality between castes but also expanded the interpersonal inequality among Kumhars.

The constraints on migration capital also ensured that the Mahtos who were part of Amar's networks before the pandemic were excluded from his network during the revival. A Mahto centring worker, who was previously in the network hosted by Amar, was excluded from the network at the time of revival. The loss of earnings, the market value of his skills and the irregularity of work related to his centring skills forced him to take a loan from a local moneylender at a monthly interest rate of 10 per cent to manage the initial migration capital for his movement and to mobilise the workers belonging to his caste. He was able to raise this capital through his caste networks. In this process, the Mahto centring worker became the coordinator of a network that had been functioning in Hyderabad since February 2021, where he mobilised workers from his own family, kin and caste group.

In both cases, the coordinators were mobilising the workers from the caste identity groups as the capital required for migration was raised through caste-based financial arrangements. For example, Amar was able to revive his network after taking a lump sum amount of Rs. 1.5 lakhs from the Kumhar committee at various stages during the

pandemic. When the coordinator could not generate the initial capital for reviving the network, the workers of that respective network struggled to migrate. Some of them incurred the cost of changing their occupation and learned new skills to get absorbed in a new occupation. The movement from one occupation to another also required access to learning settings, particularly access to workplace learning processes. The inability to access workplaces and revived networks pushed some workers towards illegal activities for their survival, which further increased their vulnerability.

The workers who could not contribute to the finances of the network primarily bore the brunt of the uncertainty by being excluded from the network that was being revived, thus increasing interpersonal inequality within the caste. For example, a Mahto roof-centring mason was working in Hyderabad with Amar. He had a specific skill related to roof-centring, which he acquired at different workplaces outside Jharkhand. When he returned to the village during the pandemic, he was unemployed for around eight months. The acquired centring skill had no demand and market value in the village, and the existing demand for masonry work in nearby urban centres required skills such as concrete preparation, bricklaying, and general masonry skills that were not as specialised as roof centring. These challenges in the village compelled him to follow illegal activities such as selling country liquor at home and participating in the illegal coal mining process with his family members. The increased vulnerability of such members of the caste reflected the interpersonal inequality among the Mahtos.

The separation of the Mahto workers from the Kumhar network, coordinated by Amar, contributed to an increase in the intergroup inequality between the Kumhar and Mahto castes in particular. In general, the reshaping of the migration networks without room for inter-caste groups led to intergroup inequalities after the pandemic. At the same time, the decline in the number of workers in a migration network, due to the decline in the magnitude of migration capital, increased the interpersonal inequality between individuals within the Kumhars, Ansaris and Mahtos. It was also observed in the case of the scheduled caste and the scheduled tribes.

A scheduled caste worker, Mahadev Nayak started forming a network with financial help from his mother, who arranged the capital through a group of women from the Nayak caste and Karmali tribe. This group of women had taken loans from government banks and other financial institutions in the region for small businesses and other

entrepreneurial activities. However, they gave a large portion of that loan amount to Mahadev to start his network in Ranchi and mobilise the workers primarily from Nayaks and Karmalis and then extend the facility to workers from other ST groups. Mahadev mobilised a group of workers to Ranchi who were involved in construction. However, he could not mobilise a large set of workers from his caste, unlike the Kumhar's network. Hence, a large proportion of Nayak and Karmalis were not able to get access to any migration networks. This put them in a situation where some of them started commuting to Ranchi daily without any certainty about the availability of work.

The situation caused by the pandemic changed the experiences of many workers due to a change in the value of their acquired skills and in their status. These changes were inevitable with the change in the location of their workplaces and the economic activities required to cope with uncertainty during the pandemic. For example, the roof-centring mason, mentioned above and those who were excluded from migration networks had been unemployed for a long time, and some had been forced to choose illegal means of survival. In both cases, the workers' experiences had been changed to a greater extent after the pandemic. For example, the roof-centring mason who had the status of an employed worker before the pandemic had the status of the unemployed during the pandemic and revival of the economy. Further, in the pre-pandemic period, while working outside the state and having specialised technical skills in roof centring, they had the status of masons in distant urban centres. This status changed when they returned to the village and started working locally. In local construction sites, they got the status of construction labour instead of a mason as they did not have general masonry skills, meaning skills in all masonry activities starting from foundation to roof-cantering, plastering to wall and floor designing. These differences in employment status and experiences in different workplaces before and after the pandemic indicated the emergence of intra-personal inequality.

Chapter VII: Conclusion

This thesis has explored the processes of learning involved when agriculturalists acquire non-agricultural skills. The main finding of this thesis, based on a detailed study of a village in Ramgarh district of Jharkhand for more than 20 months through a household survey and ethnographic study, is that informality is inevitable in the processes of learning involved in agriculturalists acquiring non-agricultural skills. The components of informality were present in all three main aspects of a learning process—the location, the process, and the outcome. The inevitability of informality becomes evident when we take a bird's eye view of the process of rural transformation, the resultant change in the demand for skills, and the mix of opportunities and costs of formal and informal learning.

The research in this study began by highlighting the trend and magnitude of one of the largest forms of transformation seen in rural India, the movement out of agriculture. This movement of workers out of agriculture in India was examined as a dynamic process by observing its links with other rural processes. This study found that the process of movement out of agriculture had transformed multiple facets of the study village, Kusumpali. The study mapped the dynamics of the movement out of agriculture, focusing on the inequalities in learning non-agricultural skills from 1991. Between 1991 and 2001, there was a sharp decline in the total number of workers involved in agriculture. The proportion of workers involved in agriculture declined from 91. 9 per cent to 28.3 per cent between 1991 and 2001. This movement of many workers away from agriculture increased the demand for non-farm jobs. The increase in the supply of workers led to the availability of cheap labour in the village. The village also had a large acreage of dry land which had very low agricultural productivity, especially with limited improvement in agricultural practices. Responding to the availability of cheap labour and cheap land, three large industrial units emerged in the village and its periphery, set up with capital from outside Kusumpali.

The emergence of large industrial units increased the non-agricultural economic activities in the village. This process changed the occupational structure of the village. The landowning castes, such as the Mahtos and Kumhars, got access to industrial jobs in the large industrial units as they sold their land to these industrial units, and some of

them negotiated informal arrangements for jobs in these units along with the monetary compensation for their land. The industrial units also generated a local demand for consumer goods which was met by members of the landholding castes starting many small, and sometimes larger, shops. This increased the share of the self-employed among the landholding castes. However, the landless castes, particularly the only scheduled caste in the village and the scheduled tribes, were excluded from the non-agricultural employment opportunities that emerged in the village with the setting up of these three large industrial units.

The absorption of the industrial units into the village was not a smooth process. There was a conflict between the local residents and the owners of these industrial units after the accidental death of two workers from the village in one of these large industrial units. The industrial unit where the incident had happened was closed, and the other two units began to resist hiring workers from the village. This increased the immigration of workers from other regions, particularly outside the state, to the village for industrial jobs. Ironically, it also meant local workers seeking work in industries had to look outside the village. This increased the migration of local workers out of the village for non-agricultural work. Among the new non-agricultural jobs in the village were those of the individuals who started functioning as the middlemen to resolve local conflicts on behalf of the industrial units. Once they gained the confidence of the managers of the industries, they began to supply workers to the industrial units. In this process, some Ansaris became labour contractors and started providing access to industrial jobs to workers from their caste. With access to industrial jobs, a few of the Ansaris developed their networks outside the state through their interaction with immigrant workers from other states. Some of the Ansaris also started functioning as land brokers with the money they received from the industrial units for supplying workers. The economic benefit to the Ansaris of their interaction with the industrial units allowed many of them to buy land in the emerging market area near the industrial units. They used this land to start multiple businesses and become self-employed businessmen.

Even as the industrial units increased non-agricultural jobs in the village, their resistance to local workers meant that the workers of Kusumpali had to migrate out of the village for work. The landholding castes, who had access to industrial jobs, also

developed their networks outside the state through their interaction with the immigrants from other states working in the local industrial units. In this process, a Kumhar, Amar Prajapati, whose father had retired from a government job at Central Coalfields Limited (CCL) with a lump-sum commuted pension, migrated to Bengaluru to work as a mason. Amar then developed his own network by taking contracts independently in Bengaluru and started coordinating the process of short-term migration of workers from the village to take up assignments outside Jharkhand. Through his network, he first helped his brothers and extended family members, then members of his Kumhar caste, and later, the Mahtos to migrate outside the state. His network expanded, and then he moved to Hyderabad and developed a specialized migration network for centring in the construction industry.

The higher wage rate and availability of employment opportunities for an extended period attracted many workers from the village to migrate outside the state for short-term assignments in a specialized activity. Since there was a preference for the family and caste in the building of these networks, the process of short-term migration was carried out through identity-based networks. For example, in Amar's network, a large proportion of workers were Kumhars, with a small presence of Mahtos before the COVID-19 pandemic. His network was reshaped after the COVID-19 pandemic and tilted more towards the Kumhar identity. Responding to this inequality in migration, some of the Ansaris formed their own networks outside the state. They mobilized workers initially from their caste and later included the Mahtos to cope with the increase in the demand for workers and the need for skills their networks specialized in.

A significant proportion of the money earned by short-term migrants from assignments outside the state was invested in the emerging market area for self-employment and other real-estate activities. As the emerging market area expanded it covered much of the two-kilometre distance between the village and the nearby town, Gola. This attracted other investment from retired government employees and other elite groups in the region. The larger investment by the elite converted the emerging market into an elite market by changing the very nature of investments. Many large stores, stalls, godowns and large buildings for residences emerged to meet the demand of the nearby town and other rural areas. The changing nature of the emerging market tended to drive away the original small investors running small shops. These former shopkeepers were

forced to join the short-term migrants seeking non-agricultural work outside the village. Not everyone, however, had the option of becoming short-term migrants. The migration process required initial capital and association with the networks. Those who failed to arrange the initial migration capital were excluded from the migration networks operating outside the state. A large proportion of them started working in workplaces outside the village but at a commuting distance. They went daily to these places in search of work, which they did not always find. Others crossed the district boundary and searched for non-agricultural activities within the state.

These dynamic processes of rural transformation in Kusumpali changed the demand for skills. The change in the demand for skills was primarily due to a change in occupations as well as workers taking on multiple occupations. One form of occupational change in the village was observed in the workers' movement from agriculture to non-agricultural activities. As noted earlier in this chapter, in 1991, 91.9 per cent of total workers were involved in agriculture. However, during 2019-20, when the household survey was conducted, only 16.20 per cent of total workers were involved in agriculture as their primary means of earning a living. There was also a generational aspect to the demand for new skills. The distribution of workers across age and occupation revealed that agricultural activities in the village were primarily carried out by the workers from the older generation, with an insignificant presence of workers from the younger generation in agriculture. Occupational change has been captured in this thesis by identifying the workers whose current main economic activities differed from their previous occupations. A majority of the workers –51.16 per cent – had changed occupations. In addition, the demand for skills had also been growing due to individuals having multiple occupations. More than a third of the workers – 36.05 per cent – had at least one secondary economic activity.

The changing demand for skills required learning. The larger movement out of agriculture demanded learning non-agricultural skills. And the transition was not only from agriculture to non-agriculture. There was also a need to move from one non-agricultural activity to another. The change in activity required the learning of new practical technical skills specific to a particular economic activity and workplace. At the same time, workers with multiple occupations needed to learn practical technical skills in multiple economic activities. In both these cases, of occupational change and

of having multiple occupations, there was also a demand for learning a set of generic skills. Specifically, there was a demand for learning innovation and enterprise skills as a substantial proportion of the workers were self-employed and involved in other business-related activities. In a few cases, there was a demand for innovative alternative means of livelihood due to uncertainties in the rural transformation process. The origins of these uncertainties were associated with the inequalities in the rural transformation process. The inequalities in the rural transformation process generated inequalities in learning skills by facilitating the workplace learning of some and limiting the workplace learning of others.

The workplace learning of some workers expanded with the opportunities created by rural transformation. In contrast, the workplace learning of other workers was limited due to their limited access to the benefits of rural transformation. Those who were completely excluded from the rural transformation process faced an increase in vulnerability, as they were forced to sit at home without work for extended periods. Some of them participated in illegal activities for survival. To counter the adversity of complete exclusion some workers developed innovative alternative means of livelihood. Workers like Sukhender and Fagulal did not have agricultural land, which limited their ability to find work in agriculture and local industrial units. Their landless status also limited their ability to invest in the emerging market area to become self-employed. Further, their age, marital status, and very few years of formal education, limited their scope to be part of the short-term migration process. Rather than following illegal means of earning a livelihood, both Sukhender and Fagulal innovated a type of carrier motorcycle for scrap dealing which made them self-employed.

There were formal institutions in the village and its vicinity where skills could be learnt. There were basic educational institutions such as schools and colleges, technical institutions such as engineering and polytechnic colleges, and vocational institutions such as ITIs in the region. There were also multiple formal skill development initiatives, such as ‘Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY)’, ‘Pradhan Mantri Kaushal Vikas Yojana (PMKVY)’ functioning in the region. Many autonomous bodies, such as the ‘Jharkhand State Livelihood Promotion Society (JSLPS)’, ‘Jharkhand Mati Kala Board’ were also facilitating several formal initiatives to impart employable skills to the local individuals. The formal skill development initiatives

were, however, not always accessible to those who needed to learn non-agricultural skills. There were economic costs to accessing formal institutions, especially if one considered the opportunity costs of the loss of possible employment during the time of training. The skills the formal initiatives trained workers in were also not always what the workers required. Opportunity costs as well as the skill mismatch became key constraints to workers accessing the opportunities of formal skill development initiatives. The entry barriers to formal skill development initiatives ensured a marked preference among workers for informal skill development processes. All three aspects of learning – the location, the process, and the output – were carried out informally.

7.1. Informal aspects of location

The primary location of learning was the workplace rather than educational, technical, and vocational skill development centres. Various informal processes determined the preference for workplace learning and access to workplaces. The uncertainties of the rural transformation ensured workers demanded flexibility in learning skills based on the changing demand for skills, rather than learning some fixed set of skills imparted through formal skill development establishments. There were also informal aspects to the choice of the workplace, whether in the village or outside. Such informality was present across various kinds of workplaces from agriculture to non-agricultural workplaces, including manufacturing and trade. The workplaces were also often owned by the learners themselves or their family members.

The changing nature of rural transformation and a shock like the COVID-19 pandemic determined which workplaces one needed to choose for learning skills. For example, the movement out of agriculture compounded with the emergence of large industrial units increased the preference for non-agricultural workplaces in the village. The shutdown of one large industrial unit and the resistance of industrialists to hire workers from the village increased the preference for non-agricultural workplaces outside the village. Similarly, inequalities in access to the workplace added new aspects of informality in the location aspect of the learning process. For example, negotiation through land and through labour contractors to access non-agricultural workplaces in local industrial units added other forms of informality in the location aspect of the learning process. For instance, when negotiating through a land exchange, the

workplace learning in the local industrial units was limited to the landowning castes in the village. On the other hand, when negotiating through labour contractors some landless castes accessed non-agricultural workplaces in the local industrial units.

Inequalities in access to the workplace also contributed to the informal aspect of the location of the learning process. For example, though the Ansaris were largely landless, they still had access to work in various non-agricultural activities in the village. In contrast, the scheduled caste and the scheduled tribes were forced to search for work outside the village. These inequalities in access to workplaces were also repeated in accessing workplaces outside the village. Therefore, the Kumhars, Mahtos and Ansaris were working outside the state whereas the lone scheduled caste in the village and the scheduled tribes were working at commuting distances.

Shocks like the COVID-19 pandemic affected the location of learning. Immediately after the pandemic, many workers from the landholding household entered agriculture. Similarly, the short-term migrants started working at commuting distances. Finally, there were informal aspects in the workplace itself, ensuring that workers from the village were not permanently attached to certain workplaces. The changing of workplaces was reflected in the changing destination of the short-term migration process. For instance, Amar's network operated initially in Bengaluru then he moved with fellow workers to Hyderabad again after the pandemic he moved back to Bengaluru.

The informal aspect of the workplace was also seen in the case of workplaces in the village. For example, in the village one industrial unit closed down due to its lack of ability to recognize the informal mechanisms required to operate an industrial unit in the village. In contrast, the other two industrial units recognized the need for informal mechanisms to solve local conflicts and were functioning successfully.

7.2. Informal aspects of the process

The process of learning was informal as the objective, time and role of the instructors were not structured. Rather, there was flexibility in each of these aspects of the learning process. From the process of information transformation to the process of accessing the learning location and acquiring new skills, multiple informal aspects were found in the

learning process. The information was shared by the family members and other members of the same caste. In a few instances, the information was shared with other identity groups but in such cases, the information was shared horizontally among the members at similar levels in the caste and class hierarchy. The process of learning was not instructional, rather it was multidimensional where skills were acquired through multiple processes.

The dominant practice was to acquire skills by working as a helper under skilled and experienced workers. The process varied across locations of learning and the association with the instructors. The association with the instructors meant working under a skilled or experienced worker from the family and the caste and less frequently members of other castes. The possibility of acquiring skills became a shorter-duration process when one learned from family members and members of the same caste. The possibility of acquiring skills became a relatively longer process when one learned from skilled workers from other identity groups. This was primarily because the process through which the knowledge was communicated varied. In the case of learning from the family, the learner had the benefit of the handholding of the skilled workers, whereas when learning from members of other castes this support was not available. Instead, workers had to rely on learning through observation and imitation. The scope to work alongside the skilled workers varied based on the way the contractors or the more experienced workers introduced the learner to the workplace. For example, if a mason introduced a helper as a construction labour the possibility of acquiring skills by working alongside the skilled mason and observing his problem-solving ability was reduced. In contrast, when the helper was introduced as a *half-mistry* at the construction site the possibility of learning by working with the mason and problem solving was enhanced. The informality in the learning process generated differences in the possibility of acquiring skills by sharing space with skilled and expert workers. For example, by sharing space with a welder Nilesh Mahto learned welding skills though he was working as a furnace worker.

7.3. Informal aspect of outcomes

Informality in learning outcomes was reflected in the process of accreditation after acquiring skills in an informal location. Workers who acquired the skills through

informal processes did not receive any formal certification or accreditation. Their accreditation was informal, which they received in the form of recommendations from labour contractors to get work in other places or to change their occupations. The coworkers supported the recommendations of the labour contractor. Arrangements were based on trust and the words of the experienced and skilled workers had more value than the possession of a formal certificate. This was due to the prevalence of oral tradition still in some parts of this region.

7.4. Differences and inequalities in learning

The barriers in formal learning influenced different groups and individuals in varying ways. The scheduled caste and the scheduled tribes in the village had limited access to the formal skill development establishment in the region due to entry barriers like the high fee structure. Specifically, the Nayaks had relatively fewer years of educational attainment on average as compared to any other castes in the village. The lower level of education and limited scope for formal training limited their scope for accessing the workplaces such as the industrial jobs in the village and also to access the migration networks operating outside the state. In both these cases formal education and training experiences were crucial at the entry level. Further exclusion from workplace learning limited their workforce participation. In contrast, the Kumhars who had access to, and the ability to invest in, formal education had easy access to industrial jobs and also to the short-term migration process which facilitated their workplace learning and increased their workforce participation. These differences between caste groups generated intergroup inequality. The women similarly had less educational attainment on average than men and faced multiple challenges in accessing formal skill development establishments. These factors along with the male-dominated short-term migration process limited their scope for workplace learning and led to the limited participation of women in the workforce. These differences in learning which extended to workforce participation between men and women generated interpersonal inequality within the groups.

The existing intergroup inequalities among different caste groups in the village were expanded with differences in access to the workplaces in the village and outside. Intergroup inequalities between the landholding and landless groups, particularly

between the landholding castes and landless scheduled caste and scheduled tribes were expanded as the workers from the landholding castes got easy access to workplace learning by accessing the jobs in the local industrial units and in the emerging market area. The establishment of networks outside the village by the landholding castes through their access to the industrial jobs in the local industrial units again provided them better opportunities for workplace learning by accessing different workplaces located outside the village at different distant places. The exclusion of the scheduled caste and the scheduled tribes from these migration networks due to identity-based mobilization further restricted their opportunities for workplace learning. This led to the widening of the existing intergroup inequality between the landholding castes and the landless scheduled caste and the scheduled tribes.

A new intergroup inequality emerged between the Ansaris and the scheduled caste and the scheduled tribes within the landless category. Like the landholding castes, the Ansaris had gained access to workplace learning by accessing industrial jobs through labour contractors from their caste. By accessing industrial jobs, they also developed their networks outside the village and expanded their opportunities for workplace learning. In contrast, the scheduled caste and the scheduled tribes neither had access to industrial jobs nor had the option of migration which restricted their opportunities for workplace learning. This led to the emergence of intergroup inequalities between the Ansaris and the scheduled caste and the scheduled tribes within the landless category.

The intergroup inequalities were also noted across gender with there being a significant difference between men and women in formal educational attainment, access to formal training and placement, and further in accessing the workplace learning processes. A similar set of interpersonal inequalities were noted between the individuals belonging to the older generation and ones from the younger generation.

The inequalities in learning skills were reshaped during the COVID-19 pandemic. The COVID-19 pandemic led to a complete shutdown of all non-essential activities in the non-agricultural sector, with several consequences. One of the main consequences was the process of reverse migration with workers returning to the village. The process of reverse migration changed the occupational structure in the village. The returned migrant members from the landholding households saw agriculture as an immediate response to the shutdown of non-agricultural activities. In contrast, the returned

migrants from the landless households were unemployed for an extended period. This led to an increase in interpersonal inequality between the migrant members belonging to the landholding and landless households.

The nature of inequalities was further reshaped during the revival of the economy. During this stage, the migration networks took on different shapes with a greater emphasis on the identity group of the person heading the network. The identity of the person heading the network became crucial as he was the one who generated the initial capital for the migration of workers from the same identity group through informal financial arrangements in the identity group. The changing demand for skills and workplaces after the pandemic also forced workers to change their occupations. There were several cases of workers who had different occupations before and after the pandemic. Those who had access to the networks could change their occupations and survive the uncertainties caused by the pandemic. Others had been unemployed for extended periods, and some were forced to involve themselves in illegal means of earning a livelihood with varied consequences for inequalities and vulnerabilities.

The largest migration network which originated in the village and operated in Hyderabad collapsed during the pandemic and was restructured in the post-pandemic period. The Mahtos who were previously a part of this network were excluded from the reshaped network which was coordinated by a Kumhar coordinator. The Mahtos formed their own network to mobilize workers from their caste. The exclusion of Mahtos from the Kumhar network led to the emergence of intergroup inequality within the landowning castes. Kumhars also developed their networks at commuting distances outside the village and mobilized workers from their caste. Similarly, the Ansaris also took contracts outside the village at commuting distances to provide employment opportunities to the returned migrants from their caste. These caste-based mobilizations and the crowding out of returned migrants in the workplaces at commuting distances increased the competition among the workers who were primarily dependent on these workplaces. It largely affected workers from the scheduled caste and the scheduled tribes who neither had access to non-agricultural opportunities in the village nor to the migration networks to migrate to long-distance places. The dominance of the returned migrant contractors crowed out the non-migrant workers in the workplaces at the

commuting distances. This added a new dimension to the existing intergroup inequalities among the caste groups in the village.

The pandemic had not only changed the nature of the networks but also decreased their size, as the networks were mobilizing relatively fewer workers after the pandemic than they were before the pandemic. This was largely because the ability of the coordinators of these migration networks to generate migration capital had reduced substantially. Thus, in many instances, it was seen that the workers who were part of a network previously were excluded from it when it was revived after the pandemic. This contributed to interpersonal inequalities within the groups. Some of the excluded workers also experienced intrapersonal inequality, as their employment status had changed after the pandemic. Before the pandemic, they had a job and after the pandemic, they were unemployed for an extended period. In some cases, it was noted that some of them were even getting jobs but not getting similar status at the local workplaces that they had when working at various urban centres outside the state. For example, the specialized workers in one masonry activity were given the status of construction labour rather than a mason in local workplaces. This also led to the emergence of intrapersonal inequality.

The findings of this thesis have multiple implications—one of the practical implications related to the methods of bridging skill gaps. The experience of the village in Jharkhand and the process of short-term migration makes it clear that informal learning has an important role to play in bridging skill gaps. The skill gaps took multiple forms. One was the demand and supply gap, which emerged due to the mismatch between the types of skills in demand and those in supply in the formal system. For example, most of the formal institutions that were facilitating the government skill development initiatives in the study area were imparting skills in two activities: sewing machine operation for women and electrician skills for men, without recognizing the nature and limited size of the local demand. At the same time, rural transformation had generated a demand for skills in diverse forms of non-agricultural activities, from masonry to driving. This reduced the participation of individuals in formal skill development institutions. Recognizing the local demand for skills and designing skill development initiatives can bridge this demand-supply gap.

Another type of mismatch this study outlined was the locational gap, which emerged due to the locational mismatch between the places where the training was provided and the places where the placement opportunities were available. For example, in Ranchi, an educational foundation was imparting three months training to potential sewing machine operators and providing placement in Kerala. However, even after learning the skills, most women were not taking the placement opportunities, as migration outside the state was impossible for many of them. Recognizing the demanded skills of the local industries and imparting skills based on that demand can bridge this gap.

This study has also brought out the need for continuous change in the types of skills which needed to be imparted. Many skill development institutions and initiatives had been imparting a fixed set of skills. They had not been redesigning the courses based on the changing demand for skills. This is a major impediment at a time when rural transformation has seen millions of workers across the country moving away from agriculture. Further, there is a need to emphasize the practical aspect of skills while advertising the skills that could be learnt through formal skill development institutions. There is also a need to emphasize short training programs, as individuals during the rural transformation process were less interested in participating in extended training programs due to multiple opportunity costs. The skill development institutions functioning in the region were designing several short-term training programs, especially one to three-month training programs. Still, in many cases, the formal skill development initiatives had been reducing the time assigned for the practical aspects of the training program. This widened the skill mismatch and pushed the learner to depend even more on the informal settings to acquire practical technical skills. Taken as a whole the results of this study point to the difficulty in providing opportunities to learn all the demanded skills through formal initiatives on skill development alone. There is a need to acknowledge informal learning as a means of bridging the skill gaps.

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