

A STUDY OF INFORMAL EMPLOYMENT IN GOA

A Thesis submitted in partial fulfillment for the Degree of

DOCTOR OF PHILOSOPHY

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By

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Dedicated

To

My Dear Parents

Dr. Kanta Manguesh Manerkar

&

Mrs. Nalini Kanta Manerkar

Whose Presence, Prayers and Perseverance
are fondly missed by me.

I exist because of them and my thesis is a testament to
their faith and belief in me.

DECLARATION

I, Gouri Kanta Manerkar, hereby declare that this thesis represents work which has been carried out by me and that it has not been submitted, either in part or full, to any other University or Institution for the award of any research degree.

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CERTIFICATE

I hereby certify that the work was carried out under my supervision and may be placed for evaluation.

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CHAPTER I

INTRODUCTION

1.1 Introduction

The informal sector, often overlooked in official statistics and regulatory frameworks, serves as a crucial engine for many economies worldwide. Despite its hidden nature, it has a profound impact as it provides livelihoods and fosters economic growth. This sector includes many workers who lack labour protections and formal job structures, characterized by both flexibility and uncertainty. In urban areas, the informal economy fills the gaps left by formal employment opportunities, making it an essential part of the economy.

The informal sector and informal employment are important not only at the global level but also at the national level. At the global, especially in developing countries, the informal sector constitutes a substantial part of the economy. It promotes economic growth by addressing market gaps for goods and services, catering to diverse consumer needs, and promoting entrepreneurship. This sector plays a crucial role in economic inclusion by absorbing surplus labour, and providing income for vulnerable groups.

In India, the informal sector is even more prominent, accounting for a large share of employment. It serves as a crucial source of livelihood for millions, offering employment opportunities where the formal sector fails. This inclusivity helps to reduce poverty and fosters economic stability, as informal workers can support themselves and their families. Despite operating outside formal regulatory frameworks, the informal economy is an essential part of the economy. Its flexibility and adaptability are particularly valuable during economic uncertainties or crisis, providing a buffer against economic shocks and helping communities to recover from economic uncertainties.

1.2 Origin and emergence of the informal sector and informal employment

Within the global economic network, the informal sector stands as a strong yet shadowy domain where economic activities flourish beyond formal boundaries. From bustling market stalls to home-based enterprises, informal employment provides essential livelihoods for millions of workers worldwide. Exploring its origins and development reveals a dynamic interplay of historical, cultural, and economic forces shaping informal economies over time.

In 1954 essay, Nobel Prize-winning economist W. Arthur Lewis in this essay predicted that economic progress in developing nations would create modern job opportunities, absorbing excess labour from the informal economy—a concept known as the "Lewis Turning Point"(Lewis, 1954). He believed that with the right economic policies and resources, traditional economies could evolve into dynamic, modern ones, facilitating the transition of informal jobs into the formal sector. This view was bolstered by the successful post-World War II reconstruction of Europe and Japan.

By the mid-1960s, optimism about economic development in developing countries gave way to concerns over widespread unemployment and persistent traditional economic structures. In response, the International Labour Organization (ILO) initiated missions to various countries to investigate employment issues and develop tailored strategies, recognizing the need to consider each nation's unique socio-economic context. This reflected a deeper understanding of the complexities of fostering sustainable economic growth and inclusive development globally.

In 1971, British anthropologist Keith Hart introduced the term "informal sector" while studying rural migrants in Accra, Ghana. Hart observed that many migrants engaged in informal activities that generated independent incomes despite external limitations, highlighting the sector's resilience and self-reliance. This insight showcased the informal sector's ability to thrive under challenging conditions.

The first ILO World Employment Mission to Kenya in 1972 furthered the understanding of economic structures. The mission revealed that the traditional sector had not only survived but also expanded to include profitable and efficient businesses along with the marginal activities. This growth demonstrated the sector's diversity and flexibility, challenging previous assumptions about its limitations.

While Hart and the ILO team praised the informal sector's efficiency and creativity, the concept received mixed reactions. Critics viewed the informal economy as peripheral and disconnected from formal economic growth, believing it would fade with industrial advancement. Conversely, supporters argued that developing countries might experience a different industrialization path, integrating and expanding informal activities into the broader economy.

By the 1980s, discussions included shifts in developed capitalist societies, where manufacturing decentralized into smaller, flexible entities. This shift led to the rise of informal employment, transforming traditional roles into irregular, low-benefit positions or subcontracted tasks to small, unregulated businesses. Economic crises in Latin America and Asia pushed people into informal work for survival, while globalization in the 1990s further spurred informal labour growth across various sectors and countries.

Recently, there has been a growing interest in the informal economy worldwide. This heightened focus is due to the sector not only expanding in size but also evolving in new ways and emerging in unexpected locations. Notably, informal employment saw a significant increase during the recent economic crisis, as highlighted by Horn & Salvendy (2009). This sector represents a substantial, yet often overlooked, portion of the global economy and workforce. Currently, informal employment accounts for 61% of all jobs globally, 67% of total employment in emerging economies, and 90% in developing nations (ILO, 2018b). There is also an increasing recognition of the interconnection between the informal and formal economies, acknowledging the significant

contribution of the informal sector to the overall economic landscape. It is becoming clear that supporting the working poor in the informal economy is essential for poverty alleviation and reducing inequality. Additionally, empowering women in the informal economy is also crucial for addressing gender disparities and promoting gender equality. Despite its evolution over time, the informal economy remains vital for most governments due to its capacity to absorb a significant portion of the labour force outside formal employment. This underlines the importance of integrating informal employment into broader economic and social policies to enhance overall economic stability and inclusive growth.

1.3 Informal Employment: Current Scenario

Workers in informal employment constitute a vulnerable segment of the population in India, often bearing the brunt of economic crises. They face numerous challenges, including job insecurity, income instability, and limited access to social protections such as healthcare, insurance, and pensions. The COVID-19 pandemic has worsened these issues, causing widespread job losses, reduced incomes, and increased uncertainty. Many informal workers, particularly those in sectors like construction, street vending, and domestic work, continue to struggle with precarious employment conditions. In India, informal employment is a cornerstone of the economy, engaging approximately 90% of the workforce and contributing about half of the country's GDP (Srija & Shirke, 2014). Although the informal sector plays a vital but often an underappreciated role in supporting millions of livelihoods, it remains undervalued despite its substantial economic contribution. Despite, India being one of the fastest-growing major economy globally, it still relies heavily on this sector to serve as a crucial safety net in the face of limited formal job opportunities (ILO, 2024a). However, this rapid economic growth has yet to transform employment conditions significantly. While agricultural employment which has gradually declined from 60% in 2000 to approximately 42% by 2019, the construction and services sectors has expanded during the same period, capturing a larger share of total employment (Kundu & Das, 2019; Palmal, 2020). Nonetheless, formal sector employment growth has been modest during the same

period, with around 90% of workers classified as informal within the formal sector. Self-employment remains a prominent feature of the Indian labour market, constituting approximately half of total employment, a proportion that ranks among the highest globally.

India's economic growth has positively impacted the labour market, yet it has to enhance employment conditions significantly. While agricultural employment has gradually decreased, the construction and services sectors have expanded over the years by increasing their share of total employment from 23% in 2000 to 32% by 2019 (The Indian Express, 28/2/2024). However, the growth in regular and formal sector workers has increased modestly from 14% in 2000 to 18% in 2019, but approximately 90% of the workers who work in the formal sector workers are classified as informal. Besides, India's labour market also exhibited significant segmentation by gender, geography, occupation, social groups, and regional factors. Although earnings disparities have narrowed down over the years, there still exist substantial socio-economic gaps in employment. Notably, India has one of the world's lowest female labour force participation rates, with women's participation being around 25% of working age population in 2022, despite a slight increase during the pandemic period driven by subsistence employment (ILO, 2024b).

Despite robust economic growth, productive employment has also remained the same. There has been a decline in job intensity which can be attributed to the services-oriented growth model rather than the manufacturing-driven growth as seen in developed nations. On account of this structural shift and technological advancements, it has favoured high-skilled roles, reduced low-skilled jobs, and has widened labour inequalities across regions, social groups, genders, and occupations, thus exacerbating societal disparities. Presently, India is experiencing a pivotal phase in its demographic transition, with the working-age population increasing from 59% in 2011 to 63% in 2021, a trend projected to remain stable for the next 15 years (ILO, 2024a). Although the working-age population has grown, the proportion of youth within the total

population is decreasing. However, they continue to constitute a significant demographic segment. Labour force participation rates (LFPR) among youth have declined from 54% in 2000 to 42% in 2022, with the steepest declines observed in the age group of 15–19 years as compared to those in the age group of 20–24 years and 25–29 years. The worker-population ratio for youths in India have also decreased from 2000 to 2019, in line with the global trends on account of the COVID-19 pandemic (ILO, 2022). It is also estimated that young people are three times more likely to be unemployed as compared to adults (ILO, 2020). In India too, youth tend to face a higher unemployment rate compared to adults. The youth unemployment rate has escalated over recent decades from 5.6% in 2000 to 6.2% in 2012 and reaching around 15.1% in 2020 (BusinessWorld, 29/03/2024). In India, unemployment is particularly acute among the educated youth, surpassing global averages by 2018 (ILO, 2022). Despite high educational attainment, inadequate employment opportunities contribute to declining labour force participation and delayed workforce entry.

The global COVID-19 pandemic has exacerbated existing labour market challenges for young people worldwide (ILO, 2022). In India, however, the trend of a declining worker population ratio among youth saw a reversal between 2019 and 2022, with notable increases, particularly among women in rural areas. The economic pressures of the pandemic led many young individuals to join the workforce to support their families (ILO, 2020). Despite this shift, India continues to face a significant gender disparity in the labour market, with female labour force participation (LFPR) remaining consistently low. Over the past two decades, this gender gap has shown a little change. In 2022, the LFPR among young men was 61.2%, nearly three times higher than that of young women, which was around 21.7%, a disparity that persists across both rural and urban areas (ILO, 2024a).

In India, self-employment is the predominant form of work, comprising of 55.8% of total employment in 2022, followed by casual and regular employment at 22.7% and 21.5% respectively (ILO, 2024a). The proportion of self-employment has remained relatively stable at around 52% from 2000 to 2019, whereas regular employment saw a

notable increase, rising nearly by 10 percentage points from 14.2% to 23.8%. However, by 2022, this trend reversed, with self-employment increasing by 3.8 percentage points to 55.8% and regular employment declining by 2.3 percentage points to 21.5%. The share of casual employment has consistently decreased from 33.3% in 2000 to 22.7% in 2022 (ILO, 2024). Women in India, particularly in rural areas, are significantly more engaged in self-employment as compared to men. Around 62% women are engaged in self-employed as compared to men, who comprised 53.1%. Conversely, men held a higher share in regular employment, which was around 23.6%, compared to women, which was around 16.6%. Participation rates in casual work were almost similar between men (23.2%) and women (21.4%). However, on account of the rural-urban disparity was definite, with 67.7% of rural women involved in self-employment as compared to 39.3% in urban areas. In contrast, urban men had a higher participation in regular employment which stood around 46.2%, as compared to 14.7% in rural areas. The pandemic years saw a significant reversal in the trend of self-employment declining among women and bouncing back sharply to 62% in 2022 after dropping from 55.4% in 2000 to 53.2% in 2019. Conversely, men's participation in self-employment remained stable at around 51% during this period but slightly increased slightly to 53.1% by 2022 (ILO, 2024a). In rural areas, women predominantly engaged in unpaid family work within the self-employment category considered the most vulnerable form of employment. The proportion of women in unpaid family work declined from 2000 to 2019 but showed a notable increase from 2019 to 2022, indicating a rise in vulnerable self-employment. Own-account workers within self-employment increased from 30.7% in 2000 to 36.6% in 2019 but slightly decreased to 35.8% by 2022. Conversely, the proportion of unpaid family workers decreased from 20.5% in 2000 to 13.2% by 2019, then increased significantly to 17.4% between 2019 and 2022. Informal or unorganized employment remains prevalent in the Indian economy, encompassing a significant portion of all workers, including those in the formal sector. Despite an increase in formal sector employment, there has also been a rise in the proportion of informal workers within the formal sector, a phenomenon termed the "informatization" of formal employment. This trend intensified from 2019 to 2022, contributing to a decline in the

proportion of regular formal workers or higher-quality employment opportunities (ILO, 2024a).

During the pandemic, the Indian labour market experienced significant fluctuations, with declines in key indicators such as the Labour Force Participation Rate (LFPR), worker population ratio, and a rise in the unemployment rate during the peak quarters of 2020 and 2021. Widespread lockdowns, disruptions in economic activities, and a subsequent reduction in employment opportunities were the main reasons for these declines. According to CMIE data for 2021, the number of self-employed workers consistently increased throughout the pandemic and continued to rise into 2022, particularly among the vulnerable unpaid family work in rural areas and among women. This increase in self-employment was attributed to the lack of formal job opportunities, leading individuals to turn to self-employment as a means of survival.

In contrast, regular formal, informal, and casual employment growth was slower during the pandemic and declined afterwards. The slower growth and subsequent decline in these employment categories were due to the economic slowdown, business closures, and a reduction in hiring by companies facing financial uncertainties. This trend highlighted the ongoing shift from formal to informal employment, with a significant majority of the workforce operating under conditions of uncertainty. The pandemic accelerated this shift, as many formal sector workers lost their jobs and were forced into the informal sector, where job security and benefits are minimal.

1.4 Characteristics of Informal Employment

The informal economy mainly operates outside established legal and regulatory frameworks, often lacking official documentation and adherence to rules governing formal enterprises. This sector includes businesses without licenses, engaging in tax evasion, and offering employment without formal contracts. Its minimal entry barriers allow individuals to start economic activities without extensive education, capital, or bureaucratic hurdles, attracting those with limited resources or skills. Small-scale operations mainly dominate the informal economy typically involving a few workers,

often family members, and requiring minimal investment. Despite their modest size, these enterprises are crucial for employment and income generation, particularly in developing countries.

One of the main characteristics of the informal economy is its flexibility with workers often in temporary, part-time jobs operate without job security or formal contracts. Cash transactions are mostly prevalent, complicating tax monitoring and regulatory compliance. A significant issue of this sector is the lack of social protection, leaving workers without essential benefits like health insurance and retirement support, exposing them to financial risks. Informal networks play a vital role, providing support and resources through personal and community connections.

Workers who work in the informal economy face vulnerability due to economic shocks, limited savings, and lack of access to social security. The diversity of the sector extends from street vending, subsistence farming, domestic work, and unregistered small businesses, highlighting its adaptability and resourcefulness. Despite the absence of formal regulation, the informal economy is a primary employment source in developing nations, offering essential job opportunities and serving as a safety net during economic crises. However, measuring its size is challenging due to its unregistered and unregulated nature.

1.5 Drivers of informality

Despite common beliefs that the informal economy serves as a short-term haven for the jobless during economic growth and surplus labour absorption, data from various countries indicates that informality is present even in nations with economic advancement. Several studies have indicated that the prevalence of informal employment can be due to the interplay of marginalisation and reinforcement factors (Williams & Williams, 2014). Many developing countries have exhibited this mixed scenario. Proponents of the marginalisation thesis believe that the marginalised population mostly engaged in informal work out of necessity and as a means of survival. According to this theory, the first and the most important factor for workers to engage

in informal work is the issue of poverty and the scarcity of livelihood opportunities. There is a widespread belief that labour market discrimination against vulnerable groups, such as youth, women, minorities, and those possessing lower educational qualifications, often exacerbates poverty within these communities. As a result, these marginalized populations turn to the informal economy for survival purposes (Williams, 2011; 2016).

However, as against the marginalisation thesis, the proponents of the reinforcement thesis argue that another critical factor driving informality is the industrial sector's limited capacity to absorb labour into higher-quality jobs. This results in a predominance of low-quality employment opportunities within the service sector (Sehnbruch et al., 2024). During the industrialization of developing countries, the anticipated decrease in rural-urban migration and industrial growth did not consistently translate into a proportional increase in industrial jobs. Instead, most new employment opportunities grew in the service sector. Although the service sector included a broad spectrum of working conditions and wages, ranging from informal petty trading to sophisticated financial services, evidences suggested that its overall contribution to value-added was low in many regions. This implied that many jobs created in these sectors tend to be of poor quality and low productivity, which was often associated with the informal economy. Many individuals opted for informal work due to the increased flexibility it offers. Women, in particular, found informal work arrangements beneficial for balancing work and family responsibilities. Household duties often made it challenging for them to maintain a work-life balance, and informal employment provided the much-needed flexibility to manage both aspects effectively. Besides this, the rise of informal employment can also be attributed to the flexible work arrangements adopted by companies striving to remain competitive in the global market. Increasingly, businesses opted for subcontracting, temporary, and casual work arrangements. These adjustments allowed companies to swiftly adapt to market fluctuations and reduce expenses linked to permanent employment, thus fostering the

growth of informal labour practices. On account of this, informal workers faced vulnerability due to their limited job security and lack of social protections.

Economic crises, like the COVID-19 pandemic, further intensified their hardships, leaving them increasingly susceptible to job losses. The COVID-19 pandemic profoundly impacted these informal workers by exposing them to numerous challenges. Lockdowns and restrictions in movements led to widespread job losses in retail, hospitality, and construction sectors, where informal workers are mostly employed. Without job security or formal employment contracts, these workers faced immediate income loss, pushing many into poverty. Health risks also increased as informal workers had to continue working in unsafe conditions to survive, often without access to healthcare or adequate protective measures. Without government support, these informal workers, especially the women and the marginalised group, struggled to meet their basic needs. These workers were badly affected because they experienced disproportionate job losses and increased unpaid care responsibilities. The COVID-19 crisis underscored existing gender and social inequalities, highlighting the precarious nature of informal work.

1.6 Review of literature

In recent years, extensive literature has aimed to reveal the drivers behind the rise of informal employment globally. Initially, informal employment was viewed as a temporary phenomenon primarily affecting marginalised groups such as women, youth, those with limited education, and individuals in single-person households (Williams & Horodnic, 2017c). Thus, the marginalisation thesis hypothesized that it is the socio-demographic factors that played an important role in driving individuals towards informal work. Numerous studies supported this hypothesis (Angel-Urdinola & Tanabe, 2012; Başbay et al., 2018). Recent studies have challenged this traditional view that it is not only socio-demographic factors that influence individuals to participation in informal employment but also work-related factors, such as flexible job environments and specific industries like construction, hospitality, restaurants, and household

services, influence individuals to engage in informal work(Williams & Horodnic, 2017a). However, the impact of these factors varies across different countries and numerous past studies have explored these variations.

Despite rapid economic growth in recent decades, many low and middle-income countries still grapple with persistent informality in their labour markets Abraham (2017) and Kanbur (2017) explored the factors contributing to the rise of informality, especially within formal enterprises, The findings of the study revealed that informality in employment is more prevalent among educated individuals in formal enterprises, challenging the traditional belief that informal workers are primarily concentrated among the uneducated or older age group. De Paula & Scheinkman, (2007) also examined the determinants of informality using data from over 48,000 small firms in Brazil. Their findings revealed that informality can spread among firms through vertical relationships, where the informality of suppliers and purchasers influences a firm's status. Similarly, Öznur & Tansel (2014) conducted a study on informality in the Turkish labour market using data from 2006 to 2009. Their findings indicated that the social security definition is more effective in capturing the relationship between individual characteristics and informality, especially during economic crises.

Informality in employment leads to significant vulnerabilities for workers due to the lack of legal protection, income instability, and the absence of social security. A study conducted by (Lo Bue et al., 2022) revealed that women are more likely than men to be in vulnerable employment due to family responsibilities. The study also highlighted the fact that from 1990 to 2010, due to improvements in women's education and declining fertility rates, female employment in vulnerable occupations was reduced. In India, the COVID-19 pandemic exacerbated existing vulnerabilities among these workers, highlighting long-term structural issues in the labour market, such as low participation rates and lack of access to decent work (Jha & Mishra, 2022; Gupta & Guha 2018) These workers suffered massive damage to their capacity to earn as they tend to work in the hardest sectors, which are vulnerable in the labour market. In 2017-

18, prior to the COVID-19 pandemic, around 85 per cent of the workers worked in the informal sector, and a further 5 per cent were employed in the formal sector but under informal conditions that lacked social protection or other employment-related benefits. (ILO, 2020). The livelihood and security of these workers were severely impacted prior to the pandemic as these workers were reeling under shocks from demonetization and a poorly rolled-out GST (Nath et al., 2023). Informal workers are least organised and are highly vulnerable to exploitation and human rights violations. The COVID-19 pandemic, which the ILO described as the worst global crisis since World War II, aggravated this situation further. The experience of informal workers in Goa during the lockdown on account of the COVID-19 pandemic was similar to that of the informal workers in India. The coronavirus pandemic wreaked havoc on the economy of Goa. The halt in economic activities and the ban on interstate restriction resulted in the contraction of the Goan economy by 14.3%, and the State experienced a sharp drop in GST collection by 74% (Times of India, 27/10/2020). During this period, the State was experiencing a recession along with inflation due to supply chain disruptions. Due to a fall in production, these informal workers suffered a major setback. The lockdown reduced many jobs among these informal workers who had to struggle to make ends meet. The loss of income of these informal workers resulted in accrued indebtedness, which made them and their families caught up into relative poverty (Sumalatha et al., 2021). Many women and men who worked in the informal economy needed an alternative source of income to feed themselves and their families, as they had no income replacement or savings. For the informal workers, Not working and staying home meant losing their jobs and their livelihoods (ILO, 2020).

1.7 Research Gap

There is ample literature discussing the emergence of informal employment through various theoretical frameworks, but when it comes to examining the rise of informal employment from a micro-level perspective, there remains a notable gap in research. Besides, the state of Goa has received little attention in this regard, with no comprehensive studies focusing on informal employment.

The existing body of literature provides restricted insights into how household and workplace characteristics influence the probability of individuals participating in informal employment. To evaluate the validity of the marginalisation and reinforcement thesis and in understanding the factors driving informal employment in Goa, this study made use of binary logistic regression. Notably, it introduces social security as a novel dependent variable, which has not been explored in similar research before. Although there is a considerable amount of literature addressing the increase in informality within the service industry, the majority of these studies primarily concentrate on the impact of demographic and work-related factors. What distinguishes this study is its uniqueness in examining the consequences of firm size and recruitment practices on the phenomenon of growing informality in employment, an aspect that has not been extensively explored in previous research.

1.8 Statement of the Research Problem

Goa, despite being one of the more developed small states in India, has seen a significant presence of informal employment in recent years. Therefore, this study explores the characteristics of informal employment in the state, the factors contributing for the rise of informality and vulnerability of employment in the service industry in Goa.

1.9 Research questions

1. What are the characteristics of informal workers and employment in Goa?
2. What are the main factors which influence individuals to undertake informal employment in Goa?
3. What are the determinants for the rise of the informality of employment in Goa?
4. What factors contribute to the vulnerability of employment in the labour market in Goa?

1.10 Objectives of the study

The broad objective of the study is to examine the factors contributing to the rise of informal employment in the labour market in Goa, with a particular focus on the service industry. This broad objective led to the following specific objectives.

1. To identify the micro determinants and understand their effect on informal employment in Goa.
2. To examine the elements of informality of employment in the service industry in Goa
3. To identify the factors of employment vulnerability in the labour market in Goa with the help of the vulnerability index.

1.11 Research Hypothesis

The following research hypotheses have been formulated to study the relationship outlined in the research objectives:

Objective-1

H_{01a}: Marginalised populations are more likely to engage themselves in informal employment. (**Marginalisation hypothesis**)

H_{01b}: Workplace characteristics are more likely to influence individuals to undertake informal employment. (**Reinforcement hypothesis**).

Objective 2

H_{12a}: Demographic and workplace characteristics are more likely to contribute to an increase in informality in the labour market.

Objective 3

H_{13a}: Social insecurity in informal employment is due to demographic and work-related factors.

H13b: Job insecurity in informal employment is due to demographic and work-related factors.

H13c: Vulnerability in informal employment is due to demographic and work-related factors.

1.12 Methodology

This study seeks to shed light on the factors contributing to the rise of informal employment in Goa, thereby exacerbating employment vulnerability within the labour market. Given Goa's status as a prominent tourist destination in India, a significant portion of its workforce is engaged in informal employment (Ministry of Labour & Employment Labour Bureau, 2014). Despite the substantial presence of informal workers, there is no data available as to how many workers are engaged in informal work. Since the population is unknown, the following formula is used as given by (Charan & Biswas, 2013) to determine the sample size

$$\text{Sample Size} = \frac{Z_{1-\alpha}^2 p (1-p)}{d^2}$$

where,

- $Z_{1-\alpha}^2$ – is the standard normal variate (at 5% type 1 error)($P < 0.05$) it is 1.96 and at 1% type 1 error ($P < 0.01$) it is 2.58).
- Expected proportion in population based on previous studies or pilot studies.
- d = Absolute error or precision – that has to be decided by the researcher

Based on the above formula, the study selected 420 sample respondents from an infinite population of informal workers working either in the formal or informal sectors in the North and South districts of Goa. Given the increasing influence of the service sector on Goa's economy, consisting of trade establishments, hospitality, financial services, etc. (The Navhind Times, 29/03/2023), this sector was chosen for investigation.

To collect primary data, the study utilized an interview schedule administered both physically and through Google Forms. This was distributed among 420 informal

employees across six talukas within the two districts, selected based on their composite service index (Nayak & Sudarsan, 2008). 70 individuals from each Talukawere interviewed, covering Sanguem, Mormugao, and Salcete in South Goa and Sattari, Pednem, and Tiswadi in North Goa. The interview schedule comprised three sections: the first section focused on socio-demographic and household characteristics, the second section addressed workplace attributes of informally employed workers and the third interview schedule focused on the impact of Covid 19 pandemic on the informal workers in Goa. The survey was conducted from October 2020 to March 2022.

Table 1.1 represents the taluka-wise data of respondents interviewed for the study who are engaged in informal work in the formal or informal sectors across the two districts of Goa, namely North Goa and South Goa.

Out of the 420 evenly distributed responses, with 70 responses from each of the six talukas, only 400 responses were considered due to incomplete responses from 20 individuals.

Table1.1: Sample selection for the study

District Sector of Employment	North Goa			South Goa		
	Tiswadi	Pednem	Sattari	Salcete	Mormugao	Sanguem
Informal in the Formal Sector	31	37	34	36	30	34
Informal in the informal sector	37	30	35	30	34	32
Total	68	67	69	66	64	66

Source: Primary data

Table 1.2: Data collection instruments

Part	Dimension	Description	Measurement Scale
A	Profile of the Respondent	Gender, marital status, residential status, breadwinner in the family,	Close-ended
		Age, years of education, length of unemployment	Open-ended
B	Household characteristic	Years of education	Open-ended
		Sector of employment	Close-ended
C	Workplace characteristics	The registration status of the firm, the status of the company, industry, nature of employment, the number of employees in the organization, eligibility for social security, the location of the workplace, job status, recruitment, the type of contract, termination notice, casual leave, and medical leave. The firm's eligibility for a state-sponsored pension.	Close-ended

Source: Author's selection

Table 1.2 outlines the components of data collection instruments employed in the study. The research utilized both closed-ended and open-ended questionnaires to gather information from the respondents.

Table 1.3 represents the variables and tools used for the study. This study has defined informal employment according to the definition given by the National Commission for Enterprises in the Unorganised Sector (NCEUS). According to the NCEUS, a worker who is eligible for social security is treated as a formal worker, and those who are not eligible for social security are treated as informal employees.

The first objective identifies the main reasons for individuals to engage in informal employment. The study makes use of two binary logistic regression models. The dependent variable 'Absence of Social Security' is assigned a value of one if the respondent is not eligible for social security and zero otherwise. Workers who are entitled to social security are treated as formal workers, and those not entitled to social

security are treated as informal workers. Since the dependent variable is dichotomous, the binary logit model was used.

In order to examine the elements of the informality of employment in the service industry in Goa, an informality matrix is constructed based on the definition of informal employment given by ILO and NCEUS. To identify the factors contributing to the growth in informality due to supply-related factors, the study employs a binary logistic regression model as the dependent variable for the model is binary in nature as per the various definitions used in the study.

In order to assess the factors contributing to employment vulnerability, the study used multiple regression analysis followed by the Shapley-Owen Decomposition methodology. Shapley Decomposition is a methodology derived from cooperative game theory that allocates the total value generated by a coalition of players in a way that fairly reflects each player's contribution. It is done by calculating the marginal contribution of each player to every possible coalition and then averaging these marginal contributions.

The Shapley value for each player is a measure of their contribution to the total value, ensuring that the distribution is both fair and efficient, satisfying properties such as symmetry, additivity, and efficiency. This method is used in various fields to attribute value or importance among contributors accurately. In this study, Shapley-Owen Decomposition is used to identify what are the individual factors that contribute to the overall vulnerability of the worker who is employed informally in the service industry in Goa.

Table 1.3: Variables and tools used in the study

Objectives	Variables Used	Relationships	Tools
1) To identify the micro determinants and their effect on informal employment in Goa.	Gender, age, marital status, number of years of education, residential status, breadwinner in the family, length of unemployment, years of education of the household head, sector of employment of the household head, job characteristics, and type of industry	To identify whether socio-demographic and workplace characteristics influence individuals to undertake informal employment	Binary logistic regression
2) To examine the elements of the Informality of employment in the service industry in Goa	Gender, age, number of years of education, residential status, type of industry, firm size, recruitment, registration status, eligibility for social security, eligibility for paid leave, type of contract, and eligibility for state-sponsored pension.	To examine whether socio-demographic and work-related factors are the reasons for the rise of Informality in the service industry in Goa	Binary logistic regression
3. To identify the factors leading to employment vulnerability in the labour market of Goa.	Gender, age, number of years of education, residential status, type of company, recruitment, number of workers, place of work, type of contract, job status, recruitment, advance dismissal notice, social security benefits, causal leave, medical leave,	To identify the factors contributing to social insecurity, job insecurity, and vulnerability with the help of the vulnerability index.	Regression analysis followed by Shapley factor decomposition methodology

Source: Author's selection

1.13 Significance of the study

Informal employment accounts for nearly half of all jobs, driving the growth of informality, particularly in emerging economies. It is linked to job insecurity, poor working conditions, and low wages, which impact economic development and social stability. The present study is significant on the following grounds. Understanding the factors that contribute to the rise of the informality of employment is essential for addressing socio-economic barriers, leading to economic advancement and poverty reduction. It would be also be helpful for designing target measures so to improve job quality and promote formalization. Additionally, informal work often involves inadequate pay, lack of social protections, and poor working conditions, perpetuating poverty and inequality. Policymakers can tackle these issues by pinpointing key drivers like limited education and regulatory constraints, thereby promoting economic inclusiveness and social welfare. Informal employment also further contributes to gender inequality, with women being predominantly represented in this sector. Examining these determinants of informal work can reveal gender-specific challenges, informing gender-sensitive policies that empower women economically. Vulnerabilities in the labour market, such as job instability and insufficient income, disproportionately affect marginalized groups. Recognizing the factors contributing to the rise of vulnerability can help to develop comprehensive social policies, including unemployment benefits and healthcare, which are essential for shielding individuals from economic hardships and also promoting a more inclusive labour market, ensuring all individuals have access to stable employment opportunities, By designing appropriate policies, it can help in promoting economic stability and growth, thereby contributing positively to economic progress.

1.14 Limitations of the study

The research focuses exclusively on the definition provided by the National Commission for Enterprises in the unorganised sector to define informal employment. Therefore, individuals who lack social security, regardless of whether they work in the formal or informal sector, are considered for the study. The primary data collected for

the study was restricted to only six Talukas in Goa and three Talukas in each of the two districts of Goa. Due to the absence of comprehensive data on the number of informally employed workers in both sectors, it was difficult to determine the sample size.

Moreover, this study was conducted during the COVID-19 pandemic. Hence, there was an unanticipated delay in the collection of data on account of the lockdown measures imposed by the Government from time to time. Some of the responses were collected through Google Forms. Hence, the respondents' answers were accepted as true by the researcher since it was not possible to verify the respondents' claims, particularly those related to age and the number of years of education. Besides, the analysis for the study was done based on the data revealed by the respondents, and the researcher could not validate it with any other alternative methods.

The study has relied only on the socio-demographic and work-related characteristics influencing individuals to engage in informal employment. However, the other dimensions that are likely to influence an individual's enrolment in informal employment, such as household characteristics, dependency ratio, and educational qualification of the household head, are not considered for the study.

1.15 Chapter scheme

The study is organized into seven chapters. A brief outline of the chapters is described below.

Chapter I is the introductory chapter that provides an overview of the current scenario of informal employment in India. It introduces the research problem by outlining the research questions and objectives, presents the research hypotheses, and describes the methodology used for the study. This chapter also discusses the significance of the study and its limitations.

Chapter II provides a comprehensive review of the various dimensions of informal employment, focusing on the determinants of informal employment, the relationship

between informality and vulnerability in the labour market, and the impact of the COVID-19 pandemic on informal employment. Additionally, this chapter identifies the existing research gaps in the current literature.

Chapter III deals with the secondary data whereby a comparison is made with regard to individuals engaged in informal employment in India and Goa and Goa's share of informal workers with respect to India using data of CMIE and also looked into the impact of Covid 19 pandemic on these workers

Chapter IV, titled "Impact of micro determinants of informal employment in Goa," examines the main factors influencing individuals to engage in informal employment. This chapter begins with a brief description of the respondents' socio-economic profile and household and workplace characteristics. This analysis uses binary logistic regression to predict the probability of an individual opting for informal employment in Goa. Furthermore, the chapter evaluates the applicability of two theoretical frameworks within the context of the state.

Chapter V titled "Determinant of informality of employment in the service industry in Goa," investigates the factors contributing to the informality of employment in the service industry by developing an informality matrix. Following the methodology outlined by Unni and Ravi (2013), the matrix is constructed using definitions provided by the ILO and NCEUS, supplemented with three additional variables. Subsequently, a binomial logit model is employed to identify the key drivers behind the increasing informality of employment in this sector.

Chapter VI titled 'Factors determining Employment Vulnerability in the Labour Market in Goa,' explores the factors contributing to employment vulnerability in Goa by constructing a Vulnerability Index that combines social insecurity and job insecurity. Multiple regression analysis is used to identify the main factors contributing to vulnerability, followed by the Shapley Factor Decomposition methodology to identify

the individual factors contributing to overall vulnerability of employment in the service industry in Goa,

Chapter VII provides a summary of the study, along with its major findings and conclusions. The implications of the study are analysed, and the scope for future research is explored.

CHAPTER II

INFORMAL EMPLOYMENT: CONCEPT, SIGNIFICANCE AND REVIEW OF LITERATURE

2.1 Introduction

The informal sector refers to the segment of the economy that operates without government taxation or regulation. This sector typically includes small enterprises employing fewer than ten workers, excluding farming and self-employment activities. Often called the "shadow economy," the informal sector is sometimes considered illegal or unethical. Since its identification in the 1970s, the role of the informal economy in economic development has sparked intense debate. The proponents of the informal sector visualize it as a reservoir of entrepreneurial talent that provides a crucial safety net during financial crises. They see it as a dynamic part of the economy that offers opportunities for innovation and employment, particularly in developing countries where formal job opportunities may be scarce. The informal sector can also absorb a significant portion of the workforce, especially during times of economic downturn, thereby alleviating poverty and providing essential goods and services.

However, critics view the informal sector more negatively. They contend that engagement in informal activities is often a deliberate strategy to evade regulation and taxation. This evasion undermines government revenues and can lead to unfair competition with formal businesses that comply with legal standards. Furthermore, informal work is frequently associated with poor working conditions, lack of social protections, and low wages, contributing to a cycle of poverty for those involved in it.

Despite the initial predictions that the informal economy would shrink as countries developed, it has continued to expand. Today, the informal sector accounts for 61% of the global workforce and represents a substantial portion of the world economy, according to the International Labour Organization (ILO, 2018b). Its persistent existence underlines its complex role in modern economies, where it acts as a necessary

lifeline for millions and a challenge for policymakers seeking to regulate and formalize economic activity.

This chapter provides a comprehensive overview of the informal sector, focusing on informal employment. It explores the key concepts and definitions relevant to the study, offering a historical perspective on the informal economy and the evolving understanding of informal sector employment. This chapter reviews various informal employment theories to understand the phenomenon's theoretical basis. A comprehensive review of empirical studies is carried out to identify the research gap in the study area and form the research problem and objectives.

2.2 Concepts and working definitions of informal employment

In the present study, an attempt has been made to understand the main factors contributing to the rise of informal employment in Goa. The definitions of the central concept used in the study are given below:

- 1) **Informal worker:** According to ILO, a worker is treated as an informal worker if he works in an unregistered organization and has no access to social security schemes like ESI, PF, etc. The National Commission for Enterprises in the Unorganised Sector (NCEUS) has defined an informal worker as not eligible for social security schemes like ESI, PF, etc., irrespective of whether he works in the formal or informal sector(Hussmanns, 2004).
- 2) **Unorganised/ Informal sector:** The definition of the unorganized sector has been derived from the Report on Conditions of Work and Promotion of Livelihoods in the Unorganized Sector National Commission for Enterprises in the Unorganized Sector (NCEUS). “The unorganized sector consists of all unincorporated private enterprises owned by individuals or households engaged in the sale or production of goods and services operated on a proprietary or partnership basis and with less than ten total workers.” (Hussmanns, 2004).

- 3) **Informal Employment in the formal sector:** Informal employment in the formal sector refers to jobs where workers are employed in registered organizations but do not qualify for social security benefits such as Employee State Insurance (ESI) or Provident Fund (PF) (Husmanns, 2004).
- 4) **Informal Employment in the informal sector:** Informal employment in the informal sector refers to jobs where workers are employed in unregistered organizations and are not eligible for social security benefits such as Employee State Insurance (ESI) or Provident Fund (PF) (Husmanns, 2004).
- 5) **Self-employed:** Individuals who operate their own farm or non-farm businesses or engage independently in a profession or trade either alone or with a few partners are considered self-employed. A defining characteristic of self-employment is autonomy in deciding how, where, and when to conduct operations, along with economic independence regarding market engagement, scale of operations, and financial management (Husmanns, 2004).

The self-employed persons may again be categorized into:

- a) **Own-account workers:** They work independently or with one or few partners, managing their businesses during the reference period without employing any significant labour force. Occasionally, they may receive assistance from unpaid helpers in their business activities (Husmanns, 2004).
- b) **Regular Salary/ Wage Worker:** A "regular salary or worker" is an employee with a stable job having a permanent or long-term commitment, predictable work schedules (full-time or part-time), and entitlement to social security benefits like paid leave, health insurance, and retirement plans. These workers enjoy greater job security than casual or temporary workers, with legal protections against unjust termination. Their employment is

governed by labour laws that dictate working conditions, wages, and rights within the workplace(Husmanns, 2004).

- c) **Casual Labour:** Casual labour refers to a worker whose employment status is temporary or irregular. They are appointed on a short-term basis to fulfill immediate or short-term requirements from the employer or the employee(Husmanns, 2004).

- 6) **Youth:** Youth is defined as individuals who fall within the age group of 15 to 29 years old as reflected in the National Youth Policy, 2014, GOI.

- 7) **Migrant:** A person who moves away from their place of usual residence, whether within a country or across an international border, temporarily or permanently, and for a variety of reasons (IOM definition).

- 8) **Breadwinner:** The breadwinner is a family member who earns the money the family needs (Cambridge Dictionary).

- 9) **Unemployment:** Unemployment is defined as the situation where people who are willing to work at the prevailing wage rates but cannot find suitable employment (<https://www.investopedia.com/>).

2.3 Evolution of the concept of informal Employment at the Global level

The terms 'unorganized' and 'informal' are often used interchangeably in the labour market, with the 'informal sector' gaining global prominence after an ILO mission in Kenya in 1972. Initially, the definition of the informal sector focused on the 'enterprise approach', with labour statisticians from the ILO establishing a global standard at the 15th ICLS based on enterprise characteristics. The 15th International Conference of Labour Statisticians (ICLS), held in 1993, officially adopted a standard definition of the informal sector using this approach. It emphasizes the characteristics of enterprises rather than the individuals working within them. According to this definition, the

informal sector encompasses unincorporated enterprises owned by households, including unregistered and/or small-scale operations that produce goods or services for sale or barter. These enterprises typically lack formal registration, have limited access to formal financial and legal systems, and operate on a small scale with little separation between labour and capital. The aim was to establish a consistent framework for identifying and measuring the informal sector globally, facilitating improved policy formulation and statistical comparisons across countries.

The 15th ICLS definition of informal employment excluded individuals working outside the formal sector, regardless of the precarious nature of their jobs. This underscored the necessity for a broader definition of informal employment in the future. Under this definition, self-employed street vendors, taxi drivers, home-based workers, and similar occupations were considered enterprises. Yet, individuals engaged in very small-scale or casual activities might not report themselves as self-employed or employed in official statistical surveys, even if their activities fell within the scope of an enterprise definition. Similar challenges were also evident for individuals whose work blurred the lines between self-employment and wage employment, such as outworkers, subcontractors, or freelancers, disproportionately affecting women.

Recognizing these limitations, the International Expert Group on Informal Sector Statistics (Delhi Group) agreed with data users that defining and measuring informal sector employment should encompass a comprehensive definition and measurement of informal employment (Mridusmita et al., 2020).

However, criticism emerged regarding the exclusion of informal workers not affiliated with formal enterprises. Therefore, a framework to define informal employment was proposed in the ILO report titled 'Decent Work and the Informal Economy,' presented for deliberation during the 90th Session of the International Labour Conference in June 2002 (Husmanns, 2004; ILO, 2002). This conceptual framework received a positive reception from the International Labour Conference, the Delhi Group, and other

forums. Several countries, including Brazil, Georgia, India, Mexico, and the Republic of Moldova, successfully implemented and tested this framework. In December 2003, the 17th ICLS endorsed guidelines based on this framework as a global statistical standard, complementing the 15th ICLS Resolution on informal sector employment statistics (ILO, 2003).

Therefore, the 17th ICLS 2003 adopted a job-centered approach, establishing 'informal employment' as an international benchmark. According to this approach, informal workers could also be found within the organized sector, depending on their specific employment arrangements. Additionally, households employing paid domestic workers were categorized separately from the informal sector. Consequently, the total informal workforce in an economy comprises individuals from both formal and informal enterprises and the household sector. Under the 17th ICLS, informal employment was defined as encompassing all informal jobs performed within formal sector enterprises, informal sector enterprises, or households during a specified reference period. Therefore, this expanded scope aimed to harmonize these two concepts, acknowledging their complementary roles rather than treating them as mutually exclusive due to their distinct observation units.

Hence, this framework categorizes total employment into two dimensions: production unit type and job type. Production unit type focuses on legal organization and enterprise characteristics, while job type considers employment status and other job-related features.

Production units are divided into three primary groups: formal sector enterprises, informal sector enterprises, and households. Formal sector enterprises include corporations (including quasi-corporate entities), non-profit institutions, unincorporated enterprises owned by government units, and private unincorporated enterprises producing goods or services for sale or barter not classified as part of the informal sector. As defined previously, informal sector enterprises encompass

unincorporated enterprises typically lacking formal registration and operating on a small scale.

Households, as production units, encompass those producing goods solely for their final use (such as subsistence farming or self-built dwellings) and households employing paid domestic workers (such as maids, laundresses, gardeners, watchmen, drivers, etc.). However, households producing unpaid domestic or personal services (like housework or caregiving for family members) for their own final consumption are excluded from consideration. These activities fall outside the production boundary defined by the System of National Accounts (SNA) and are not categorized as employment.

2.4 Evolution of the concept of informal employment at the National level

Informal employment in India has undergone significant changes due to various socio-economic and policy-driven factors. Initially considered a temporary phenomenon, it was overlooked in economic planning. Early economic policies, particularly the Second Five-Year Plan (1955-60), focused on industrialization and the creation of jobs in the formal sector, assuming that informal employment would diminish over time. Despite these efforts, informal employment has persisted, highlighting the complexity of India's economic transition.

One significant factor giving rise to informal employment in India was the demand for labour, which was influenced by India's developmental strategy and government policies. The import substitution strategy adopted during the Second Five-Year Plan focused on heavy industries to reduce import reliance. Despite these efforts, informal employment has persisted. This approach failed to absorb surplus agricultural labour, resulting in rural-to-urban migration and a growing informal sector characterized by low wages and poor job security. Additionally, the reservation policy for non-durable consumer goods in the small-scale sector limited the expansion of small businesses, further contributing to informal employment. This policy unintentionally discouraged

small enterprises from growing and led large corporations to establish smaller subsidiaries to exploit the protections offered to small-scale industries.

The supply of labour also played a crucial role in the prevalence of informal employment. Several factors contribute to this, including the lack of education and skills among a significant portion of the workforce, which limits access to formal job opportunities. Informal social networks and limited job market information further forced workers into informal arrangements. Seasonal and part-time labour, particularly in the agriculture sector, often resulted in informal employment due to the temporary nature of the work. Informal entrepreneurship, driven by economic necessity, also contributed to the persistence of informality, as these entrepreneurs operated outside the formal economy and faced challenges in accessing credit and support from the Government.

Regulatory barriers and economic necessity are additional supply-side factors influencing the growth of informal employment in India. Complex labour regulations and high administrative costs that were associated with formal employment discouraged workers from seeking formal jobs, pushing them towards informal work arrangements. For many individuals, informal employment was a necessity rather than a choice, which was driven due to the lack of formal job opportunities and immediate financial requirements. All these factors collectively contributed to the rise of informal employment in India.

2.5 Review of theories of informal employment

a)Dualist School of School

The dualist school sees the informal economy as comprised of marginal activities distinct from and unrelated to the formal sector and providing income for the poor and a safety net in times of crisis (Hart 1973;ILO, 1972; Sethuraman, 1976; Tokman, 1978) According to this school, the persistence of informal activities is primarily due to the fact that not enough modern job opportunities have been created to absorb surplus

labour due to a slow rate of economic growth and/or a faster rate of population growth. Therefore, the dualists viewed the informal sector as a residual sector that absorbs the surplus labour not employed in the formal sector. This perspective was evident in the division within the informal manufacturing sector in India, where a 'traditional' segment, primarily employing family-based household enterprises, coexists with a 'modern' segment of capitalist enterprises employing wage labour. Despite economic growth, this dualism has not only persisted but has been further reinforced, suggesting a lack of transformation of the 'traditional' segment into the 'modern' one (Kesar& Bhattacharya, 2020) This dualistic view is supported by contrasting theories in the literature, where the informal sector was either seen as a lower segment of a dual labour market with no direct link to the formal economy or as a result of hostile government intervention driving firms towards informality due to excessive regulation (Cherfi-Feroukhi, 2020). The persistence of financial dualism in West African economies, where informal financial markets thrive due to the formal sector's inability to extend credit to SMEs and individuals, further illustrates the dualist perspective's relevance. The expansion of the Indian informal sector, driven by the growth of the formal/modern sectors, also reflects the dualism within the informal sector itself, suggesting that the growth process may exacerbate rather than resolve dualism (Chakrabarti, 2018).

b) The structuralist school of thought

The structuralist school sees the informal economy as subordinated economic units (informal enterprises) and workers that serve to reduce the input and labour costs of large capitalist firms and, thereby, increase their competitiveness (Moser, 1978 ;Castells and Portes,1989). In the structuralist model, in marked contrast to the dualist model, different modes and forms of production are seen not only to co-exist but also to be inextricably connected and interdependent (Moser, 1978; Castells and Portes, 1989). According to this school, the nature of capitalist development (rather than a lack of growth) accounts for the persistence and growth of informal production relationships. The structuralist school gained prominence through the works (Moser, 1978; Castells and Portes,1989). Within this framework, informal activities are depicted as

subordinate economic entities (micro firms) and workers aimed at diminishing input and labour expenses, thereby enhancing the competitive edge of major capitalist enterprises (Chen, 2004). For the structuralists, an inseparable connection exists between the informal sector and the formal economy. This perspective aligns closely with the concept of "exploitative integration" as put forth in the "subordination approach" by Tokman (1978). Both frameworks believe that the informal sector is deeply intertwined with the formal economy. In contrast to the dualists, they posit that the endurance and expansion of the informal sector are contingent upon "the nature of capitalist development" rather than a lack of growth (Chen, 2004).

The structuralist school views the informal economy as comprised of subordinate economic units (informal enterprises) and workers that help reduce the input and labour costs of large capitalist firms, thus enhancing their competitiveness (Moser 1978; Castells and Portes 1989). Unlike the dualist model, in the structuralist perspective, various modes and forms of production are not only seen to coexist but also to be closely interconnected and interdependent (Moser, 1978; Castells and Portes, 1989). According to this school, the persistence and growth of informal production relationships are attributed to the nature of capitalist development rather than a lack of growth. The structuralist school became prominent through the works of (Moser, 1978; Castells and Portes, 1989). In this framework, informal activities are portrayed as subordinate economic entities (micro firms) and workers that aim to lower input and labour costs, thereby boosting the competitiveness of major capitalist enterprises (Chen et al., 2004). For structuralists, there exists a fundamental link between the informal sector and the formal economy. Their viewpoint aligns closely with the concept of "exploitative integration" proposed in the "subordination approach" by Tokman (1978), both emphasizing the deep intertwining of the informal sector with the formal economy. In contrast to dualists, they argue that the survival and expansion of the informal sector depend on "the nature of capitalist development" rather than a lack of growth (Chen, 2004).

c) The legalist school of thought

The legalist school viewed the informal economy as consisting of bold entrepreneurs who opt for informal operations to evade the unnecessary and burdensome costs, time, and effort of formal registration. These entrepreneurs require legal rights to formalize their assets (De Soto, 1989). This school, popularized by Hernando de Soto in the 1980s and 1990s, contends that the informal sector comprises 'bold' micro-entrepreneurs who choose informality to avoid registration costs (De Soto, 1989). According to de Soto et al., micro-entrepreneurs will persist in informal production if government procedures remain cumbersome and costly. From this perspective, restrictive government regulations hinder private enterprises. According to this viewpoint, informal ventures are characterized as "'daring' micro-entrepreneurs who choose informality to bypass the costs, time, and effort linked with formal registration" (Chen, 2012). In contrast to the dualist and structuralist schools, legalists argue that informal activities do not arise from poverty or function as a structural necessity of advanced capitalism. Instead, the decision for informality is made by rational individuals grappling with a legal system that impedes commercial operations (Bonnet & Venkatesh, 2016).

These activities evade the legal system as the formal institutional framework, taxation, and administrative expenses of the formal economy hinder the advancement of small and medium-sized enterprises. According to de Soto's viewpoint, informal entrepreneurs embody efficient market dynamics that surface in response to excessive regulation and government suppression. Biles, (2008) and Chen, (2012) asserts that, in terms of policy implications, the legalist school recommends streamlining "bureaucratic processes to incentivize informal enterprises to formalize and expand legal property rights for the assets owned by informal operators to unlock their productive capacity and transform their assets into tangible capital."

d) The Voluntarist school of thought

Chen, (2012) introduces a fourth perspective on the informal sector known as the Voluntarist school, building upon Maloney's (2004) study of informality in Latin American nations. The Voluntarist school viewed the informal economy as comprising

entrepreneurs who operate informally to avoid taxation, commercial regulations, electricity and rental fees, and other operating costs (Maloney, 2004). Contrary to legalists, Voluntarists do not view informality as mainly arising from burdensome registration procedures or praise informal activities as courageous endeavours. They argue that informal businesses unfairly compete with formal enterprises by gaining cost advantages through tax evasion and non-compliance with regulations. Maloney, (2004) suggested that urban informal microenterprises should be considered part of a voluntary small business sector similar to those in developed countries. These businesses can choose their level of engagement with formal institutions due to the lenient enforcement of rules. Chen, (2012) emphasized that, according to Voluntarists, integrating informal enterprises into the formal regulatory framework is crucial for expanding the tax base and addressing unfair competition against formal businesses.

2.6 Marginalisation thesis and participation in the informal economy

The “marginalisation thesis” asserts that individuals operating in the informal economy are predominantly the marginalised group who are excluded from the formal sector and who take up informal jobs as a last resort due to few other opportunities being open to them (Barbour and Llanes, 2013; Copisarow, 2004; Williams & Horodnic, 2016). Therefore, the marginalisation thesis supports the exclusion principle. This applies when considering both where such employment takes place in the informal economy and the type of employment the individuals are engaged in such endeavours. From this perspective, it is believed that individuals residing in deprived urban neighbourhoods, peripheral rural regions, poorer nations, and disadvantaged areas of the global economy are more inclined to engage in activities within the informal economy (ILO, 2012; Schneider & Williams, 2013; Williams & Round, 2010). According to this theory, the informal sector is often perceived as primitive, traditional, stagnant, marginal, residual, feeble, and gradually disappearing, a leftover of pre-capitalist formations that are anticipated to be eliminated by the relentless and unavoidable progression of modernization and economic advancement. Consequently, this form of economic

engagement is predominantly found in peripheral 'backward' areas and among marginalized societal groups (Williams & Horodnic, 2015b).

2.7 Reinforcement thesis and participation in the informal economy

Since the dawn of the 21st century, there has been recognition that the informal sector constitutes a substantial and enduring segment of the global economy. This challenges the conventional notion that the informal sector is merely a leftover of past modes of production. It is now evident that the informal sector is a significant part of the global economy, with many workers in different countries and regions engaging in informal economic activities (ILO, 2012; 2013; Williams, 2013; Williams & Williams, 2014). A report from the OECD shows that of the three billion people in the global workforce, around two-thirds (1.8 billion) are working in the informal economy.

In recent years, a new theory known as 'political economy' has emerged in support of the reinforcement theory. This theory proposes that the expansion of a deregulated global economy has increased informal work. (Castells and Portes 1989; Gallin 2001; Slavnic 2010; Taiwo, 2013). This work is often subcontracted or outsourced to incorporate informal employment into modern capitalism. According to this theory, the informal sector is the result of today's capitalism, driven by employers looking to cut costs by hiring self-employed individuals in the informal sector. These workers, often marginalized and lacking formal job opportunities, turn to informal work out of necessity (Castells and Portes, 1989; Davis, 2006; Gallin, 2001; ILO, 2002; Slavnic 2010).

2.8 Empirical Review on Informal Employment

2.8.1 Studies on Informal Economy

The informal economy, though challenging to define, manifests in various forms, such as survivalist businesses operating from pavements, pedestrian malls, transport interchanges, and homes, as well as agrarian activities in both urban and rural areas. According to ILO (2003), the informal economy encompasses 'economic activities by

workers and economic units that are – in law or in practice – not covered or insufficiently covered by formal arrangements.' Various terms, such as informal sector, second economy, informality, and shadow economy, are used interchangeably with 'informal economy' (Rogerson, 2007). The informal economy plays a crucial role in a country's overall economy. In many nations, it employs more people than the formal sector (ILO, 2012). For example, in sub-Saharan Africa, the informal economy accounts for up to 72% of employment, highlighting its significance in sustainable development and poverty eradication efforts (Smit & Musango, 2015). In Brazil and India, the informal economy employs 42.2% and 83.6% of the workforce, respectively, which is significantly higher compared to 37.2% in South Africa (ILO, 2012). Despite the variations, the informal sector remains vital for employment across various economic activities (ILO, 2012). Additionally, the informal economy is particularly important for the urban and rural poor, especially women (Smit & Musango, 2015b).

2.8.2 Studies on the informal economy in India

Informality is a persistent characteristic of all labour markets, both developed and developing countries. It had increased during the 1990s but subsequently declined during the 2000s. Even though the trends indicated a reduction in informality, especially in some countries, the size of the informal economy and the level of decent work deficits continue.

In India, employment is mainly informal, with 90% of workers involved in informal arrangements nationwide (Raveendran & Vanek, 2020). The informal sector in India is extensive, encompassing a wide range of activities from street vending to agrarian production. Most workers still need more certainty about the long-term sustainability of their employment status and lack any social protection net. The COVID-19 pandemic significantly affected these informal workers globally, exacerbating existing vulnerabilities and inequalities. Vulnerable populations such as women, the youth, workers with less education, are more informally employed and hence, they are more vulnerable (Shehu & Nilsson, 2014).

2.8.3 Reviews on the determinants of informal employment

Both developed, and developing nations are undergoing labour market transformations due to globalization and economic reforms. While the informal economy was initially associated with developing nations, it has also become prevalent in developed countries. Various authors suggest that the presence of the informal economy in these nations can be attributed to different theories and factors. The emergence of the informal economy is commonly linked to main theories such as dualist or modernist, structuralists, legalist or Neo-liberals, and Voluntarist or Post-structuralist theories. A study by Krakowski (2005) on the determinants of the informal economy highlighted that the intensity of labour regulations appears to be the most significant factor in explaining the size of the informal economy. In addition to theoretical perspectives, both microeconomic and macroeconomic factors influence the growth of the informal economy. A study by Doğrul (2012) revealed that gender is a significant determinant of the growth of informal employment in Turkey. Research indicates that women are more likely than men to work in vulnerable positions, particularly as contributing family workers and home-based workers. Similar findings were obtained in studies conducted by (Adom, 2014; Williams & Efendic, 2021; Williams & Horodnic 2017c).

Furthermore, there is a clear connection between higher levels of education among workers and a reduction in informal employment. In G20 countries, 95% of women and 93% of men without educational attainment are engaged in informal work (ILO, 2020). A study by Sahoo & Neog, (2017) reveals significant heterogeneity within informal employment regarding poverty, age, gender, socio-religious communities, educational attainment, and industrial classification. Youth, especially those aged 15-24, are more likely to engage in informal employment (Abdel & El-Bakly, 2017; Bălan, 2014; Lorato et al., 2023; Shehu & Nilsson, 2014) due to limited job opportunities, lack of experience, and educational qualifications. The formal job market often requires expertise and skills that young individuals may not yet have, making it hard for them to compete.

Additionally, the flexibility and immediate income associated with informal jobs, like freelancing or gig work, appeal to youth who need to support themselves or their families quickly. Informal employment can also provide practical experience and develop skills that are not easily accessible through formal employment or traditional education. Economic instability and insufficient job creation further contribute to the prevalence of informal work among young people as they strive to earn a living.

Another factor contributing to the rise of informal employment is the status of residence. Migrants often move from rural areas to urban centres in search of better job opportunities but face significant obstacles in entering the formal job market, such as lack of education and skills, legal restrictions, and discrimination (Bhagat, 2014). Consequently, the informal economy serves as a crucial safety net for migrants, enabling them to sustain themselves and their families amid systemic exclusion and economic precarity. The informal economy provides a more accessible alternative, allowing migrants to earn a livelihood despite these barriers. For instance, a study by (Kundu & Sarangi, 2007) revealed that in India, migrants frequently take up jobs as street vendors or casual labourers due to their low socio-economic backgrounds and the flexibility of informal work. Additionally, the informal sector allows for greater mobility and adaptability, which is essential for migrants who may not have stable residency or long-term employment prospects (Clark & Colling, 2019).

Macroeconomic factors, such as unemployment, significantly drive individuals into informal employment. A study by Vidović & Ritan (2022) emphasized that unemployment rates impact the informal labour market, along with exports and GDP growth rate. Similarly, a survey conducted by Berrio-Calle & Bran-Piedrahita, (2019) in Colombia found a direct correlation between the duration of unemployment and the likelihood of entering the informal sector. Several studies have indicated that unemployment is the primary cause of informality, compounded by sociodemographic factors like education and gender and economic factors such as globalization and industrial development. Benavides et al. (2022) assert that informal employment, which lacks social security and legal protection, is primarily driven by unemployment. A study

by Aikaeli & Mkenda (2015) on Tanzania's construction industry revealed that higher earnings in informal settings and lack of capital, often due to unemployment, push workers towards informal employment. Abraham (2017) found that informal employment in formal enterprises usually involves relatively older and well-educated individuals, challenging the notion that only the uneducated and very young or old are affected by unemployment-driven informality. Finally, Gaspareniene, (2022) underscored the dynamic relationship between unemployment rates and the informal economy in Lithuania.

Household characteristics also influence individuals to engage in informal employment, primarily driven by economic necessity, cultural norms, and social networks. Economic pressures within households, such as low income or unemployment, often push individuals towards informal work for financial survival (ILO, 2019). A study conducted by Shonchoy and Junankar, (2014) has revealed that cultural practices and traditions may favour informal work, with family businesses or cottage industries serving as viable options for income generation. Besides, social support networks within households, including relatives and friends engaged in informal employment, can provide guidance and opportunities, further encouraging participation in the informal sector (Calvo& Matthew, 2004). Besides, limited access to formal job opportunities due to educational disparities or discrimination also drives individuals towards informal employment within their household's socio-economic context. Chen (2014) has revealed from their study that flexibility and perceived resilience of informal work may make it more appealing, especially for individuals with household responsibilities.

Low-skill industries often attract informal workers due to various factors. These industries usually have low entry barriers, minimal qualifications, and offer immediate employment and cash payments (Duman, 2024; ILO, 2020). The lack of formal regulations allows for the exploitation of labour and non-compliance with laws (Clark et al., 2023). This flexibility appeals to both cost-conscious employers and workers

seeking autonomy (Duman, 2024). The informal nature also allows for multiple income-generating activities, making these industries attractive to informal workers in tough economic times (Aditya & Amri, 2023).

2.8.4 Reviews on informality and vulnerability in informal employment

Research indicates that labour informality is prevalent in certain types of employment, sectors, and business sizes. Moreover, workers with limited experience and low initial productivity are more likely to be part of this vulnerable group (ILO., 2013; ILO, 2014). Women are particularly susceptible to engaging in informal employment compared to men (ILO, 2018a; Mukhopadhyay, 2023; Ruiz & Pereznieto, 2022). Since women typically have more household responsibilities, they often prefer flexible working arrangements, which informal employment offers. However, this preference is also a result of limited opportunities in the formal sector due to various barriers, including discrimination (Shehu & Nilsson, 2014). These barriers manifest in multiple ways. For instance, women may face biases in hiring practices, wage disparities, and limited access to training and development opportunities. Additionally, the lack of affordable childcare services compels many women to seek jobs that allow them to balance work with family duties. Informal employment, while providing the needed flexibility, usually lacks social protections such as maternity leave, health insurance, and retirement benefits, further entrenching gender disparities in economic security and well-being.

Age is also one of the critical factors contributing to informality. Several studies have indicated that informality is higher among the youth and older age groups. In other words, informal employment tends to decline with an increase in age (Shehu & Nilsson, 2014). Many young people turn to informal employment as an attractive option as it is a way to earn a living, especially as an alternative to the formal sector. Limited access to formal job opportunities, exacerbated by insufficient education or skills mismatch, drives many young people towards informal employment, where entry barriers may be lower (Amal & Bandara, 2018). The flexibility and autonomy offered by informal work

can be attractive to youth, enabling them to navigate the uncertainties of transitioning into the labour market or balancing work with other responsibilities like higher education. Furthermore, informal employment often allows for quicker entry into income-generating activities than formal employment, which can appeal to young people seeking immediate financial independence. But, due to the absence of social protections, job security, and opportunities for skill development, informal employment can perpetuate a cycle of vulnerability and impede long-term economic progress for youth.

An individual's educational background impacts the types of jobs available to the person (Shehu& Nilsson, 2014). There is a vast literature on returns to education indicating that investment in education yields a positive wage return (Shehu& Nilsson, 2014).

Education generally renders people more productive and, therefore, more attractive in the labour market. Furthermore, education may act as a signal to employers, considering it as a proxy for imperfectly observable characteristics such as morale, cognitive skills or family background. Employers might prefer educated over uneducated individuals even in cases where formal training is irrelevant to the job considered. Thus, if formal jobs are selected for informal ones, the share of informally employed should decrease when moving up the education ladder. A study by (Shehu& Nilsson, 2014) has indicated that the share of formal employment increases with educational attainment. Formal employment requires better-educated workers; it seems natural to find a higher age average among this category of workers since acquiring education generally means that one enters the labour force at a later age. Therefore, education plays a vital role in escaping informality.

An individual's educational background influences the job opportunities available to them. Research suggests that investing in education leads to higher wages (Shehu& Nilsson, 2014). Education generally enhances productivity, making individuals more

appealing to employers—intangible traits such as diligence, cognitive abilities, or proficiency in a specific field. Employers may favour candidates with higher education qualifications over those with less education, even when formal training is not directly related to the job. Thus, if formal jobs are preferred to informal ones, the share of informally employed should decrease when moving up the education ladder. The disparity in human capital between developing and developed countries is attributed to the differences in the quality and quantity of education. Less developed nations face challenges such as lower educational attainment, poor quality of education, and limited skills accumulation. This results in under qualification, skill shortages, and skill gaps. The strain on education and job markets is particularly pronounced in developing countries with a young population.

The contrast between traditional and modern economic sectors is evident in the education and skills prevalent in these economies. The conventional or informal economy typically requires lower levels of education and skills. Moreover, structural and technological changes in developing countries are increasing the demand for skilled workers. Due to low educational attainment and skill mismatches, many workers in these regions end up in vulnerable employment. Staneva (2014) explored the relationship between education and employment outcomes among youth in developing countries, focusing on addressing skills mismatch and improving transitions to quality employment. The results highlight the importance of aligning education policies with labour market demands to improve youth employment outcomes. Besides, the study also emphasized the need to address skills mismatches and discrepancies between the supply and demand for youth labour to ensure better transitions to quality employment for young people. A study by Amal & Bandara (2018) found that the lack of access to English education for poorer families contributed to youth informality in the southern province. Additionally, the limited formal job opportunities and prolonged periods of unemployment could push individuals to participate in the informal sector.

Status of residence is a crucial factor influencing individuals to engage in informal employment. Migrants who move to urban areas for better job opportunities often end up in informal jobs due to a lack of skills and low educational qualifications. Abdulloev et al. (2011) explored the connection between migration and informal activities in Tajikistan. The study revealed that migration in Tajikistan acts as a substitute for informal work, affecting household income and spending. Increased migration resulted in higher remittance inflows, contributing to positive economic growth. Households with migrants tend to have lower extra expenses compared to those without migrants, suggesting a possible positive correlation between migration and income from the informal sector.

Workers with lower educational qualifications are often drawn to less skilled industries. According to the segmentation theory of the labour market, low-skilled jobs are typically found in the secondary sector or unstructured labour market due to the interchangeable nature of workers and the lack of specific human capital. Employees in these sectors often face poor working conditions and job instability. Despite these challenges, low-skilled workers play a crucial role in the economy by performing manual labour and essential tasks in agriculture, hospitality, food service, retail, and manufacturing that do not require advanced skills or formal education. Research by Sahoo & Neog (2017) indicated that low-skilled workers are frequently employed in informal own-account, regular, and casual worker positions in industries like agriculture, construction, and other services. Industries such as agriculture (excluding cultivators) tend to attract low-skilled workers for informal job opportunities. Low-skilled workers are also notable in sectors like manufacturing, where job requirements may align with their skill levels.

Numerous studies have indicated that the size of the firm is also one of the most important factors that contributes to informality. The firm's size is measured by the number of employees working in the organization. Size makes a firm subject to legal regulations, creating a division between formal and informal firms. Increasing firm size

increases a firm's visibility and thus increases the detection risk if operating informally (Ulyssea, 2020). The size of a firm often correlates with the level of informality within its operations. Smaller enterprises tend to exhibit higher levels of informality due to various factors such as limited resources for compliance, greater flexibility in employment arrangements, and a lesser degree of scrutiny from regulatory bodies. In contrast, larger firms typically have more extensive infrastructure, resources, and a higher degree of regulatory oversight, leading to lower levels of informality. However, in some cases, larger firms may engage in subcontracting or outsourcing practices, which can introduce informality within their supply chains.

The size of a firm is also one of the factors that influence the prevalence of informality within its operations, with smaller and larger enterprises exhibiting distinct patterns in informal employment practices. Several studies have revealed that smaller firms often face formidable barriers to formalization, such as bureaucratic hurdles, limited resources, and compliance costs (De Soto, 1989). Hernando De Soto's influential work has highlighted how challenges hinder small businesses' ability to operate within the formal sector, compelling them to resort to informal practices. Smaller firms may need more dedicated human resource departments and legal teams to navigate the complex regulatory landscape, exacerbating their susceptibility to informality.

Conversely, more prominent firms typically possess more excellent resources and organizational structures that facilitate compliance with formal labour regulations (Marlow, 2002). Loayza et al. emphasized that larger firms are less likely to engage in informal employment due to their visibility and capacity for oversight. These firms often have dedicated departments and teams responsible for ensuring compliance with labour laws and regulations. Moreover, larger firms may have established relationships with regulatory bodies, enabling them to navigate the regulatory landscape more effectively.

However, despite the advantages of size, larger firms may still contribute to informality through subcontracting or outsourcing arrangements (Dabla-Norris et al., 2018). The study conducted by Mukherjee, (2022) highlighted how larger companies, particularly in sectors with flexible labour arrangements, may opt for subcontracting to cut costs and enhance flexibility. This subcontracting can extend informal practices into the supply chain, creating a ripple effect throughout the economy. Additionally, larger firms may engage in informal employment practices to maintain competitiveness in sectors characterized by intense competition and price pressures (Amin, 2021).

Besides, factors such as the regulatory environment and market conditions also play a crucial role in shaping the relationship between firm size and informality (Ulyssea, 2015). Smaller firms may resort to informal employment in economies with stringent labour regulations to avoid compliance costs and regulatory burdens. Additionally, smaller firms may face pressure to conform to prevailing norms in sectors where informal practices are widespread or accepted, further perpetuating informality.

In contrast, larger firms may leverage their size and resources to influence regulatory frameworks and advocate for policies that promote formalization (World Bank, 2020). Moreover, larger firms may have greater bargaining power in labour negotiations, enabling them to implement formal employment practices and standards. However, the extent to which larger firms can influence regulatory frameworks and promote formalization may vary depending on the regulatory environment and institutional context. However, larger firms may still contribute to informality through subcontracting or outsourcing arrangements, particularly in sectors with flexible labour arrangements.

The subcontracting of the workforce and the increase in the informality of employment are interconnected phenomena reshaping labour markets, particularly in developing economies. The trend towards informalization of labour, characterized by employment outside the purview of labour legislation, has been on the rise since the 1980s, with a

significant share of industrial labour in India moving towards temporary, contract-based, and subcontracted forms of employment (Goldar & Aggarwal, 2012). This shift is partly attributed to labour market rigidities and import competition, where labour market reforms aimed at deregulation have paradoxically increased the creation of regular jobs, while import competition has heightened casual employment. Several studies have revealed that in India, the share of informal sector's employment has increased from 57% to 72%, and contract workers from 20% to 35% between 1999-2000 and 2011-12, indicating a significant move towards informalization and contractualization in organized manufacturing (Goldar & Aggarwal, 2012). This trend is not isolated to India; in Brazil, too economic crises have exacerbated the mismatch between formal labour market demands and the qualifications of the workforce, leading to an increase in informality despite regulations requiring formal contracts for employees.

2.8.5 COVID -19 pandemic and informal employment

Most of the world's poorest and most vulnerable people live and work in the informal economy, with over half of the workforce in developing countries employed in it (Shekar & Mansoor, 2020). Globally, it is estimated that more than 25 million jobs are at risk due to the COVID-19 outbreak (ILO, 2020). The International Labour Organization ILO (2020) has described the current scenario as 'the worst global crisis since World War II'.

As per the ILO (2020) report, it was projected that more than 40 crore informal workers in India may plunge further into poverty as a result of the COVID-19 pandemic. Industries such as hospitality, retail, business services, construction, and manufacturing have experienced significant setbacks, including decreased output, reduced work hours, and layoffs. The challenges faced by poorly paid and less skilled informal labourers are especially troubling, especially in low- and middle-income nations where a substantial portion of the workforce, accounting for 61% of the global workforce or 2 billion individuals, lacks social security or a safety net.

Prior to the COVID-19 pandemic, the informal sector was already grappling with economic difficulties like demonetization and the implementation of GST. Demonetization has had a greater negative impact on the informal sector than the formal sector. The global health crisis and subsequent lockdowns have disproportionately affected the socially vulnerable populations employed in informal sectors lacking job security (Shekar & Mansoor, 2020). The lockdown has already highlighted the hardships faced by these workers, mainly migrant workers in the informal sector. India is home to an estimated 40-50 million seasonal migrant workers engaged in construction, manufacturing, and service industries (Shekar & Mansoor, 2020). Due to the lockdown measures aimed at containing the virus spread, businesses and establishments were closed, leaving migrant workers without work and prompting their return to their hometowns.

The COVID-19 pandemic is not just a health crisis but also an economic crisis due to its immense repercussions on people's socio-economic well-being worldwide, as highlighted in the United Nations ESCAP Report, 2020. The financial effects of the pandemic have been felt across various sectors, encompassing even the informal sector. Lockdown measures significantly affected the economic circumstances of 60% of informal workers and 76% of informal employment globally (Swarna et al., 2022). The financial repercussions of the COVID 19 pandemic varied across different countries, The upper-middle-income countries experienced a 28% impact, high-income countries faced an impact of 76%, and lower-middle-income countries brunt the impact of almost 82%. Notably, lower-middle-income countries are particularly vulnerable because a substantial part of the workers work in the informal sector (ILO, 2020).

Workers working informally are vulnerable due to their lack of access to government benefits and social protection, leaving them without savings to address emergencies. This presents significant challenges across numerous countries globally. Unlike formal sector workers who can work remotely from home during the pandemic, those working

in the informal sector lacked this option, as highlighted in the UNDP Report of 2020. According to the International Labour Organisation, 'Stay at home means losing jobs and without wages, they cannot eat' (ILO, 2020). Because of the government's lockdown measures, many informal workers lost their jobs in emerging and developing countries. The COVID-19 pandemic has exacerbated global poverty, with projections indicating that approximately 88–115 million people will fall into poverty in 2021. This figure could rise by 150 million within the same year (World Bank Group, 2022). The nations that were grappling with poverty are expected to see a further rise in their poverty rates. In middle-income countries alone, poverty was expected to increase from 72 million to 94 million (World Bank Group, 2022). Thus, the pandemic has had a severe impact on economies worldwide, with South Asian countries being particularly vulnerable (Khan et al., 2022). It was estimated that 16 million people would fall into poverty due to the pandemic (Swarna et al., 2022). Among South Asian countries, India was the worst affected because India supports 90% of the workforce and offers 85% of all employment opportunities in the informal sector (NITI AAYOG, 2018). Around 87% of these enterprises do not receive tax benefits or social protections (Economic Survey, 2018).

As per the Periodic Labour Force Survey, 2017–2018 and 2018–2019, 75% of workers had not written job contracts; 54.2% were not eligible for paid leave, and 49.6% were not eligible for any social security benefits. In these social and economic problems, lockdown measures badly affected the informal sector. Although India has experienced remarkable economic growth over the past thirty years, a significant portion of its workforce still relies on the informal economy for their livelihoods, as highlighted by Kesar et al. (2021). As of 2017–18, approximately 52% of workers were self-employed, mainly consisting of own-account workers, unpaid family workers, and micro-employers. About 25% were engaged as casual daily wage workers, while 23% were employed in regular salaried classes. Notably, even among regular workers, 71% of the workers did not have a written employment contract, indicating a significant level of job insecurity (Roy et al., 2022). Therefore, any suspension of economic activity

immediately destroys the employment and income of informal workers. The initial phase of the pandemic amplified pre-existing disparities, exacerbating inequities across various dimensions such as social status, gender, caste, religion, demographics, and economic background. Those already economically marginalized before the outbreak bore the brunt of its impact most severely. According to the study conducted by the Centre for Monitoring Indian Economy (CMIE), an estimated 122 million people in India lost their jobs in April 2020, of which 91.2 million were in informal employment, such as petty traders, street vendors, daily wage workers, etc. This job loss among the lowest rank of scheduled castes was thrice as significant as that for the upper class (Deshpande & Ramachandran, 2020).

The report released by Non-Profit Action Aid India highlighted that the COVID-19 pandemic disproportionately impacted informal workers, with an estimated 80% experiencing job loss. This crisis led to over 400 million individuals being pushed into heightened poverty. The closure of worksites, non-payment of wages by employers, and lack of access to transportation compounded the hardships faced by these workers, prompting approximately 100 million to return to their hometowns with their families (Khanna, 2020). Consequently, they encountered numerous social and economic challenges. The lockdown measures created hunger, deprivation, death, and an unknown future for the workers in the informal sector in India (Raju et al., 2021).

The COVID-19 pandemic severely affected the livelihoods of workers who were informally employed worldwide, including India (Nath et al., 2023b). Therefore, to control the spread of the virus, the Government of India imposed a sudden and complete lockdown for almost three weeks. This led to a complete halt in all economic activities, which exaggerated the financial crisis of the informal workers. This crisis led to job loss; thus, the livelihood of all the informal workers, including the migrant workers, was severely affected. Most of these migrants wanted to go back to their native place on account of the fear of the pandemic and job loss. A study conducted by Singh, (2020) on the impact of the pandemic on the rural economy concerning the plight of migrant

workers and the short-run implications of COVID-19 on the rural economy revealed that the pandemic had both short-term and long-term impacts on the rural economy on account of the reverse migration that exerted excess pressure on the agricultural sector and put a more significant number of people into abject poverty.

About 100 million Indian workers lost their jobs during the nationwide lockdown in April-May 2020, with women, less formally educated, and lower-income households being disproportionately affected (Deshpande & Ashwini, 2020; Kansiime et al., 2021; Mamgain, 2021). Data from the Periodic Labour Force Survey in India suggests that young workers were hit the hardest, and their unemployment rate increased from 21% to 36% in April- June 2020 compared to the same quarter in 2019. Among them, migrant workers were the most vulnerable: the most defining images of the first COVID-19 wave were of migrant workers who lost their jobs and livelihood in cities, walking back hundreds of kilometres to their rural hometowns. Imbert (2020) estimates that across India, around 11 million inter-state migrant workers returned home after the first lockdown.

The COVID-19 pandemic had a devastating effect on the tourism industry. A study conducted by Lopes et al. (2021) on the Portuguese tourism and hospitality industry revealed that the most vulnerable workers to COVID-19 unemployment were the older group, less educated, women, and residents in regions with a higher concentration of people in tourism activity. Similar studies were conducted on the effects of the COVID-19 pandemic on tourism and hospitality.

2.9 Conclusion

To conclude, there is vast literature offering insights into the growth of informal employment both at the global and national level by testing the relevant hypothesis. However, when it comes to examining the rise of informal employment from a micro-level perspective, there remains a notable gap in research. Besides, the state of Goa has received little attention in this regard, with no comprehensive studies focusing on

informal employment. Besides, by evaluating the validity of the marginalisation and reinforcement thesis. the existing body of literature provides restricted insights into how household and workplace characteristics influence the probability of individuals participating in informal employment. in order to evaluate the validity of the marginalisation and reinforcement theses in understanding the factors driving informal employment in Goa, this study has utilized social security as a novel dependent variable, which has not been explored in similar research before. Although there is a considerable amount of literature addressing the increase in informality within the service industry, the majority of these studies primarily concentrate on the impact of demographic and work-related factors. What distinguishes this study is its uniqueness in examining the consequences of firm size and recruitment practices on the phenomenon of growing informality in employment, an aspect that has not been extensively explored in previous research. Informality in employment often leads to increased vulnerability. Hence this study aims to identify the individual factors contributing to the rise of vulnerability by employing Sharpley Decomposition methodology, a technique that has not been previously explored in the context of Goa. Besides, the study also tries to examine the impact of COVID-19 pandemic, on the informal workers in Goa using a trajectory sample, a novel approach not previously conducted in similar research.

CHAPTER III

INFORMAL EMPLOYMENT AT THE NATIONAL AND STATE LEVEL - AN OVERVIEW

3.1 Introduction

The persistent growth of informal employment is a defining characteristic of all developing economies, making it a structural component of the labour market. Informal employment, often characterized by a lack of formal contracts, social security benefits, and labour regulations, remains prevalent due to various economic, social, and regulatory factors. In many developing economies, the informal sector acts as a vital source of income and employment for a significant portion of the population, often absorbing those who are unable to secure formal employment due to limited job opportunities, skill mismatches, or rigid labour market regulations. Hence, there is a need to understand the trends of informal employment as it would give a better understanding of the dynamics of the labour market over a period of time both at the Central and the State level. By examining this trend, it will help in assessing the impact of economic changes, technological advancements, and globalization on the workforce. Besides, it will also provide insights into broader economic patterns, support effective policy formulation, and guide strategies to combat unemployment and underemployment.

Most of the livelihoods of the poor in emerging markets and developing economies (EMDEs) often depend on informal economic activity. In these economies, informal economy output, on average, accounts for about one-third of gross domestic product (GDP), and informal employment constitutes about 70 per cent of total employment, of which self-employment accounts for more than one-half of the informal employment (World Bank, 2021). This substantial contribution highlights the sector's importance in driving economic activity, fostering entrepreneurship, and providing livelihoods. Informal enterprises, ranging from small-scale vendors and street traders

to informal service providers and home-based workers, play a crucial role in the production and distribution of goods and services. These enterprises often operate with lower overhead costs and greater flexibility, enabling them to respond swiftly to market demands and economic fluctuations.

Furthermore, the informal sector accounts for 30% to 90% of non-agricultural employment in developing economies (Shonchoy& Raja Junankar, 2014). This wide range highlights the sector's capacity to absorb labour, especially in contexts where formal job creation is insufficient to meet the growing labour force. The high prevalence of informal employment is often driven by factors such as rural-urban migration, urbanization, and demographic pressures. For many workers, informal employment serves as a stepping stone, providing essential income and work experience that can potentially lead to better opportunities in the future.

This chapter offers a comprehensive overview of trends in informal employment across both national and state levels. It examines the variations in informal employment and also highlights Goa's contribution to total informal employment. Additionally, it analyses the impact of the COVID-19 pandemic on various groups of informal workers, emphasizing how the crisis intensified vulnerabilities leading to significant job losses among these workers.

Table 3.1: Percentage share of informal self-employment to total employment in India and Goa.

Year	Self Employed				
	India (%)	Change (%)	Goa (%)	Change (%)	Goa's Share (%)
2017-18	51.9	-	28.8	-	0.55
2018-19	51.6	-0.3	41.4	12.6	0.80
2019-20	54.4	2.8	33.1	-8.3	0.61
2020-21	56.6	2.2	37.7	4.6	0.68
2021-22	55.3	-1.3	37.1	-0.6	0.67
2022-23	56.6	1.3	35.1	-2	0.62

Source: CMIE data

Table 3.1 presents an overview of self-employment trends in India and Goa from 2017-18 to 2022-23. In India, the percentage of self-employed workers has increased over the years, from 51.9% in 2017-18 to 56.6% in 2022-23. This upward trend, despite a slight decline in 2018-19 (-0.3%), can be attributed on account of economic factors and disruptions in the economy on account of the COVID-19 pandemic, which led to widespread job losses among the formal sectors, pushing many workers into self-employment. In 2021-22, there was a slight decrease in self-employment due to the fact that those workers who took up self-employment on account of job loss or break in service due to the COVID-19 pandemic had joined their previous work in the formal sector.

On the other hand, Goa exhibited more volatility. The percentage of self-employed workers in Goa increased from 28.8% in 2017-18 to 41.1% in 2018-19 on account of the economic boosts from the tourism sector. But this percentage sharply decreased to 33.1% in 2019-20 on account of economic slowdowns that took place on account of the COVID-19 pandemic. In 2020-21, the percentage of workers who were self-employed increased from 33.1% to 37.7% due to a decline in formal job opportunities. However, in 2021-22, there was a percentage decrease of 0.6%. However, in 2022-23, the percentage of workers who were self-employed further decreased by 2% due to the gradual recovery in the formal job market.

Goa's contribution to total informal self-employment has reflected these fluctuations, having its peak in 2018-19 at 41.4 % and thereby having a steady fluctuation between 28.8 % in 2017-18 to 37.7% in 2020-21 % in total self-employment

Table 3.2 provides an insight into the percentage trends of regular wage or salaried employment in India and Goa from 2017-18 to 2022-23, In India, the percentage of workers with regular wages slightly fluctuated, from 24.1% in 2017-18 to 22.3% in 2022-23.

Table 3.2: Percentage share of Regular Wage/Salary to total employment in India and Goa.

Year	Regular Wage/ Salary				
	India (%)	Change (%)	Goa (%)	Change (%)	Goa's Share (%)
2017-18	24.1	-	61.3	-	2.54
2018-19	25.2	1.1	53.7	-7.6	2.13
2019-20	24.1	-1.1	60.3	6.6	2.50
2020-21	22.4	-1.7	56.1	-4.2	2.50
2021-22	23.2	0.8	55.8	-0.3	2.41
2022-23	22.3	-0.9	57.2	1.4	2.57

Source: CMIE data

This fluctuation was on account of the economic disruptions on account of the COVID-19 pandemic on the labour market in India. In 2018-19 there was a percentage increase of 1.1% on account of the efforts taken by the Government to formalize employment. But in subsequent years, the percentage share of regular wage or salaried employment showed a decline, particularly in 2020-21 where the share of regular salary and wage workers reduced from 24.1% to 22.4%. In 2020-21 on account of the COVID-19 pandemic, which led to job losses and economic instability across the labour market. However, in 2021-22, as the economy was coming back to its normal state, there was a slight percentage increase of 0.8% in regular employment.

In contrast to India, Goa displayed a higher percentage of regular wage employment, starting at 61.3% in 2017-18 but slightly fluctuating over a period of time. Goa, being one of the developed states of India, has a well-developed industrial sector. After the passing of the GST Act, the Government of Goa, made efforts to regularize workers in the formal sector. Hence, the percentage of these workers was higher than that of India. However, in 2018-19, there was a drop of 7.6% in regular wage/salary workers, which may be on account of a shift in the job market. However, 2019-20 saw a subsequent rise of 6.6%, indicating a recovery, but again on account of the pandemic, the share of

regular wage/salary workers saw a decline of 4.2 % in 2020-21. In the post-pandemic year 2021-22, regular wage/salary workers showed a further decline of 0.3% in regular or wage employment. However, in 2022-23, there was an increase of 1.4% in regular wage/salary workers due to the recovery in the formal job market. However, Goa's share in regular salary/ wage employment has remained relatively stable between 2% to 3% over a period of time.

Table 3.3 provides an overview of the percentage trends of casual labour in India and Goa from 2017-18 to 2022-23. At the national level, the percentage share of casual labour has declined from 24% in 2017-18 to 21.5% in 2022-23. This percentage decline was highest in 2019-20, indicating that the impact of the COVID-19 pandemic was more on casual workers as compared to regular workers. However, in 2020-21, the percentage share of casual workers showed a slight increase due to the slow recovery of the economy post-pandemic and restoration of economic activities.

Table 3.3: Percentage share of casual labour to total employment in India and Goa.

Year	Casual Labour				
	India (%)	Change (%)	Goa (%)	Change (%)	Goa's Share (%)
2017-18	24		9.9		0.41
2018-19	23.1	-0.9	4.9	-5.0	0.21
2019-20	21.5	-1.6	6.6	1.7	0.31
2020-21	22	0.5	6.2	-0.4	0.28
2021-22	21.5	-0.5	7.1	0.9	0.33
2022-23	21.5	0	7.7	0.6	0.36

Source: CMIE data

However, in the year 2021-22, the share of casual workers again showed a decline of 0.5% on account of a potential shift in employment patterns. However, in 2022-23, the percentage share of casual labour has remained constant. In contrast to this, the

percentage share of casual labour in Goa's market exhibited fluctuating trends. In 2017-18, the percentage share of casual labour was 9.9%, which reduced to 4.9% in 2018-19, indicating a decrease of 50 %. In 2019-20, it experienced an increase of 1.7 %, which was higher as compared to India. In Goa, the casual job is mostly undertaken by migrants. These migrants normally work on daily wages. The COVID-19 pandemic did not have much impact on the casual workers in Goa due to the fact that these workers were continued in the job and some of the casual workers who were working in the formal sector received their wages even during the lockdown. In 2020-21, the share of casual labour declined by 0.4% on account of reverse migration, where some of the migrants decided to go to their native place. In 2021-22, the percentage share of casual labour increased by 0.9% as the Goa economy was coming back to normalcy on account of the tourism activities. In 2022-23, the percentage share of casual labour showed an increase of 0.6%, Despite these variations, Goa's share of casual labour nationally remained relatively small throughout the period, ranging from 0.21% in 2018-19 to 0.41% in 2017-18. Since Goa is a small state as compared to other states in India, it attracts fewer migrant workers compared to other Indian states. These migrants often take up casual work due to the lack of formal job opportunities. Consequently, the proportion of casual workers in Goa is lower than the national average.

Table 3.4 illustrates the percentage share of the Labour Force Participation Rate (LFPR) in India and Goa across genders from 2016-17 to 2023-24. The data revealed a declining trend both in India and Goa. At the India level, the Labour Force Participation Rate for all genders declined from 46.2% in 2016-17 to 39.5% in 2022-23, reflecting a cumulative decrease over the period.

This decline may be influenced by various factors, such as demographic changes, economic conditions, and shifts in employment patterns. However, the highest decline was in 2020-21 on account of the COVID-19 pandemic.

Table 3.4: Percentage share of Labour Force Participation rate in India and Goa

Year	Labour Force Participation rate				
	India (in %) (All gender)	Change (%)	Goa (in %) (All gender)	Change (%)	Goa's share (%)
2016-17	46.2		56.2		1.2
2017-18	43.7	-2.5	51.1	-5.1	1.8
2018-19	42.8	-0.9	45.6	-5.5	1.06
2019-20	42.7	-0.2	39.1	-6.4	0.9
2020-21	40.0	-2.7	39.7	0.4	0.9
2021-22	40.1	0.06	36.9	-2.7	0.9
2022-23	39.5	-0.6	34.9	-1.9	0.9
2023-24	40.5	0.9	32.2	-2.7	0.8

Source: CMIE data

In contrast, Goa's labour force participation rate also showed a declining trend. In 2016-17, the labour force participation rate (LFPR) was 56.2%, which declined to 51.1% in 2017-18, which declined to 32.2% by 2023-24. Despite these fluctuations, Goa consistently maintained a higher compared to the national average due to the fact that Goa is a tourist destination state and a large number of workers work in the tourism sector. and this is especially peak during the tourist season. In 2020-21, the LFPR showed a slight increase of 0.4% due to the efforts undertaken by the Government to restore the economy to its normal state. However, Goa's percentage share in the labour force at the national level decreased gradually from 1.2% in 2016-17 to 0.8% in 2023-24, indicating a decline. These trends highlight the divergent labour market dynamics between India and Goa, shaped by regional economic factors, demographic trends, and local employment opportunities.

Table 3.5 presents the trends in unemployment rates in India and Goa from 2017-18 to 2022-23, indicating a significant fluctuation in both regions. At the national level, India's unemployment rate for all genders stood at 6.97% in 2017-18. It increased

sharply to 16.9% in 2020-21 on account of the COVID-19 pandemic, which led to widespread job losses, especially among informal workers due to the suspension of economic activities. However, the unemployment rate saw a decline to 14.5% in 2021-22 and further dropped to 12.3% in 2022-23, indicating a gradual recovery of economic activities.

Table 3.5: Percentage of unemployment rate in India and Goa

	Unemployment Rate (%)				
Year	India (%) (All gender)	Change (%)	Goa (in)	Change (%)	Goa's Share (%)
2017-18	6.97	-	14.9	-	2.14
2018-19	5.36	-1.61	9.4	-5.5	1.75
2019-20	8.13	2.77	8.5	-0.9	1.05
2020-21	16.92	8.79	11.1	2.6	0.66
2021-22	14.47	-2.45	12.4	1.3	0.86
2022-23	12.32	-2.15	10	-2.4	0.81

Source: CMIE data

In contrast, Goa's unemployment rate also exhibited significant fluctuations over the same period. In 2017-18, Goa's share of unemployment rate was higher than the national average, which stood at 14.9%. Goa's population depends upon tourism activities, which are seasonal in nature. Hence, during the off season, these people are unemployed and hence the rate of unemployment is high. Despite initial high rate, Goa has experienced an overall improvement, with the unemployment rate decreasing to 10% by 2022-23. This trend suggests that local employment conditions improved over time, even though there were periods of increase. The variations in Goa's unemployment rate highlight the state's economic resilience and ability to recover despite facing challenges similar to the national level.

Table 3.6 provides an overview of workers engaged in different occupations in India and Goa from 2016-17 to 2023-24. India's occupational structure has significantly changed over this period. Business-related occupations have seen a steady increase, rising from 13.0 % in 2016-17 to 20.4% in 2023-24. This upward trend is particularly noticeable post-pandemic, as many individuals turned to entrepreneurial activities for survival after losing their jobs due to government-imposed restrictions. The number of workers who started businesses has consistently increased, except for a marginal decline of 0.4% in 2021-22. The percentage of salaried employees has maintained stability of 21% from 2016-17 to 2019-20. However, in 2019-20 and in 2020-21 it showed a decline on account of job loss due to COVID-19 pandemic. In 2021-22 to 2023-24, the percentage of workers in salaried jobs has remained constant. Small traders and wage labourers have experienced a gradual decline, dropping from 42.4% in 2016-17 to 29.7 % in 2023-24, indicating that the pandemic had a negative impact on these workers. Most of the small traders and wage workers work informally and these workers were the worst affected on account of the COVID-19 pandemic. The percentage of workers who were into farm operations showed a steady increase from 23.2% in 2016-17 to 27.9% in 2023-23, except in 2021-22. The rise in the number of workers opting for farming activities can be attributed to the pandemic's impact, as many casual workers who could not find employment returned to the agriculture sector, which served as a cushion to absorb the surplus labour. The contribution of the homemakers in was negligible. In 2016-17, the percentage of homemakers was 0.1% whereas, in 2023-24 it was 0.07%.

The occupational structure in Goa from 2016-17 to 2023-24 also reveals notable trends and shifts across various categories of workers. The number of workers who are engaged into business occupations saw fluctuations over the years. The number of workers who were into business was around 20.1% in 2016-17 which increased to 26% in 2023-24. However, it reached its peak of 33.2% in 2022-23 and thereafter it declined to 26% in 2023-24. The percentage of workers who were engaged into business increased from 23.6% in 2020-21 to 30.3% in 2021-22. This increase was due to the

fact that people who have lost their jobs during the pandemic turned to business activities as a means to sustain themselves and their families.

The initial increase can be attributed to economic growth and entrepreneurial activities, while the subsequent decline may result from market saturation and the recovery of employment opportunities in the formal sector post pandemic. Salaried employees initially increased, reaching 76.6% in 2019-20, but then decreased to 63.1% by 2023-24. This decline could be due to economic uncertainties and job losses during the pandemic, followed by a slow recovery. Small traders and wage labourers consistently decreased from 6.8% in 2016-17 to 1.9% in 2023-24, reflecting the adverse impact of the pandemic on informal and low-income workers. Conversely, the number of workers who were into farm activities initially declined but then increased significantly from 2.8% in 2016-17 to 8.9% in 2023-24. This rise can be attributed to displaced workers from other sectors returning to agriculture as a fallback during economic downturns.

In Goa, in 2019-20, the homemakers contributed around 0.09% which was higher as compared to India. Goa is rich in culture and female workers make a variety of dishes which has great demand in the market. Hence, due to job loss on account of the pandemic and having no other source of income, these women workers opted for this profession so as to earn income for the family. Goa's share in homemakers in comparison to the national level was negligible. Only in 2019-20, its share increase on account of the lockdown where people who lost their jobs, turned to this business as a means to sustain themselves and their families.

Table 3.7 outlines the trends in the Work Participation Rate (WPR) to Usual status of persons 15 years and above across genders in India and Goa from 2017-18 to 2022-23. At all India level, WPR for individuals aged 15 years and above exhibited a consistent upward trend, rising from 46.8% in 2017-18 to 56% by 2022-23.

Table 3.6: Percentage of workers engaged in different occupations in India and Goa

Occupation/ Year	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
INDIA								
Business (in %)	13.0	15.6	17.4	19.0	19.6	18.7	20.1	20.4
% increase	-	2.3	2.0	1.7	0.6	-0.4	1.4	0.4
Salaried employees (in %)	21.2	21.5	21.7	21.2	19.2	20.1	21.0	21.8
% increase	-	0.3	0.2	-0.5	-1.9	0.9	0.9	0.8
Small traders & wage labourers (in %)	42.4	38.4	34.6	31.9	30.0	30.9	31.2	29.7
% increase	-	-3.9	-3.8	-2.7	-1.9	0.9	0.3	-1.5
Farmers (in %)	23.2	24.6	26.1	27.8	31.1	30.2	27.7	27.9
% increase	-	1.4	1.5	1.7	3.3	-2.5	-2.5	0.2
Homemakers (in %)	0.1	0.1	0.1	0.03	0.02	0.01	0.02	0.07
% increase	-	-0.01	0.02	-0.08	-0.02	-0.01	0.01	0.05
GOA								
Business (in %)	20.1	21.9	20.3	18.5	23.6	30.3	33.2	26.0
% increase	-	1.8	-1.6	-1.8	5.1	6.7	2.9	-7.2
Salaried employees (in %)	70.3	73.4	74.9	76.6	68.9	60.9	57.2	63.1
% increase	-	3.1	1.4	1.7	-7.7	-7.9	-3.8	5.9
Small traders & wage labourers (in %)	6.8	3.3	3.6	4.6	3.2	3.1	1.9	1.9
% increase	-	-3.0	0.4	1.0	-1.4	-0.1	-1.1	0
Farmers (in %)	2.8	1.4	1.2	0.2	4.4	5.6	7.7	8.9
% increase	-	-1.4	-0.2	-1.0	4.1	1.4	1.9	1.2
Homemakers (%)	0	0	0	0.09	0	0	0	0
% increase	-	0	0	0.09	-0.09	0	0	0
Goa' s share in Business	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.1
Goa's share in Salaried occupation	0.5	0.5	0.5	0.4	0.4	0.3	0.3	0.3
Goa' s share in Small traders & wage labourers	0.02	0.01	0.01	0.02	0.01	0.01	0.01	0.01
Goa' s share in farmers	0.018	0.008	0.006	0.001	0.02	0.02	0.03	0.03
Goa's share in home makers	0.000	0.000	0.000	0.300	0.000	0.000	0.000	0.000

Source: CMIE data

Table 3. 7: Percentage share of WPR according to Usual status of persons 15 years and above in India and Goa

Year	WPR according to Usual status of persons 15 years and above.				
	India (in %) (All gender)	Change (%)	Goa (in %) (All gender)	Change (%)	Goa's Share (%)
2017-18	46.8	-	42.9	-	0.92
2018-19	47.3	0.5	45.9	-3	0.97
2019-20	50.9	3.6	47.3	1.4	0.93
2020-21	52.6	1.7	43.4	-3.9	0.83
2021-22	52.9	0.3	41.6	-1.8	0.79
2022-23	56	3.1	45.1	3.5	0.81

Source: CMIE data

This growth reflects improved workforce participation across diverse educational backgrounds, likely influenced by expanding economic opportunities and enhanced access to education and training nationwide.

Conversely, Goa's WPR also witnessed growth but with noticeable fluctuations during the same period. In 2017-18, Goa's WPR stood at 42.9%. It increased to 45.1% by 2022-23. These fluctuations were on account of local economic conditions, sectoral dynamics, and variations in educational attainment levels within the state. Despite these variations, Goa's contribution to the national WPR has remained relatively stable, except in 2021-22, where it decreased by 1.8%. Goa's workforce participation rates have slightly lagged behind the national trends, on account of its economic dependence on tourism sector which is seasonal in nature.

3.2 Magnitude and nature of job loss

The rapid spread of the COVID-19 pandemic has resulted in an unprecedented global crisis, significantly impacting public health, economic activities, and labour markets (World Bank 2020; UNO 2020). This situation is considered the worst global crisis since World War II (ILO, 2020). India has been severely affected on account of the pandemic. During the first quarter of the fiscal year 2020-2021 (April–June), India's GDP plummeted by 23.9 percent, the highest decline among major economies such as the USA, UK, France, Germany, and China (Dev & Sengupta, 2020; Sidhu et al., 2020). In an attempt to combat the pandemic, the Indian government implemented one of the world's strictest lockdowns starting at midnight on March 24, 2020. Initially intended for three weeks, the lockdown extended until May 31, 2020, followed by a phased unlocking. This stringent lockdown halted most economic activities, leading to significant supply and demand shocks in the economy. The consequences were severe and widespread, resulting in drastic livelihood losses.

According to estimates by the Centre for Monitoring Indian Economy (CMIE), 123.8 million people, or 30.5 percent of workers, lost their jobs in April 2020 compared to February 2020. The number of unemployed individuals spiked to 52.6 million in April 2020. The unemployment rate more than tripled, reaching over 23 percent in April and May 2020, up from around 7 percent in previous months. Micro, small, and medium enterprises (MSMEs) were significantly affected, with an estimated 25–30 million workers losing their jobs by the end of June 2020 (Jha & Kumar, 2020).

The economic fallout of the lockdown has been extensive, but certain segments of society have been disproportionately affected such as small traders, self-employed individuals, migrant workers, daily wage labourers, youth, and women, predominantly who are the part of the informal sector (ILO 2020, Kapoor 2020). According to the Periodic Labour Force Survey (PLFS) 2018-19, nearly three-fourths of the Indian workforce are self-employed or casual wage labourers. These workers are not protected by labour laws and they are excluded from social security benefits like ESI, PF etc.

(Kapoor 2020). For those employed as regular salaried workers, about 60 percent lack social security benefits (Kapoor 2020). Moreover, over half of the regular salaried workforce is employed in informal work arrangement, where they receive low wages and endure poor working conditions (Mamgain, 2021). This precarious situation highlights the vulnerability of a significant portion of the Indian workforce during the lockdown. The workers who were working informally, who lack formal employment contracts and social protections, have been hit the hardest by the economic disruptions caused by the lockdown. The absence of job security and social safety nets has exacerbated their precariousness, leading to severe income instability. Women and youth in these sectors have faced additional challenges, further highlighting the inequalities within the labour market.

Goa, too, was a witness to this economic crisis. As a prominent tourist destination, the state's economy heavily relies on tourism-related occupations. With the lockdown measures imposed by the government, economic activities ground to a halt, and the tourism sector came to a standstill. This resulted in widespread unemployment among those employed in the tourism industry, including hotel staff, tour guides, taxi drivers, and small business owners who depended on tourist spending. The sudden termination of tourism activities not only affected direct employment but also had a ripple effect on ancillary industries such as transportation, handicrafts, and local markets. The livelihoods of thousands of Goan families who depended on the seasonal influx of tourists, were severely disrupted. The economic hardship faced by these workers highlighted the vulnerability of regions heavily reliant on a single industry, particularly during a global crisis.

To conduct a comparative analysis of the COVID-19 pandemic's impact on workers at both the national and state levels, this study utilized data from the Centre for Monitoring Indian Economy (CMIE). The CMIE data provides comprehensive insights into employment trends, unemployment rates, and the economic conditions faced by workers across various sectors. By comparing the national data with state-specific data

from Goa, the study aims to identify the unique challenges and similarities experienced in different regions.

Table 3.8 provides a comprehensive overview of the employment characteristics in India and Goa from April 2019 to June 2020. The labour force size in India fluctuated from 434.5 million in April 2019 to 419.7 million in June 2020. These variations were on account of various factors and demographic changes that influenced the labour market in India. Employment figures exhibited these trends, beginning at 400.3 million in April 2019, it reached to a peak of 410.5 million in January 2020, and sharply declining to 282.2 million in April 2020 on account of the significant disruptions caused by the COVID-19 pandemic. The subsequent recovery to 376.9 million by June 2020 reflected the gradual economic stabilization as lockdown restrictions were eased and economic activities resumed. The impact of the COVID-19 pandemic was particularly profound, leading to a sharp decline in employment across sectors, especially affecting informal and vulnerable workers. The spike in unemployment rate from 7.76% in February 2020 to 23.52% in April 2020 underscores the severity of job losses during the peak of the crisis. As the economy began to ease with the economic activities picking up, the unemployment rate gradually declined to 10.2% by June 2020, indicating initial recovery efforts and bounciness in the labour market.

The demographic composition within the workforce also showed notable fluctuations. In India, the percentage of women in the workforce ranged from 9.3% in April 2020 to 11.2% in Jan 2020 reflecting ongoing efforts to enhance gender equality in employment. Youth participation rates remained relatively stable around 34% to 35%, indicative of demographic stability in workforce engagement.

Urban employment rates fluctuated from 32.07% in April 2019 to 30.2% in May 2020, reflecting varying levels of economic activity across urban centres influenced by industrial growth, service sector dynamics, and urbanization trends. The variability in

urban employment rates also reflected the overall economic flexibility and recovery phases observed during this period.

In contrast to India, Goa's employment characteristics also showed unique characteristics. The labour force in Goa ranged from 5.62 lakh in April 2019 to 5.43 lakh in June 2020, with employment figures fluctuating from 5.09 lakh in April 2019 to 5.01 lakh in April 2020. These variations in employment rate were indicative of Goa's dependence on seasonal industries like tourism, which experience significant fluctuations based on tourist arrivals and local economic activities.

The demographic composition in Goa's workforce also displayed significant unpredictability. Women constituted a larger proportion of the workforce compared to all India level, ranging from 8% in January 2020 to 24% in April 2020 reflecting the diversity of employment opportunities available in the state. Youth participation rates were irregularly reported as there was no specific data available for some months. However, in April 2019 around 25% of the youth were in the workforce which decreased to 24% in May 2020, suggesting shifts in educational attainment among the youth.

Urban employment rates in Goa varied from 25.8% in April 2019 to 6.8% in January 2020. It showed a notable peak in April 2019, mainly due to the tourist season. Goa's economy is largely influenced by seasonal trends in tourism and the service sectors, which are key drivers of Goa's economy. The unemployment rate in Goa showed significant changes. Unemployment rates was highest at 21.6% in May 2020, on account of the COVID-19 pandemic where a significant portion of the workers lost their jobs. It reduced to 9.9% in June 2020 on account of the state's economic recovery efforts post-pandemic.

Table 3.8: Characteristics of the employed persons in India and Goa

INDIA								
Variable	Apr 19	Dec 19	Jan 20	Feb 20	Mar 20	Apr 20	May 20	Jun 20
Labour Force (in million)	434.5	442.0	442.4	440.0	433.0	368.9	400.9	419.7
Employment (in millions)	400.3	405.6	410.5	405.9	395.8	282.2	313.7	376.9
% Women	10	10.9	11.2	10.3	10.5	9.3	10.5	10.5
% Youth	34	34	34	34	35	34	35	34
% Urban	32.1	31.6	30.9	31.7	31.7	30.2	30.2	30.9
%Unemployed rate	7.9	7.6	7.2	7.8	8.6	23.5	21.7	10.2
GOA								
Labour Force (in lakh)	5.6	5.3	4.6	4.9	4.4	5.8	4.8	5.4
Employment (in lakh)	5.1	4.7	4.2	4.8	4.1	5.0	3.8	4.9
% Women	20	14	8	14	11	24	12	19
% Youth	25	-	-	-	-	-	24	-
%Urban employment	25.8	11.8	6.8	11.8	8.6	18.9	-	-
Unemployed rate (in %)	9.3	11.8	8.9	2.8	5.2	13.3	21.2	9.9

Source: CMIE data

Table 3.9 indicates gender-specific impact of job loss during the early months of the COVID-19 pandemic. The finding of the study indicated that the crisis on account of the pandemic disproportionately affected women workers more as compared to men. At the all-India level, the findings revealed that between February and April 2020, job losses were significantly higher for women, with over 37% of female workers losing their jobs, compared to 30% of male workers.

Table 3.9 Gender wise dimension of job loss (in percentage)

Month/ Year 2020	India (%)			Goa (%)		
	Male	Female	Total	Male	Female	Total
February- March	-2.7	-0.5	-2	-10	-34.6	-14
February- April	-29.6	-37.4	-30	-7	77.7	5
February- May	-22.7	-21.3	-23	-19	-32.1	-21
February-June	-7.29	-5.7	-7	-4	41.3	2

Source: CMIE data

This disparity highlights the vulnerability of women in the labour market, as they are often employed in less secure, lower-paid, and more precarious positions. The data indicates that as economic activities began to resume and restrictions were gradually lifted, the conditions of the workers in the labour market started showing signs of recovery, reducing the overall job loss percentages for both genders.

In Goa too, the situation shows a similar pattern but with much bigger differences. The data from the table 3.9 reveals that from February to April 2020, around 78% of female workers lost their jobs as compared to 7% job loss for male workers during the same period. This drastic difference was on account of the nature of employment where a large proportion of women workers are engaged in the tourism sector. The pandemic and the lockdowns had a bad impact on the tourism industry leading to widespread job losses among those employed in this sector. As the situation gradually improved with the lifting of lockdowns and the reopening of the economy, the percentage of workers who were without job started gradually started improving but the recovery was slow and uneven, on account of the challenges faced by the tourism sector.

Table 3.10 reveals the region wise dimension of job loss in terms of percentage across different time periods in 2020 for India and Goa. At All-India level, the percentage of overall job loss was highest between February to April 2020, which was around 30.5%. It was higher in urban areas as compared to rural areas during the same period.

Table 3.10 Region wise dimensions of job loss (in percentage)

Month/ Year 2020	India			Goa		
	Urban	Rural	Total	Urban	Rural	Total
February- March	-2.5	-2.5	-2.5	-3.7	-	-5.2
February- April	-33.8	-28.9	-30.5	1.5	2.0	1.7
February- May	-30.6	-22.8	-22.7	-	-9.1	-7.9
February-June	-9.5	-7.2	-7.1	-	-	0.7

Source: CMIE data

However, for the period February to May 2020, there was a slight reduction in overall job loss to 22.7%, In urban areas, the percentage of job loss reduced to 30.6% whereas, and in rural areas, it reduced to 22.8%. From February to June, the percentage of job loss reduced drastically due to the opening up of the economy post pandemic and the restoration of the economic activities back to its normal state. During this period overall job loss was 7.1%. For urban areas, it was 9.5% and for rural areas, it was 7.2%.

On the other hand, Goa saw an increase in employment during February to April 2020 period, with urban employment rate increasing by 1.5% and rural employment increasing by 2.0%, respectively, resulting in an overall increase of 1.7%. From February to May 2020, In Goa, there was a notable drop in rural employment by 9.1%, leading to an overall decrease of 7.9%. From February to June 2020, Goa saw a slight overall increase of employment by 0.7%.

Table 3.11 illustrates the percentage trend of unemployment rate across gender in India and Goa from June 2019 to June 2020. During this period, India consistently recorded higher unemployment rates among females compared to males, indicating a broader gender disparity in job access and economic opportunities. In June 2019, male unemployment was around 6.4%, while female unemployment was higher at 18.9%, on account of structural barriers and sectoral segregation in the labour market.

Table 3.11: Trends in unemployment across gender in India and Goa(in percentage)

Month/ Year	India (%)			Goa (%)		
	Male	Female	Total	Male	Female	Total
June-2019	6.4	18.9	7.9	4.9	23.2	9.3
Dec-2019	6.2	17.3	7.6	6.9	32.9	11.8
Jan-2020	6.0	15.7	7.2	6.5	30.3	8.9
Feb-2020	6.4	18.4	7.8	1.9	7.6	2.8
Mar-2020	7.6	17.4	8.8	4.1	13.7	5.3
Apr-2020	22.9	29.2	23.5	13.8	11.6	13.3
May-2020	21.3	25.4	21.7	17.7	40.4	21.3
June-2020	9.5	15.4	10.2	10.6	7.3	9.9

Source: CMIE data

The disparity was particularly more pronounced during the COVID-19 pandemic, with April 2020 showing a significant spike in unemployment rates for both genders, but higher for females as compared to males. This was on account of the fact that the pandemic disproportionately had a worst impact on sectors where women were over represented, such as hospitality, retail and the construction industry. However, in May 2020, total unemployment rate reduced from 23.5% to 21.7 %. However, in June 2020, unemployment further reduced to 10.2%, on account of gradual easing of restrictions and the slow recovery of the job market.

Goa too, experienced a higher percentage of unemployment as compared to India from June 2019 to Jan 2020 except in the month of February, March and April 2020. In April 2020, male unemployment was 13.8% which exceeded female unemployment rate of 11.6%. The percentage of unemployment for females was higher as compared to males, throughout most months, with peak during April and May 2020, on account of the COVID-19 pandemic which had brought a halt in all the economic activities. Goa's economy totally depends on the tourism sector. On account of the lockdown measures imposed by the Government to curtail the spread of the pandemic, the tourism activities

had come to a standstill. As a result, most of the workers who were dependent of this sector directly or indirectly lost their jobs resulting in the rise of unemployment in the state. Therefore, the study revealed that throughout the period, both India and Goa, has observed higher rates of unemployment among females as compared to males, indicating a significant amount of gender disparity in the labour market. The COVID-19 pandemic had a significant impact on unemployment rates across genders, particularly from March 2020 onwards. Both India and Goa saw a sharp increase in unemployment rates in April 2020, reflecting the widespread economic disruptions caused by the Covid 19 pandemic. Female unemployment rates surged disproportionately, highlighting vulnerabilities in sectors where women are heavily employed, such as hospitality and retail.

While both India and Goa showed similar trends in gender disparities and the impact of COVID-19 on unemployment rates, Goa's data exhibited sharper spikes in unemployment during April and May 2020, indicating that the impact of COVID-19 pandemic was more felt in Goa as compared to India due to the fact that most of the people in Goa is dependent on the tourism sector which was adversely affected leading to job loss especially more among the female workers.

Table 3.12 provides a comprehensive overview of urban and rural unemployment trends in India and Goa from June 2019 to June 2020. In June 2019, India recorded an unemployment rate of 15.95%, with urban and rural rates at 8.26% and 7.69% respectively. Meanwhile, Goa's total unemployment rate during the same period was higher as compared to India's unemployment rate, which was at 18.78%, with urban unemployment rate at 13.33% and rural unemployment rates at 5.45% respectively. By December 2019, India maintained its overall unemployment rate at 15.95%. Urban employment saw a slight increase to 9.02%, while rural employment decreased to 6.93%. On the other hand, Goa experienced a rise in total unemployment to 19.7%, primarily due to an increase in urban unemployment from 13.3% to 16.2% and a decrease in rural unemployment rate from 5.45% to 3.54%.

However, in April 2020, India experienced a major increase in its unemployment rates, with total unemployment rate increasing to 47.8% with urban unemployment rate increasing to 24.9% and rural unemployment rate increasing to 22.9%.

Table 3.12 Comparison of trends in unemployment across region in India and Goa (in percentage)

Month/ Year	India (%)			Goa (%)		
	Urban	Rural	Total	Urban	Rural	Total
June 2019	8.3	7.7	15.9	13.3	5.5	18.9
Dec 2019	9.0	6.9	15.9	16.2	3.5	19.8
Jan 2020	9.7	6.1	15.8	10.9	5.4	16.2
Feb 2020	8.7	7.3	15.9	4.3	0	4.3
Mar 2020	9.4	8.4	17.6	4.8	Data not available	-
Apr2020	24.9	22.9	47.8	11.9	15.9	27.7
May 2020	23.1	21.1	44.3	Data not available	20	-
June 2020	11.7	9.5	21.2	Data not available	Data not available	-

Source: CMIE data

In April 2020, India's total unemployment rate surged to 47.8%, with urban areas at 24.9% and rural areas at 22.9%. This sharp increase in unemployment rates was primarily due to the nationwide lockdown imposed to curb the spread of COVID-19. This lockdown halted most economic activities, leading to the closure of businesses, factories, and construction sites. Sectors such as manufacturing, retail, hospitality, construction and transportation were particularly affected, resulting in massive job losses. In May 2020, the total unemployment rate slightly decreased from 47.8% to 44.3%, indicating a gradual stabilization, with urban employment showing a slight decrease from 24.9% to 23.1% and rural unemployment rate decreasing from 22.9% to 21.1%, respectively. By June 2020, the unemployment rates further reduced to 21.2%, with urban employment rate at 11.7% and rural unemployment rate at 9.5%. This

reduction in the unemployment rate was on account of the relaxation measures taken by the Government.

In Goa, too, the unemployment trends also reflected a significant variation. In January 2020 total unemployment rate stood at 16.2%, with urban unemployment rate at 10.9% and rural areas at 5.4%. However, in February 2020, there was a drastic drop occurred in the unemployment rate, with the total unemployment dropping to 4.3%, particularly observing zero unemployment in rural areas. By March 2020 urban unemployment stood at 4.8%. However, for the same period, rural unemployment data was not available. In April 2020 there was a steady rise in unemployment rate. The total rate unemployment rate stood at 27.7%, with urban unemployment rate at 11.9% and rural unemployment rate at 15.9%. This rise in unemployment rate was on account of the lockdown measures undertaken by the Government on account of the COVID-19 pandemic. In May 2020, only rural data is available, showing an unemployment rate of 20%. Since, the unemployment data for June 2020 was not available, the unemployment rate cannot be found out.

3.3 Conclusion:

From the above data, it can be concluded that there exist urban rural disparities in unemployment trends both at the national and state level. Urban areas have consistently shown higher rate of unemployment as compared to rural areas, both in India and Goa, because there is a large influx of migrant in urban areas and on account of the stiff competitions in the job markets, it becomes difficult to find a job. However, rural areas benefit from more stable employment in agriculture and informal sectors, contributing to lower unemployment rates despite generally lower wages.

CHAPTER IV

IMPACT OF MICRO DETERMINANTS ON INFORMAL EMPLOYMENT IN GOA

4.1 Introduction

This chapter deals with the micro determinants and their impact on informal employment in Goa. Micro determinants basically refer to the individual-level factors that influence individuals to undertake informal employment. Informal employment is a type of employment that is not bound by formal contractual arrangements. The informally employed constitute an overwhelming majority of the workforce in India, accounting for between 70 to 90 per cent of the labour force, depending on the definition used (NSSO, 2011). Identified by the lack of social security benefits attached to their employment, these jobs occur in different guises and forms. Therefore, identifying the factors that contribute to the rise of informal employment from an individual-level perspective is of utmost importance as it can help in designing appropriate policies for the targeted group so as to mitigate the problems of poverty and unemployment.

This chapter presents the socio-economic profile of the participants, their household characteristics, and the firm-related factors. It then explores the motivations behind individuals opting for informal employment from a micro perspective. Lastly, it concludes by analysing the individual-level factors influencing informal employment and its outcomes.

4.2 General profile of the respondent

This section highlights the general characteristics of the respondents along with the household characteristics. Previous studies have indicated that general characteristics, along with household characteristics, play an important role in influencing individuals to undertake informal employment. The general profile of the respondents is presented in Table 4.1 From the analysis, it can be observed that 47% of the respondents were

male and 53% were female. Since informal employment allowed work flexibility, females were more engaged in informal work as compared to males. The mean age of the respondents was 34.2 years. In terms of marital status, about 29.3% of the participants indicated that they were single, while around 38% mentioned being married. Additionally, 18.5% of the respondents reported being widowed, and 14.2% stated that they were divorced.

Table 4.1 : General Profile of Respondents

Sr. No	General Profile		No. of Respondents	Percentage
1.	Gender	Male	188	47
		Female	212	53
2.	Age (mean) in years	34.2		
3.	Marital Status	Single	117	29.3
		Married	152	38
		Widowed	74	18.5
		Divorced	57	14.2
4.	Number of years of education (in years)	7.3		
5.	Residential status	Non-migrants	181	45.2
		Migrants	219	54.8
6.	Primary bread winner in the family	No	156	39
		Yes	244	61
7.	Length of unemployment (in months)	9.3		
8.	Number of years of education of household head (mean)	3.2		
9.	Household sector of employment	Formal	112	28
		Informal	288	72

Source: Primary data from field survey

The average years of schooling of most participants were approximately 7.3 years since higher educational qualifications are not mandatory for individuals to engage themselves in informal employment. Informal jobs mostly rely on practical skills that can be acquired through experience or short-term training rather than formal education. Besides, economic necessities may also drive many individuals to seek immediate

employment as waiting to achieve higher education may not be feasible due to limited formal job opportunities and the urgent need to support themselves and their families. Goa, being one of the well-developed states in India, many individuals migrate to the state with aspirations of securing improved job opportunities. However, due to limited formal job opportunities and skill mismatch, these workers are forced to take up informal jobs. The findings of the study revealed that 54.8% were migrants, whereas 45.2% were non-migrants.

The study found that most of the respondents, around 61%, were the main breadwinners in the family, whereas 39% of respondents had some family members who were also working beside them. The primary earner in the family bears the burden of supporting the household. During times with few formal job options, individuals frequently turn to informal work to manage their expenses. Additionally, prolonged periods of unemployment can push individuals towards informal employment. Lack of better job prospects can lead these individuals to seek informal work as a means of supporting themselves and their families. The primary data revealed that the average unemployment duration for the respondents is 9.3 months. Household characteristics also influence whether an individual undertakes informal employment. The findings of the study revealed that 28% of the respondent's household head worked in the formal sector, whereas 72% of them worked in the informal sector.

Table 4.2 sheds light on the work-related dynamics among the respondents. Notably, a significant majority, approximately 64.5%, of those engaged in informal work benefit from flexible work schedules, contrasting with the 35.5% adhering to fixed timings. Delving into industry segmentation, findings indicate that 20.8% are employed in sectors such as hotels, and restaurants, often serving as waiters or assistants. Given Goa's status as a tourist hotspot, a surge in employment within the hospitality sector during peak seasons is evident, driven by heightened demand for accommodation and dining services. Moreover, the construction industry emerges as another prominent sector, employing around 22.6% of respondents. Notably, this industry often attracts individuals

with low skill levels. The study also revealed that 15% of the respondents work in personal services, 9.8% in private households with employed personnel, 4.3% in wholesale, retail trade, repairs of motor vehicles, 11.5% in financial services, 9% in health and 7% in public administration.

Informal employment is one of the defining characteristics of both developed and developing countries. It refers to work arrangements that lack the legal protections, social security benefits and employment benefits typically associated with formal employment. In many countries, it contributes significantly to employment and economic activity.

Several studies have indicated that push (marginalisation thesis) and pull factors (reinforcement thesis) play an important role in influencing individuals to engage in informal employment. Traditionally, informal employment was considered a temporary phenomenon and it was mainly focused on marginalised people such as women, youth, those with little education and those living in single-person households (Williams & Horodnic 2018). Hence, it was an exclusionary perspective that constitutes participation in informal employment and that individuals participate in informal employment out of necessity and as a last resort due to the few choices available to them (Williams & Efendic, 2021; Williams & Horodnic, 2015a).

A study conducted by El-Bakly, (2002) revealed that socio demographic factors and household characteristics influence young people's decisions to enter the formal and informal labour markets in Egypt. However, recent studies have challenged this view, arguing that it is the firm-level characteristics that influence whether individuals take up informal employment, such as a flexible work environment, and in some sectors such as construction, hospitality and food services, and household services (Williams & Horodnic, 2015a, 2015b, 2016d, 2017b). Therefore, the reinforcement thesis challenged the marginalisation thesis and argued that informal employment is more common among formal firms and individuals in higher-income areas.

Table 4.2 : Work related characteristics of the respondent

Sr. No.	Work related characteristics		No. of Respondents	Percentage
1.	Job Characteristics	Fixed work schedule	142	35.5
		Flexible work schedule	258	64.5
2.	Industry	Hotels & Restaurants	83	20.8
		Construction	91	22.6
		Personal services	60	15
		Private households with employed personals	39	9.8
		Wholesale, retail trade, repairs of motor vehicles	17	4.3
		Financial services	46	11.5
		Health	36	9
		Public administration	28	7

Source: Primary data from field survey

Goa, a small state in India with a population of just under 1.5 million (Census, 2011) and has comparatively better socioeconomic indices and living standards. A well-known tourist destination, Goa has become one of the nation's fastest-growing industrial and economic hubs. Despite significant economic growth over the past few decades, Goa still relies heavily on the informal economy for employment (Ministry of Labour & Employment Labour Bureau, 2014). Due to a lack of stable employment possibilities in the formal sector, many people look for work in the informal sector. Contractual labour and outsourcing are the main causes of the increased level of informal employment in the formal sector.

Since informal employment is on the rise in Goa, it is important to identify the factors responsible for the growth of informal employment in Goa and which theoretical perspective explains this phenomenon in the state. Hence, this study is undertaken to

test this hypothesis as to whether informal employment is an attractive opportunity or a strategy of last resort in the state.

4.3 Methodology

This study makes use of a binary logistic model to investigate the factors influencing individuals to undertake informal employment and to test two associated hypotheses. This model is mainly used on account of its suitability in conditions where the dependent variable takes a value ranging between 0 and 1 (or 0 and 100 when expressed as a percentage). As the dependent variable is dummy in nature, utilizing the binomial logit estimation technique is essential so as to prevent the unboundedness issue associated with the linear probability model. The study supports the hypothesis that individuals engaged in informal employment tend to belong to marginalised populations. The dependent variable, “Absence of Social Security”, takes the value one if the respondent is not eligible for Social Security and zero otherwise. Those who are entitled to social security are treated as formal workers and those who are not entitled to social security are treated as informal workers. The null hypothesis states that the marginalised population are not likely to undertake informal employment, and the alternative hypothesis states that the marginalised population are more likely to undertake informal employment. The likelihood ratio in the binary logit model tested the null hypothesis. This approach differs from similar models used in the area (Williams & Horodnic, 2015a, 2015b, 2015d, 2016a, 2016b, 2018), where they have considered informal workers as those who have carried out any undeclared paid activity in the last 12 months. However, this study is unique as it has considered informal workers as those who are not eligible for social security in the organisation in which they are working.

For model 1, the independent variables used are gender (Gen), age (Age), marital status (Marstat), residential status (Resstat), years of education (Edu), the primary breadwinner in the family (Breadwin), length of unemployment (in months) (Unemp), number of years of education of the household head (Hhedu) and sector of employment

of the head of the household (Hhempsec). Model 2 is the summation of all the variables used in model 1, plus job characteristics (Jobchar) and the type of industry the respondent works in (Ind). For both models, gender is a binary variable, which takes value one if the respondent is a female and zero otherwise. Age is a continuous variable expressed in years. Marital status indicates whether the respondent is married or not. It takes the value one if the respondent is married and zero otherwise. Residential status indicates whether the respondent is a migrant or a non-migrant. It takes the value one if the respondent is a migrant and zero otherwise. The number of years of education is expressed in terms of formal years of schooling. Whether the individual is the primary breadwinner in the family is taken as a binary variable, which takes the value one if the respondent is the primary breadwinner in the family and zero otherwise. The length of unemployment is a continuous variable that is expressed in months. Number of years of education of the household head is a continuous variable. The sector of employment of the head of the household is a binary variable that takes the value one if the head of the household is employed in the informal sector and zero otherwise.

The logistic Model 1 is expressed as follows:

$$L: \Pr(\text{Abs Of Social security} = 1) = \beta_0 + \beta_1 \text{gen} + \beta_2 \text{age} + \beta_3 \text{agesq} + \beta_4 \text{marstat} + \beta_5 \text{resstat} + \beta_6 \text{edu} + \beta_7 \text{breadwin} + \beta_8 \text{unemp} + \beta_9 \text{hhedu} + \beta_{10} \text{hhempsect} + u \quad \dots\dots\dots (4.1)$$

It is hypothesized that women are more likely to engage in informal employment than their male counterparts. Women are expected only to do household chores and look after the children and elders. Income from women is generally treated as ancillary income. Women generally prefer to engage in informal jobs because of the pressure of household work and family responsibilities. Similar results have been observed in other studies as well (Aikaeli & Mkenda, 2015.; Bonnet et al., 2019; Chauhan, 2021; Dell'Anno, 2016).

Age is considered to be one of the important factors that encourage people to pursue informal employment. Young people are expected to be more likely to engage in

informal employment compared to the older age group. Age is also negatively correlated with informal employment (Balan, 2014). As young individuals venture into the formal job market for the first time, they may encounter challenges securing permanent or full-time positions. This is mainly due to the absence of prior work experience, which serves as a signal of their potential productivity to employers. Hence, young people are confronted with the dilemma of either accepting precarious employment opportunities or enduring prolonged periods of unemployment (Adeniran et al., 2020).

Several studies have revealed that married individuals are more likely to get themselves engaged in informal employment as compared to single individuals. A married person has to take care of his/her family, and hence, in the absence of a formal job, the individual has no other option but to take up the job in the informal sector.

Several studies have highlighted the fact that if an individual is a migrant, then he/she is more likely to undertake informal employment. For greater job prospects, migrants go to urban areas. These migrants have little choice but to work in the informal economy because there aren't any formal jobs available to them as a means of support. Additionally, because they lack a formal education, migrants may encounter linguistic and cultural hurdles, which makes it challenging for them to get a formal job. These types of obstacles may be less severe in the unorganised economy, making it simpler for migrants to acquire employment through networks.

The number of years of formal education is a key factor in participation in informal employment. The share of informal employment decreases with the increasing educational level of the individual (ILO, 2018c). The individual's educational background has a positive impact on the types of jobs available to the person. Returns to education have shown that investment in education yields a positive wage return. A higher level of education makes people more productive and thus more attractive in the

labour market. There are studies with similar results in the literature (Ahmed, 2015; Jiménez et al., 2015; Sparreboom, 2014).

It is assumed that an individual who is the breadwinner of the family is more likely to engage in informal employment. This is due to the fact that a person who is the breadwinner of the family must take on all family responsibilities. Due to the lack of other sources of income, these people have to work to support their families financially. Since there is strong competition for formal jobs in the labour market and there is no other source of income to support the family financially, the main breadwinner has to take whatever job is available in the market to support their families. (Williams & Horodnic, 2019).

The duration of unemployment is also one of the key factors that lead people to take up informal employment for survival reasons (Amal & Bandara, 2018). It is assumed that the longer the duration of unemployment, the greater the likelihood that a person will be in informal employment. As unemployment continues, individuals are increasingly turning to informal employment due to increasing financial pressures, depletion of savings and dwindling confidence. Prolonged unemployment creates gaps in employment history, making it more difficult to find formal employment, while informal networks and lower barriers to entry provide accessible options. The immediate need for income and a survival instinct drive acceptance of any work available, even when choice is limited. Deterioration in skills also motivates people to seek informal jobs to maintain employability (Williams & Horodnic, 2019).

Household characteristics also influence individuals to undertake informal employment. It is believed that if the household head has a formal education, then there are fewer chances of individuals undertaking informal employment. Household heads with higher levels of education play a crucial role in guiding family members towards formal job opportunities and career development. Household heads with higher education often have access to better information about formal job opportunities and

career development and can guide family members toward formal options. They have higher expectations for their children's education and may discourage low-skilled, informal work. They can financially support their family to pursue formal education, reducing the need for informal work.

The employment status of the household head also influences whether individuals engage in informal employment. If the manager engages in informal employment, he or she sets a role model for other family members who may follow suit and see this as a viable employment option. Additionally, if the head of the household is unemployed or underemployed, this can place financial strain on the entire family. This situation often forces other family members to seek informal employment to contribute to the family income and cover essential expenses. If the leader has contacts in the informal sector, he or she can facilitate informal employment opportunities for family members and make this a more accessible option. Finally, the employment status of the household head may influence the level of support he or she can provide to family members seeking formal education or skills development. If the manager is employed informally, he or she may have fewer resources to invest in the formal education and professional development of family members.

Table 4.3 displays the marginal effects of the binary logistic regression. The dummy dependent variable is the absence of social security. Model 1 includes the demographic profile and household characteristics. Demographic profiles include gender, age, marital status, residential status, number of years of education, whether the individual is the primary breadwinner in the family and the length of unemployment in months prior to this job. Household characteristics include the educational attainment of the household head and the sector of employment of the household head.

Gender, age, residential status, number of years of education, primary bread winner in the family, number of months of unemployment and employment sector of the household head were found to be significant. It is observed that the gender of the

respondent is significant at the 5% level. Hence, an individual who is a female is, on average, 1.0 % more likely to take up informal employment, holding all other variables constant. The respondent's age is statistically significant at a 10% level. As an individual grows older by a year, he/she is, on average, 1.3% less likely to take up informal employment, holding all other variables constant. Status of residence is found to be significant at a 5% level of significance. Hence, an individual who is a migrant is, on average, 2.5% more likely to engage in informal employment, holding all other variables constant.

The number of years of education of the respondent is significant at a 1% level and has a negative impact on his/her undertaking of informal employment. With every additional year of education, an individual is, on average, 1.5% less likely to take up informal employment, holding all other variables constant. The respondent being the primary breadwinner in the family is found to be significant at a 5% level. An individual who is a breadwinner in the family is, on average, 3.1% more likely to take up informal employment, holding all other variables constant. Length of unemployment (in months) is statistically significant at a 5% level and has a positive impact on the individuals engaging in informal employment. With every additional month of unemployment, an individual is, on average, 2.2% more likely to undertake informal employment, holding all other variables constant. The coefficient of the sector of employment of the household head is found to be statistically significant at a 5% level. Hence, an individual whose head of household works in the informal sector is, on average, 1.2% more likely to undertake informal employment, holding other variables constant. For model 1, other explanatory variables, namely, individual's marital status and number of years of education of the household head, are not found to be statistically significant.

According to the reinforcement thesis, it is not only the marginalised population who undertakes informal employment but also work-related nominators that influence individuals to undertake informal employment. Therefore, an attempt is made to add

work-related nominators to the existing model to analyse the reasons why individuals engage in informal employment.

Table 4.3: Results of Binary Logistic Regression (Model 1)

Dependent Variable: Abs of social security (Dummy=1 if a respondent is not eligible for social security, =0 otherwise)				
Variable	Marginal Effects	Standard Error	Z-statistics	P-value
Constant	.698	3.29	3.36	(0.75)
Gen	.010	1.06	1.73	(.035) **
Age	-.013	.039	-2.74	(.051) *
Age sq	.0002	1.07	5.52	(.04) **
Marstat	.015	1.26	4.15	(.172)
Resstat	.025	1.06	3.68	(.041) **
Edu	-.015	.023	-7.53	(.002) ****
Breadwin	.031	3.06	5.72	(.028) **
Unemp	.022	1.02	8.85	(.014) **
Hhedu	-.014	.033	-4.19	(.153)
Hhempsec	.012	1.05	3.80	(.013) **
No. of observations	400			
LR chi ₂ (8)	33.56			
Prob	0.0000			

Note: The marginal effects (dy/dx) are reported at the mean

The coefficients is reported for the constant

Standard errors are in parentheses

*Significance at 0.10 level

** Significance at 0.05 level

***Significance at 0.01 level

Hence model 2 represents the summation of socio-economic characteristics plus the work-related nominators. For the above model, the dependent variable is dichotomous, which takes the value 1 of the individual who is not eligible for social security and takes

zero otherwise. The null hypothesis for model 2 states that work-related nominators have no influence on individuals to undertake informal employment, and the alternative hypothesis states that work-related nominators significantly influence individuals to undertake informal employment. Hence, the likelihood ratio in the binary logit model tested the null hypothesis that states work-related nominators have no influence on individuals to undertake informal employment.

The independent variables used in Model 2 are similar to those used in Model 1, plus work-related nominators such as job-related characteristics and the type of industry the respondent works in are added to the existing model. The job-related characteristics indicate whether an individual has fixed or flexible timings at the workplace. It takes the value one if the individual has flexible working conditions and zero otherwise. The service industry is a nominal variable that is classified according to the National Accounts Classification, 2009.

The logistic model 2 is expressed as follows:

$$L: \Pr(\text{Abs of social security} = 1) = \beta_0 + \beta_1 \text{gen} + \beta_2 \text{age} + \beta_3 \text{agesq} + \beta_4 \text{marstat} + \beta_5 \text{resstat} + \beta_6 \text{edu} + \beta_7 \text{breadwin.} + \beta_8 \text{unemp} + \beta_9 \text{hhedu} + \beta_{10} \text{hhempstat} + \beta_{11} \text{jobchar} + \beta_{12} \text{ind} + u \quad \dots\dots\dots (4.2)$$

According to the reinforcement thesis, it is not only the marginalised population who are engaged in informal employment but also the work-related characteristics that influence individuals to undertake informal employment.

It is hypothesized that if an individual has flexible work timings, then there are more chances that he/she will undertake informal employment. Flexible work allows individuals to balance their employment with other responsibilities such as caregiving, childcare, or pursuing education. Informal employment often offers flexibility in terms of working hours and locations, making it a suitable option for people with a variety of commitments. Additionally, flexible work, particularly part-time or gig work, may not

provide stable or sufficient income. Individuals may choose to supplement their income through informal employment to meet their financial needs.

The service industry is a nominal variable classified according to the National Accounts classification. It is hypothesized that informal employment persists in those sectors requiring less education and skills. Hence, individuals possessing fewer skills are more likely to be employed informally in those sectors, such as construction and personal services.

Table 4.4 represents the marginal effects of the binary logistic regression. Model 2 includes all variables included in model 1 and work-related nominators. Gender, age, number of years of education, residential status of the respondent, whether the individual is the main bread winner in the family, length of unemployment in months, sector of employment of the household head, job characteristics and employment in hotel and restaurants, construction industry and personal services are found to be significant variables for individuals to engage into informal employment.

The gender of the individual is found to be statistically significant at the 5% level. An individual who is female is, on average, 1.9 % more likely to be informally employed, holding all other variables constant. Women are more likely to engage in informal employment than their male counterparts, especially in developing countries (Bonnet et al., 2019b). Because women are only expected to do housework work and look after the children and the elderly people, income earned by women is generally treated as supplementary income. Due to the pressures of housework and family responsibilities, women generally prefer informal jobs as compared to their male counterparts (Aikaeli & Mkenda, 2015; Bonnet et al., 2019b).

The age of the individual is found to be statistically significant at 5% significance. As an individual grows older by one year, he/she is, on average, 1.2% less likely to take up

informal employment, holding all other variables constant. The age of the respondent has a negative impact on engaging in informal employment, which implies that as the age of the individual increases, the likelihood of the individual engaging in informal employment decreases. As individuals grow older, they gain more skills and work experience, which can make them more competitive in formal labour markets where employers value expertise and specialized skills.

Therefore, compared to younger people, older people tend to prefer secure formal employment to informal arrangements(Williams & Krasniqi, 2021; Williams & Efendic, 2021; Williams & Round, 2010).

The model also shows that the status of residence is found to be statistically significant at a 10% level. Therefore, an individual who is a migrant is, on average, 1.4 % more likely to undertake informal employment, holding all other variables constant. Migrants predominantly enter the informal job market on account of limited access to formal jobs, language barriers, lack of formal education and legal restrictions on employment (Shonchoy& Raja Junankar, 2013). Besides, informal jobs may offer a quicker source of income and flexibility, making this sector appealing to migrant workers.

Number of years of education is found to be statistically significant at a 10% level. With every additional year of education, the individual is, on average, 2.1 % less likely to take up informal employment, holding all other variables constant. Increased years of education are associated with a reduced tendency for individuals to engage in informal employment. This suggests that as the number of years of education increases, the likelihood of individuals opting for informal work decreases.

Higher educational attainment frequently correlates with improved access to formal job opportunities. Educated individuals tend to possess greater skills, qualifications, and expertise desired by formal employers.

Table 4.4: Results of Binary Logistic Regression (Model 2)

	(Marginal Effects)	Standard Error	Z-statistics	P value
Constant	0.62	5.17	4.13	(0.76)
Gen	.019	1.57	3.15	.013**
Age	-.012	.023	-1.79	.031**
Agesq	.0001	1.05	2.04	.041**
Marstat	0.14	1.03	2.41	.172
Resstat	.014	2.15	4.13	.064*
Edu	-.021	.010	-2.35	.054*
Breadwin	.037	2.74	5.04	.023**
Unemp	.034	1.61	5.17	.039**
Hhedu	-.038	.081	-2.93	.157
Hhempsec	.011	1.13	2.13	.048**
Jobchar	.017	1.07	3.23	.018**
Ind Hotel & res	.024	1.02	5.12	.069*
Constr	.021	1.00	3.05	.019**
Perser	.029	1.00	2.17	.037**
Pvt hh with emp per	.018	1.21	3.19	.177
Other com	.070	3.02	4.05	.462
Wholesale & Ret trade, rep of motor veh	.0674	3.17	4.01	.395
Fin Ser	-.032	.051	-3.56	.372
Health	-.089	.081	5.04	.142
Pubadm	-.041	.021	-4.05	.925
observations	400			
LR chi2(10)	42.01			
Pseudo R2	0.3415			
Prob> Chi2	0.0000			

Note: The marginal effects (dy/dx) are reported at the mean

The coefficients is reported for the constant

Standard errors are in parentheses

*Significance at 0.10 level

** Significance at 0.05 level

***Significance at 0.01 level

Besides, formal sector jobs typically demand specialized training and knowledge, unlike informal employment, which often involves basic, labour-intensive tasks where educational background may not offer a substantial advantage (Ahmed, 2015b; Williams et al., 2020).

The primary breadwinner in the family is statistically significant at a 5% level. An individual who is the primary breadwinner in the family is, on average, 3.7% more likely to undertake informal employment, holding all other variables constant. On account of the severe competition for formal employment opportunities in the labour market and the absence of alternative sources of income to sustain their families, the primary breadwinner is compelled to accept any available job in order to provide financial support to their family (Williams & Horodnic, 2017b).

The length of unemployment in months is statistically significant at the 5% level. With every additional month of unemployment, an individual is, on average, 3.4% more likely to undertake informal employment, holding all other variables constant. Extended periods of unemployment can increase the probability of individuals resorting to informal work to earn income and alleviate the hardships of being unemployed. Consequently, as the duration of unemployment increases, so does the likelihood of individuals engaging in informal employment increases. This trend may stem from the necessity for individuals who are unable to secure formal employment to try to explore the informal sector as a means of survival strategy. Hence, the duration of unemployment significantly impacts individuals' involvement in informal employment, offering a potential route out of joblessness (Shehu& Nilsson, 2014).

The sector of employment of the household head is found to be statistically significant at a 5% level. An individual whose household head works in the informal sector is, on average, 1.1% more likely to get engaged in informal employment, holding all other variables constant.

Work-related nominators also influence individuals to undertake informal employment. The model shows that the job characteristics are found to be statistically significant at a 5% level. An individual with flexible working arrangements is, on average, 1.7 % more likely to undertake informal employment, all other variables are held constant. Flexible work arrangements may allow individuals to balance their profession and personal responsibilities, which in turn can lead to increased job satisfaction.

Hotel and restaurants, construction and personal services were found to be statistically significant at 10%. An individual who is working in the hotel and restaurant industry is, on average, 2.4% more likely to undertake informal employment, holding all other variables constant. Goa is a famous tourist destination, and hence, there is seasonal demand for labour in the hotel and restaurant industry. Besides, this sector does not require formal education, and hence, in the absence of any formal job, individuals have no other alternative but to take up an informal job. Low-skill industries such as construction and personal services are found to be statistically significant at a 5% level. An individual who is working in the construction industry is, on average, 2.1% more likely to take up informal employment, holding all other variables constant. Personal services were found to be statistically significant at 5%. Similarly, an individual who is working in personal services is, on average, 2.9% more likely to undertake informal employment, holding all other variables constant. Construction and personal services are typically low-skill industries that require no formal education and training (Mehrotra, 2019). Besides, workers in these sectors are appointed on a temporary or casual basis, aligning with the intermediate demand in these industries. The jobs in such low-skilled industries are normally found through personal or community networks, making it easier for individuals to access such jobs.

However, marital status, number of years of education of the household head, private household with employed personals, other community, social and personal services, wholesale, retail trade, repair of motor vehicles, financial services, health and public administration are found to be insignificant.

4.4 Chapter Summary

In order to identify the micro determinants of informal employment in Goa, the study has made use of a binary logistic model. Several studies have indicated that informal employment is mainly undertaken by the marginalised group who undertake this activity out of necessity. Hence, according to these studies, informal employment is a necessity that is undertaken by individuals due to their exclusion from the formal sector.

However, over time, this perspective was challenged, and a new viewpoint emerged. It suggested that not only marginalised groups engage in informal employment, but also that the characteristics of the work compel individuals to pursue informal employment. Hence, in order to test the validity of the two-alternative hypothesis, a survey was conducted among 400 employees who were working informally either in the formal or informal sector in Goa. The findings of the binary logistic model revealed that the marginalisation thesis holds valid when socio-demographic and household characteristics are taken into consideration. However, when work-related nominations are added to the existing model, the findings revealed that it is not only the marginalised population who are engaged in informal employment but also the work-related nominators who influence individuals to undertake informal employment.

In the context of sustainable and equitable development, the high prevalence of informality poses a significant challenge to establishing decent work for all. As it frequently results in poverty, inequality, and social exclusion, informality might operate as an obstacle to reaching the SDGs. It is not necessarily true, contrary to popular belief that marginalised groups are more likely to work informally. Therefore, the results of the study show that when formulating appropriate policies that can facilitate a smooth transition for these people from the informal economy to employment in the formal sector, it is necessary to address only these specific marginalised groups and not all people working in the informal sector or into self-employment. Furthermore, these

marginalised populations who work informally must be redeemed within social security systems so that they can work in a dignified manner.

CHAPTER V

DETERMINANTS OF INFORMALITY OF EMPLOYMENT IN THE SERVICE INDUSTRY IN GOA

5.1 Introduction

Informal employment is widespread in developing countries, making up over 60% of global employment (Chen Marthe & Carre Francoise, 2020). It is particularly prominent in sub-Saharan Africa and South Asia, while East Asia and Latin America experience somewhat lower levels of informality. Informal employment is characterised by the lack of firm registration, social security coverage, and formal employment contracts (World Bank, 2021). It includes a wide range of work arrangements and economic activities outside established legal regulations and protections and is common across various sectors in both urban and rural areas. In India, over 90% of the workforce is engaged in informal employment without any social security, and about 85% of non-agricultural workers are part of the informal labour force (Mehrotra, 2019). Despite India's rapid economic growth and status as one of the world's largest economies, the high prevalence of informality has remained largely unchanged for many years. This persistent trend is increasingly concerning as the number of job seekers continues to rise (Mehrotra, 2019). To address the growth of informality, the Government of India has implemented several measures. These include the demonetisation of currency, the introduction of the Goods and Services Tax (GST), the digitalisation of financial transactions, and the registration of informal sector workers on various government platforms. However, despite these efforts, informality remains widespread.

The previous chapter examined the reasons for engaging in informal employment from an individual perspective. However, informality exists not only because individuals take up informal jobs but also due to supply-side economies. Therefore, this chapter looks at the supply-side factors contributing to the increase in informality in employment. The chapter begins by explaining the concept of informal employment

and constructing the informality matrix as defined by ILO and NCEUS. It then examines the factors contributing to the rise of informality in the state of Goa.

5.2 Concept of Informal Sector and Informal Employment

The concept of the informal sector significantly differs from that of informal employment, which pertains to individuals engaged in informal jobs. The International Labour Organization (ILO) defines informal employment using an enterprise-based approach, focusing on the characteristics of the enterprises where workers are engaged. This includes aspects like the legal status of the business and the conditions under which it operates. On the other hand, the International Conference of Labour Statisticians (ICLS) defines informal employment as a job-based concept, emphasising the nature of the job itself and the level of social protection it provides, such as health insurance, pensions, and job security.

Table 5.1: Conceptual Framework of Informal Employment

Production units by type	Job by status of employment								
	Own account Workers		Employers		Contributing Family Workers	Employees		Members of Producers' Cooperatives	
	Informal	Formal	Informal	Formal	Informal	Informal	Formal	Informal	Formal
Formal Sector Enterprise					1	2			
Informal Sector Enterprise	3		4		5	6		8	
Households	9					10			

Source: Government of India, National Commission for Enterprises in the Unorganised Sector Report (2008), Figure 2.1: Matrix on Conceptual Framework of Informal Employment, p.12.

Employment within the informal sector is characterised by the nature of the worker's workplace, often involving small or unregistered enterprises, while informal

employment is linked to the nature of the job, irrespective of the enterprise type. This distinction highlights whether workers have formal contracts and access to social security benefits, focusing more on job security and working conditions.

The conceptual framework of informal employment developed by the 15th ICLS is presented in Table 5.1. According to this conceptual framework, informal employment includes the total number of informal jobs, whether carried out in formal sector enterprises, informal sector enterprises or households during the reference period.

Hence, it includes the following types of jobs:

- ❖ Own-account workers employed in their own informal sector enterprises (Cell 3)
- ❖ Employers working in their own informal sector enterprises (Cell 4)
- ❖ Contributing family workers irrespective of whether they work in formal or informal sector enterprises (Cell 1 & 5)
- ❖ Members of informal producers' cooperatives (Cell 8)
- ❖ Employees holding informal jobs in formal sector enterprises, informal sector enterprises or as domestic workers employed in the households (Cell 2, 6 & 10)

According to the 15th ICLS, informal jobs can be defined as those in law or practice not subject to national legislation, income taxation, social protection, or entitlement to certain employment benefits such as severance pay and paid annual leave; and own-account workers engaged in the production of goods exclusively for their own final use by their own household (Cell 9), if considered employed.

The above definition of informal employment used here is based on this broad conceptual framework and includes those working in the informal sector, that is, in all unincorporated private enterprises owned by individuals or households engaged in the sale and production of goods and services, operated on a proprietary or partnership basis and with less than ten total workers, as well as domestic workers, contributing family

workers, casual day labourers and workers in the formal sector with no social security benefits provided by the employer.

Informal employment has been a focal point in discussions and policy considerations for several decades, especially in developing countries like India. Understanding and measuring informal employment is challenging due to data limitations and the diverse nature of informal work. Given its widespread and persistent presence, it is expected to continue influencing labour markets in various ways for many years. Thus, there is a need to effectively address its nature and dynamics through proactive approaches. By considering different perspectives, policymakers and researchers can better tackle the challenges posed by informality and develop more effective strategies to manage its impact on labour markets in countries like India. Therefore, in order to understand the dynamics of the informality of employment and understand the main factors contributing to its rise in the labour market, this study has made use of the informality matrix as developed by Unni& Naik, (2013).

5.3 Informality Matrix

In order to construct an informality matrix, this study adopted the definitions provided by the ILO and NCEUS for informal employment. Moreover, to ensure robustness, three additional criteria have been integrated to augment precision as proposed by Unni& Naik, (2013).

These supplementary criteria involve the lack of entitlement to paid leave, the absence of a stable long-term employment agreement, and the lack of state-backed pension benefits. Together, these criteria serve to mitigate the insecurity inherent in informal employment. The study employs these three indicators, IE1, IE2, and IE3, to measure and analyse informal employment.

- a) IE1: A worker who gets standard social protection and paid leave is a formal worker, while a worker who does not get either of the two is an informal worker (Number of indicators used: 2).
- b) IE2: A worker who gets standard social protection, paid leave and has had an open-ended regular contract/long-term fixed contract for more than one year is a formal worker, and a worker who does not get standard social protection, paid leave and a regular contract is an informal worker (Number of indicators used: 3)
- c) IE3: A worker who gets standard social protection, paid leave, has had an open-ended regular contract/long-term fixed contract for more than one year and a State-sponsored pension is a formal worker. This is the most relaxed criterion for formal employment. A worker who does not get standard social protection, paid leave, regular contract and State-sponsored pension is informal (Number of indicators used: 4). IE3 is the most stringent definition of informal employment, indicating that the proportion of informal employment would be at its lowest.

5.4 Factors affecting informality

The rise in informality within the labour market is driven by a variety of factors which is influenced by demand and supply. By examining the supply side, India's growth trajectory emerges as a pivotal driver behind the escalating informality in labour demand. Firstly, the growth strategy pursued during the planning phase laid the groundwork for this trend. Secondly, government reservation policies favouring small-scale enterprises contributed significantly. Thirdly, the profusion of federal and state labour laws, applicable solely to organized manufacturing and service sectors, exempted small-scale businesses.

Table 5.2: Informality matrix- Indicators used to define the Informal sector (IS) and Informal employment (IE) in Each Approach

Enterprise-Worker Indicators	Informal Sector		Informal Employment				
	IS-ILO	IN-NCEUS	IE-ILO	IE-NCEUS	IE-1	IE-2	IE-3
Employee							
1.1 Working in a Non-registered Enterprise							
1.2 Working in a Enterprise with < 10 workers							
1.3 Not Receiving Social Protection Benefits from Employer							
1.4 Not Eligible for Paid Leave							
1.5 Not Having Regular Contract							
1.6 No Access to State-sponsored Pension							

Source: Jeemol Unni and Ravikiran Naik

Note: 1. The Indian Factories Act for manufacturing units, the Companies Act for other, the Cooperative Societies Act, etc.

Gratuity, Employees State Insurance (ESI), Employees Provident Fund (EPF), Pension under EPF.

Open ended regular contract or long-term fixe contract for more than one year

IS_ILO: The ILO definition of informal sector.

IS_NCEUS: The NCEUS definition of the informal sector excludes workers in enterprises with 10 or more workers.

IE1: Informal as the percentage of workers not obtaining standard social protection or paid leave.

IE2: Informal as the percentage of workers not obtaining standard social protection or paid leave or regular contract.

IE3: Informal as the percentage of workers not obtaining standard social protection or paid leave or regular contract or State pension.

Consequently, these enterprises flourished, constituting 84% of all unorganized units in the non-agricultural sector, with micro firms constituting the remaining 16%. Collectively, they represented 99% of all non-agricultural units in the nation (Mehrotra, 2019).

Goa, which ranks second in terms of HDI (Bhardwaj, 2021), has 2,352 small-scale industries in the non-agricultural sector (GOG, 2021). Many of these small-scale industrial units in Goa are exempt from state regulations, leading them to operate outside the rules set by the government. Consequently, they often choose to hire workers informally, contributing to the prevalence of informal employment.

The current study aims to identify the factors contributing to the increase in informality in the labour market in Goa. The binary nature of the dependent variable results in five binary logistic regression models based on different definitions of informality with various dependent variables.

$$L: \Pr(\text{Not REG} = 1) = \beta_0 + \beta_1 \text{ Gen} + \beta_2 \text{ Age} + \beta_3 \text{ Agesq} + \beta_4 \text{ Resstat} + \beta_5 \text{ Edu} + \beta_6 \text{ Ind} + \beta_7 \text{ Firmsize} + \beta_8 \text{ Recruit} + U \quad \dots \dots \dots (5.1)$$

$$L: \Pr(\text{Abs of SocSecurity} = 1) = \beta_0 + \beta_1 \text{ Gen} + \beta_2 \text{ Age} + \beta_3 \text{ Agesq} + \beta_4 \text{ Resstat} + \beta_5 \text{ Edu} + \beta_6 \text{ Ind} + \beta_7 \text{ Firmsize} + \beta_8 \text{ Recruit} + U \quad \dots \dots \dots (5.2)$$

$$L: \Pr(\text{Abs of Soc Security \& No Paidleave} = 1) = \beta_0 + \beta_1 \text{ Gen} + \beta_2 \text{ Age} + \beta_3 \text{ Agesq} + \beta_4 \text{ Resstat} + \beta_5 \text{ Edu} + \beta_6 \text{ Ind} + \beta_7 \text{ Firmsize} + \beta_8 \text{ Recruit} + U \dots \dots \dots (5.3)$$

$$L: \Pr(\text{Abs of Soc Security \& No Paidleave \& No Openended Contract} = 1) = \beta_0 + \beta_1 \text{ Gen} + \beta_2 \text{ Age} + \beta_3 \text{ Agesq} + \beta_4 \text{ Resstat} + \beta_5 \text{ Edu} + \beta_6 \text{ Ind} + \beta_7 \text{ Firmsize} + \beta_8 \text{ Recruit} + U \quad \dots \dots \dots (5.4)$$

$$L: \Pr((\text{Abs of Soc Security} \& \text{No Paidleave} \& \text{No Openended Contract} \& \text{No StatePension} = 1)) = \beta_0 + \beta_1 \text{ Gen} + \beta_2 \text{ Age} + \beta_3 \text{ Agesq} + \beta_4 \text{ Resstat} + \beta_5 \text{ Edu} + \beta_6 \text{ Ind} + \beta_7 \text{ Firmsize} + \beta_8 \text{ Recruit} + U \quad \dots\dots\dots (5.5)$$

For equation 5.1, the dependent variable is as defined by ILO for informal employment. As per this definition, individuals working in registered firms are considered formal employees, while those working in unregistered organisations are classified as informal employees. Therefore, the dependent variable "Registration status" is assigned a value of one if the respondent works in a registered firm and zero otherwise.

Equation 5.2 aligns with the definition of informal employment provided by NCEUS. According to this definition, informal employment is identified by individuals who are not eligible for social security. The dependent variable, Eligibility for Social Security, takes a value of one if the respondent is not eligible for social security and zero otherwise. Individuals who have access to social security are considered formal workers, whereas those without access are classified as informal workers.

Equation 5.3 represents the definition of IE1. According to this definition, individuals are considered formal employees if they fulfill the criteria for social security and paid leave. Those who do not fulfill the above conditions are classified as informal employees. Thus, the dependent variables are given a value of one for individuals who are not qualified for social security and paid leave and zero for those who are not eligible for both.

Equation 5.4 depicts the model based on the IE2 definition. In this model, individuals are categorised as formal employees if they satisfy specific conditions such as eligibility for social security, entitlement to paid leave, and possession of an open-ended contract. Conversely, individuals failing to fulfill all these conditions are deemed as informal employees. Consequently, the dependent variable is assigned a value of one for

individuals meeting all these conditions (social security, paid leave, or open-ended contract), and zero otherwise.

Equation 5.5 outlines the model based on the IE3 definition. In this framework, individuals are identified as formal employees if they satisfy specific conditions such as eligibility for social security, qualification for paid leave, possession of a permanent contract, and access to the state pension. Conversely, individuals failing to meet all of the above criteria are categorised as informal employees. The dependent variable is assigned a value of one for individuals meeting all four criteria (social security, paid leave, permanent contract, and state pension) and zero for those who do not.

For all the models independent variables used are gender (Gen), age (Age), residential status (Res), years of education (Edu), industry type (Ind), firm size (Firm size), and hiring process (Recruit) to understand their influence in informality. These independent variables are identified based on an extensive review of the literature in the area.

Numerous studies suggest that gender plays a role in the prevalence of informality in the labour market (Abraham, 2017; Slonimczyk, 2014; Unni, 2020). Women are more likely than men in the same sector to participate in the informal economy. Those women engaged in informal work are often identified as the "weakest links" in global value chains. Consequently, women tend to prioritise inferior, irregular, and informal occupations. Moreover, countries with patriarchal societies have deep-seated roots in the gender-based division of labour. Traditionally, women are responsible for non-market (unpaid) domestic and care duties, which restricts their opportunities for paid employment—whether formal or informal—outside the family sphere. Due to their limited paid work experience, women frequently end up in lower-paying, precarious, and low-quality jobs when their non-market (unpaid) contributions are substantial.

Several studies have revealed that age is negatively correlated with informality. Shehu & Nilsson, (2014) pointed out in their study that the global jobs crisis has increased

youth vulnerability due to informal employment, resulting in higher rates of unemployment and lower-quality jobs. Young people are more likely to be employed informally due to a lack of skills and experience (Adeniran et al., 2020). When young people enter the labour market for the first time, employers may be reluctant to hire them on a permanent or full-time basis due to the lack of previous experience that signals potential employers of their productive potential. Young people are, therefore, faced with the decision of whether to take up precarious employment or remain unemployed indefinitely. As individuals grow older, they gain more industry experience, and hence, there are more chances that they will be absorbed for a regular job.

Various studies have indicated that there exists an inverse relation between the number of years of education and informality. From a supply-side perspective, a crucial factor contributing to the rise of informality is the quality of the workforce (Mehrotra, 2019). The education and skills possessed by workers play a significant role in reducing informal work. The International Labour Organization (ILO) has found that informality tends to decrease on a global scale as education levels increase. When individuals with relatively low education levels are not engaged in agriculture, they typically find work in traditional services, construction, or unregulated manufacturing, with only a few managing to secure formal sector jobs (Mehrotra, 2019). Research conducted by Sheikh and Gaurav, (2020) found that involvement in the informal labour market is greatly impacted by factors such as education, vocational training, and gender. They observed that individuals with lower educational levels are more inclined towards informal employment, while those with formal vocational training are less likely to engage in such work. Consequently, increasing the average level of education could promote economic growth by enhancing productivity and facilitating the dissemination of knowledge. Education emerges as a crucial policy instrument for alleviating poverty. This is because individuals with higher levels of education are generally more productive and, consequently, more attractive to employers in the job market. Education significantly contributes to the ability to transition out of informal employment.

Numerous studies have highlighted a trend where migrants who relocate to urban areas and towns in search of better job prospects often possess limited skills and education. Therefore, they find themselves engaged in informal employment, facing a range of challenges and opportunities. Economic necessity often drives migrants toward informal work due to obstacles such as language barriers, educational deficiencies, and discriminatory hiring practices (ILO, 2018b). In these informal settings, migrants are susceptible to exploitation and lack legal protections and access to social benefits (Srivastava, 2020). Nevertheless, informal employment provides flexibility and adaptability, enabling migrants to navigate uncertain circumstances and support their families. Additionally, some migrants take advantage of informal opportunities to establish businesses, relying on social networks for support (Van Hear et al., 2018). Consequently, they encounter difficulties securing stable employment in the formal sector, leading them to join the informal workforce. Despite offering low returns, this informal sector has expanded over time, serving as a buffer for these migrants.

There is well-documented evidence in the literature indicating that as firms grow larger, the extent of informality diminishes with the size of the firm (Ulyssea, 2020). In other words, the proportion of informal businesses declines significantly as a firm's size increases. As firms increase in size, their operational expenses also rise. Furthermore, the probability of detection by government authorities increases with firm size, as larger firms tend to attract more attention. Consequently, the costs associated with operating in the informal sector are likely to escalate as a firm expands in size. Larger firms may need improved access to formal credit markets or the issuance of tax documents to buyers, among other requirements.

Informality is also associated with cost-cutting strategies adopted by firms in a highly competitive environment. Firms, in order to reduce costs, try to hire workers on a contract basis. Thus, the growing level of informal employment in the formal sector is

largely due to the increased use of contract labour and the outsourcing of production (Basole et al., 2015).

The probability of informality by different definitions and its marginal effects is represented in Table 5.3. According to the definition given by ILO, number of years of education, low-skill industries such as construction, wholesale, retail trade, repairs of motor vehicles and firm size are found to be statistically significant. The number of years of education is found to be statistically significant at 1% level. Hence, with every additional year of education, the individual is, on average, 1.6 % less likely to be informally employed, holding all other variables constant. This is due to the fact that companies value highly qualified individuals for formal sector jobs due to their expertise, adaptability, precision, creativity and strong problem-solving skills. Educated workers excel at communication, collaboration and innovation, thereby increasing productivity. This preference is driven by reduced training costs and increased efficiency. Highly qualified employees often value long-term career development that benefits both themselves and the company. Ultimately, hiring well-trained employees strengthens a company's competitiveness and innovation potential and thus ensures sustainable success.

Low-skilled industries such as construction and wholesale, retail trade and motor vehicles are found to be statistically significant at 5% and 1%, respectively. Hence, an individual who works in the construction industry is, on average, 2.8% more likely to be informally employed, holding all other variables constant. Similarly, an individual who works for wholesale, retail trade and motor repair is, on average, 1.8% more likely to be informally employed, holding all other variables constant. The size of the firm in terms of the number of workers employed is found to be statistically significant at a 1% level. Hence, an individual who is working in a firm with less than ten workers is, on average, 2.1% more likely to be informally employed, holding all other variables constant.

NCEUS definition of informal employment states that, if workers do not get social security benefits from the employer, they would be counted as informal employees. According to this definition, gender, age, low skilled industries such as construction and personal services, and size of the firm are found to be statistically significant. Gender is found to be statistically significant at 5% level. Hence, an individual who is a female, is on an average, 3.2% more likely to be informally employed, holding all other variables constant.

Age of the individual is found to be statistically significant at a 5% level. As an individual grows older by one year, he/she is, on average, 1.2% less likely to be informally employed, holding all other variables constant. The age of the respondent exhibits an inverse relationship with informality, indicating that as an individual's age increases, his/her probability of engaging informally employed diminishes.

Low-skilled industries such as construction and personal work are found to be statistically significant at a 5% level. Hence, an individual who is working in the construction industry is, on average, 1.1% more likely to be informally employed, holding all other variables constant. Similarly, an individual who is working for personal services is, on average, 1.9% more likely to be informally employed, holding all other variables constant. The size of the firm in terms of the number of workers employed is found to be statistically significant at a 1% level. Hence, an individual who is working in a firm with less than ten workers is, on average, 1.6% more likely to be informally employed, holding all other variables constant. Moreover, in addition to the previously mentioned definitions of informal employment, three additional variables have been created, following the methodology employed by Unni and Naik, (2013).

According to the IE₁, gender, age, construction and personal services, size of the firm and recruitment are found to be statistically significant. Gender is found to be statistically significant at a 10% level. An individual who is a female is, on average, 1.8 % more likely to be informally employed, holding all other variables constant. Age of

the individual is found to be statistically significant at a 10 % level. As an individual grows older by one year, he/she is, on average, 1.9 % less likely to be informally employed, holding all other variables constant. The age of the respondent demonstrates a negative correlation with informality, implying that as an individual grows older, his/her chances of getting employed informally reduces.

Industries characterised by reduced skill demands, like construction and personal services, have been found to be statistically significant at the 5% level. An individual who is working in the construction industry is, on average, 3.1% more likely to be informally employed, holding all other variables constant. Similarly, an individual who is working in personal services is, on average, 1.8% more likely to be informally employed, holding all other variables. The size of the firm in terms of the number of employees in the organisation is found to be statistically significant at a 1% level. Hence, an individual who is working in a firm with less than ten employees is, on average, 2.7% more likely to be informally employed, holding all other variables constant. Recruitment of the individual is found to be statistically significant at a 1% level. Hence, an individual who is recruited by the subcontractor is, on average, 1.3% more likely to be informally employed, holding all other variables constant.

According to the IE₂ definition, the gender of an individual is found to be statistically significant at a 5% level. An individual who is a female is, on average, 2.7% more likely to be informally employed, holding all other variables constant. Age of the individual was found to be statistically significant at a 5% level. As an individual grows older by a year, he/she is, on average, 1.1% less likely to be informally employed, holding all other variables constant.

The status of residence of the individual is found to be statistically significant at a 5% level. An individual who is a migrant is, on average, 2.9% more likely to be informally employed, holding all other variables constant.

5. 3: Probability of being informal and marginal effects

Dependent Variable																				
Var	IE_ ILO	SE	t stat	P- value	IE_ NCEU S	SE	t stat	P-value	IE ₁	SE	t stat	P- value	IE ₂	SE	t stat	P- value	IE ₃	SE	t stat	P-value
Gen	.022	3.13	2.63	(.513)	.032	2.13	2.41	(.017) **	.018	1.21	1.97	(.078)*	.027	2.23	1.23	(.028) **	.026	1.78	1.21	(.032) **
Age	-.003	.036	-0.37	(.642)	-.012	.036	-0.29	(.032) **	-.019	.049	-0.16	(.051) *	-.011	.012	-0.17	(.041) **	-.011	.015	-0.12	(.047) **
Age sq	.0000 8	1.08	1.23	(.644)	.00016	1.08	3.72	(.041) **	.0001	1.01	1.50	(.067)	.000 07	1.05	1.02	(.039) **	.0007	1.03	1.03	(.048) **
Edu	-.016	.075	-0.43	(.001) ***	-.003	.057	-0.38	(.576)	.021	1.34	1.48	(.225)	.054	3.17	2.17	(.239)	-.031	2.17	1.54	(.032)* *
Res	-.013	.382	-0.77	(.442)	.105	2.10	1.47	(.213)	.061	1.42	2.08	(.687)	.029	2.17	1.77	(.047) **	.042	3.25	1.62	(.011) **
Ind Const	.028	2.41	2.47	(.027) **	.011	1.41	2.13	(.030) **	.031	1.10	2.07	(.018) **	.078	3.79	3.45	(.019) **	.061	3.65	1.82	(.071) *
Perser	.230	1.29	1.23	(.293)	.019	1.29	1.31	(.042) **	.018	1.75	1.78	(.031) **	.025	2.13	2.74	(.021) **	.301	2.51	3.07	(.105)
Pvt hh with emp per	.109	1.17	1.06	(.124)	-.191	.193	-0.37	(.158)	.038	2.41	1.42	(.419)	.049	2.89	3.01	(.315)	.051	3.99	2.05	(.213)
Other Com	-.196	.067	-0.56	(.489)	-.038	.382	-0.35	(.164)	-.174	.267	-0.27	(.321)	-.198	.088	-0.28	(.456)	-.186	.025	-0.54	(.432)
Wholesale & retail trade, rep	.018	2.71	1.35	(.001) ***	-.088	.050	-1.38	(.401)	-.063	.162	-0.17	(.642)	-.005	.011	-0.12	(.963)	-.002	.010	-0.16	(.861)

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Finser	.071	3.03	2.79	(.171)	.460	2.71	2.63	(.512)	-.432	.303	-0.58	(.161)	-.357	.077	-0.56	(.076)	-.351	.045	-0.67	(.321)
Health	.185	4.21	4.62	(.120)	-.018	.530	-0.35	(.291)	-.141	.021	-0.27	(.346)	-.189	.045	-0.78	(.223)	-.179	.056	-0.45	(.221)
Pubadm	.053	3.17	3.17	(.195)	-.068	.372	-0.57	(.582)	-.184	.015	-2.39	(.263)	-.158	.032	-0.57	(.319)	-.148	.062	-0.34	(.214)
Firm size	.021	.024	0.27	(.000) ***	.016	.075	-1.28	(.000) ***	.027	.009	-0.32	(.000) ***	.018	.023	-0.23	(.000) ***	.024	.012	-0.16	(.0001) ***
Recruit	.076	2.17	4.06	(.103)	.032	2.76	1.03	(.459)	.013	2.10	1.01	(.000) ***	.019	2.54	3.15	(.003) ***	.021	2.75	2.18	(.001) ***
Cons	22.14	32.5	8.89	(.46)	49.23	2.37	7.65	(.25)	.050	2.17	2.17	(.11)	.061	3.14	2.89	(.32)	.056	3.12	1.98	(0.21)
No. of obs.	400				400				400				400				400			
LR chi ²	33.67				37.82				40.32				41.32				41.87			
Pseudo R ₂	0.2648				0.2841				0.3678				0.4571				0.5261			
Prob> Chi ₂	0.0000				0.0000				0.0000				0.0000				0.0000			

Source: Primary data

Note: # The marginal effects (dy/dx) are reported at the mean

The coefficient is reported for the constant

Standard errors are in parentheses

*** Significant at 0.01 level

**Significant at 0.05 level

Less skilled industries such as construction and personal services are found to be statistically significant at a 5% level. An individual who is in the construction sector is, on average, 7.8% more likely to be informally employed, holding all other variables constant. Similarly, an individual who is working for personal services is, on average, 2.5% more likely to be informally employed, holding all other variables constant. Firm size is represented in terms of the number of employees working in the organisation is found to be statistically significant at a 1% level. An individual who is working in a firm with less than nine employees is, on average, 1.8% more likely to be informally employed, holding all other variables constant. Recruitment is found to be statistically significant at a 1% level. An individual who is recruited through a subcontractor is, on average, 1.9% more likely to be informally employed, holding all other variables constant.

IE3 is the strictest definition of informal employment. According to this definition, gender, age, status of residence, number of years of education, individual working in construction industry, size of the firm represented in terms of the number of employees working in the organisation and recruitment are found to be statistically significant. Gender is found to be significant at the 5% level. An individual who is a female is, on average, 2.6% more likely to be informally employed, holding all other variables constant. Age of the individual was found to be statistically significant at 5% level. As an individual grows older by a year, he/she is, on average, 1.1% less likely to be informally employed, holding all other variables constant. Age shows a negative correlation with informality, suggesting that as an individual's age increases by a year, their likelihood of being informally employed decreases.

Number of years of education is found to be statistically significant at a 5% level. With every additional year of education, the individual is, on average, 3.1 % less likely to be informally employed, holding all other variables constant.

Status of residence of the individual is found to be statistically significant at a 5% level. An individual who is a migrant is, on average, 4.2% more likely to be informally employed, holding all other variables constant. Less skilled industries, such as construction services, are found to be statistically significant at a 10% level. An individual who is in the construction sector is, on average, 6.1% more likely to be informally employed, holding all other variables constant. Firm size represented in terms of the number of employees working in the organisation and is found to be statistically significant at a 1% level. An individual who is working in a firm having less than 9 employees is, on average, 2.4 % more likely to be informally employed, holding all other variables constant. Recruitment is found to be statistically significant at a 1% level. An individual who is recruited by a sub-contractor is, on average, 2.1% more likely to be informally employed, holding all other variables constant.

The above five models are used to determine the factors contributing to the rise of informality of employment in the service industry in Goa. Hence, from the above analysis, IE3 is the stricter and the best measure to capture the informality of employment. According to this model, gender, age, number of years of education, status of residence, individuals working in low-skilled industries, size of the firm, and recruitment are the main factors contributing to the rise of informality in the labour market in Goa. Hence, according to the study, women, youth, less educated workers, migrants, individuals working in low-skilled industries, firms employing less than 9 workers and recruitment through third parties are the main factors that cause informality to rise in the service industry in Goa.

5.5 Discussion of the Results

In order to determine the main reasons for the rise of informality in the labour market in Goa, the study has constructed an informality matrix based on the definitions given by ILO, NCEUS and three additional variables. According to all the definitions except ILO, gender and age were found to be the significant variables contributing to informality. Females have a higher likelihood of being engaged in informal

employment compared to males. Women's involvement in informal work is shaped by a complex interplay of social, economic, and cultural factors. Gender discrimination in formal job markets restricts access to secure employment opportunities, often pushing women toward informal work. Limited educational opportunities hinder their qualifications for formal jobs, while family caregiving responsibilities and inadequate childcare support make flexible informal work more attractive. Income inequality drives women to seek quick income sources, and resource constraints push them into small-scale informal entrepreneurship. Weak legal protections and cultural norms that prioritize family roles over formal employment further contribute to the prevalence of informal work among women, impacting their career choices and economic participation.

There exists a negative correlation between informality and the age of the individual. The negative correlation between informality and an individual's age can be attributed to several factors. As people age, they generally accumulate a wealth of experience, skills, and knowledge, rendering them more appealing to formal employers who prioritize reliability and expertise. Younger individuals, often lacking the experience and qualifications demanded by formal sectors, may turn to informal employment out of necessity. Additionally, as individuals age, they may seek greater job security, which is more commonly found in formal positions. Consequently, the likelihood of engaging in informal work typically diminishes with age as older workers gravitate toward stable, formal employment options.

When employing a stricter definition of informal employment IE3, the number of years of education of an individual has emerged as a significant factor, displaying an inverse relationship with informality. This trend is a result of companies' preference for highly educated candidates in formal sector positions, as they bring valuable qualities such as expertise, adaptability, precision, creativity, and strong problem-solving abilities. Educated workers excel in communication, collaboration, and innovation, leading to enhanced productivity. This preference is driven by reduced training costs and

increased efficiency. Highly qualified employees often prioritize long-term career growth, benefiting both themselves and the company. Ultimately, hiring well-educated staff enhances a company's competitiveness, innovation potential, and long-term success.

According to the IE2 and IE3 definitions, an individual's status of residence emerges as a significant factor contributing to the growth of informality. The study underscores that migrants are more inclined to engage in informal employment due to the complex set of challenges they face. These challenges encompass language and cultural barriers, which impede their access to formal job markets, where proficiency in the local language is often a prerequisite. Discrimination further confines them to informal sectors, where biases against migrants influence hiring decisions. Additionally, many migrants lack legal status or work permits, compelling them to seek unregulated, informal work. Economic necessity drives some to accept low-paying informal jobs to support their families. Furthermore, social networks within their communities can lead to informal job opportunities, and the flexibility inherent in informal work becomes vital for their survival in a new country.

The findings of the study indicate that informality tends to increase within low-skilled industries and the size of the firm across all definitions. This prevalence of informality in low-skilled industries can be attributed to a variety of factors. Informal networks and family ties ease entry into the informal labour market. Low-skilled industries often employ cost-cutting informal practices, like off-the-books payments and benefits avoidance. In regions with weak regulation, employers maintain informal arrangements without legal repercussions. Though low-skilled informal work may offer limited pay and benefits, it provides income stability for those lacking formal job access. Economic factors, including slow formal job growth and economic downturns, drive workers toward informality. Besides, educational disparities constrain low-skilled workers' formal employment prospects.

The prevalence of informality within small enterprises, those with less than 10 employees, primarily arises from the combination of limited resources and the complexities of regulatory requirements. These businesses often face challenges stemming from financial constraints and administrative limitations, making it economically difficult to adhere to labour laws and provide employee benefits. Negotiating the intricate landscape of labour regulations becomes overwhelming for small firms that lack the necessary expertise and manpower. Furthermore, the pull of informal labour practices, compounded by the competitive advantages they offer, may incentivize small businesses to favour informal hiring approaches.

Subcontracting frequently fosters informality within business practices. Informal networks, cost-saving measures, survival tactics, limited awareness, market demands for affordability, and weak enforcement of labour laws all exacerbate this tendency. Larger companies often subcontract to smaller, informal entities that lack formal contracts and labour protections. These informally subcontracted firms may, in turn, hire informal labour, creating a chain of informality. Companies resort to this cost-cutting strategy, perpetuating informality. Limited oversight, regulatory gaps, and tax avoidance can thrive within these relationships. Informal networks also play a significant role, and subcontracted workers often lack legal protection. The complexity of supply chains further complicates the enforcement of labour standards, contributing to informality in subcontracting arrangements.

5.6 Conclusion

In conclusion, informality in employment is a multifaceted challenge shaped by various social, economic, and regulatory factors. It frequently emerges from restricted access to formal job openings, discriminatory practices, educational inequalities, familial obligations, and diverse socio-cultural dynamics. Both migrants and small enterprises encounter difficulties that contribute to informality. Additionally, subcontracting also sustains informality within labour markets.

CHAPTER VI

FACTORS DETERMINING EMPLOYMENT VULNERABILITY IN THE LABOUR MARKET IN GOA

6.1 Introduction

Workforce vulnerability has taken centre stage in the current policy debate as the economy looks for drivers of inclusive growth with the aim of protecting people from adverse working conditions. Despite the high economic growth that the Indian economy has experienced for almost three decades, a vast majority of the working population relies on the informal economy to earn their livelihood. Informal employment is characterized by low wages, precarious working conditions, lack of social protection and, in extreme cases, dependence on daily income for subsistence (Chen, 2006; ILO, 2018a). In 2017-18, around 52 per cent of workers were self-employed (mainly own-account workers, unpaid family workers and small employers), 25 per cent were employed in casual work as day labourers and 23 per cent were employed in regular salaried work (Kesar et al., 2020a). While casual work is particularly precarious, even among regular employees, 71 per cent did not have a written employment contract (Kesar et al., 2020). Informal workers are particularly vulnerable because they lack formal contracts and legal protection, and these workers have no access to social security, which exposes the workers to job insecurity, low wages and poor working conditions. As a result, these workers, who frequently operate outside government regulations, are vulnerable to exploitation, precarious conditions, and inequality, which in turn exposes them to economic shocks and job insecurity (Siddiq & Sharif, 2023).

This chapter is divided into two parts. The first part discusses factors contributing to vulnerability among informal workers in the labour market in Goa, and the second part analyses the impact of a pandemic on the informal workers in Goa. To identify the factors contributing to employment vulnerability in the labour market, a vulnerability index is constructed by summing the social insecurity index and the job insecurity

index. The social insecurity index comprises three dichotomous variables, and the job insecurity index comprises six dichotomous variables. Further, in order to identify how much each of these independent variables contributes to overall vulnerability, Shapley Owen's Decomposition methodology has been adopted. To analyse the impact of the pandemic on the informal workers the study has made use of 6 binary logistic regression.

6.2 Vulnerable Employability Index

Informal work is frequently characterized by the "3 Ds": dirty, dangerous, and difficult, with workers typically receiving low pay. Despite these conditions, both workers and economic units engaged in informal employment contribute significantly to economic and social development through a variety of activities. However, these contributions are neither protected nor regulated, often going underrecognized and undervalued. Workers in the informal sector operate under vulnerable conditions, lacking formal work arrangements, social protection, and safety nets to shield them from economic shocks. This type of employment is typically marked by inadequate earnings, low productivity, and challenging working conditions that violate workers' fundamental rights, increasing their risk of falling into poverty (World Bank, 2022).

According to the World Bank report in 2022, the rate of vulnerable employment in India was 78% for women and 72.6% for men (World Bank, 2022). Informal sector workers, especially those on the periphery, are particularly susceptible to economic downturns even in prosperous times (Doane, 2003; Mehrotra, 2019). Since social security systems are linked to formal employment, informal sector employees are not covered by policies such as unemployment benefits, disability insurance, and pensions (ILO, 2016). A study by Bocquier et al., (2010), utilizing a multidimensional vulnerability index, found that workers in the informal sector faced significantly higher levels of vulnerability compared to those in the formal sector. Additionally, Kumar and Srivastava (2021) highlighted that female workers in the informal sector are especially impoverished and vulnerable.

Chapter V has examined the elements of informality in the service industry of Goa. The main factors contributing to informality were analysed by constructing an informality matrix, based on definitions given by ILO and NCEUS. Informality is the main cause leading to the vulnerability of the workers. Hence, this chapter aims to identify the factors leading to employment vulnerability in the labour market in Goa by presenting the work characteristics of the respondents, followed by the construction of a vulnerability index.

Table 6.1 shows the work-related characteristics of the respondents. It is clear from the table that out of the 400 respondents surveyed, 46.5% worked in an organization with 10 or more employees, and 53.5% of the respondents worked in an organization with less than 10 employees. Regarding the place of work, 41.5% of respondents worked in a conventional place, whereas 58.5% of respondents did not have a fixed place at work. 32.8% of workers have open-ended employment contracts lasting more than one year, while 67.2% of workers have an employment contract lasting less than one year.

In terms of employment status, 32.7% of workers have a steady job, while 67.3% of workers work on a seasonal basis. The findings of the study also revealed that 27.3% of workers were directly employed by the company, while 72.7% were hired via third-party entities like subcontractors. It is revealed from the study that 29.2% of employees work in organizations where the company provides advance notice before terminating an employee, whereas 70.8% of employees are terminated without prior notice. In terms of social security benefits, 27.3% of the respondents believe that they are entitled to it, whereas 72.7% of the respondents are not eligible for such benefits. Regarding employee benefits, 26% of respondents have access to casual leave, while 74% of respondents have no access to such benefits. Further, only 7.3% of respondents are entitled to medical leave, while 92.7% of respondents are not entitled to sick leave.

Table 6.1 Work place characteristics of the sample respondents

Sr. No	Workplace characteristics	Categories	No. of Respondents	Percentage
1.	Size of employment (Number of workers)	10 and above	186	46.5
		Less than 10	214	53.5
2.	Place of work	Conventional Place	166	41.5
		Others	234	58.5
3.	Type of contract	Open ended, more than one year	131	32.8
		Less than one year	269	67.2
4.	Job status	Steady job	131	32.7
		Seasonal/ casual/ part time worker	269	67.3
5.	Recruitment	Company	109	27.3
		Third party	291	72.7
6.	Advance dismissal notice	Yes	117	29.2
		No	283	70.8
7.	Social security benefits	Yes	109	27.3
		No	291	72.7
8.	Casual leave	Yes	104	26
		No	296	74
9.	Medical leave	Yes	29	7.3
		No	371	92.7

Source: Primary data

For the purpose of defining and measuring vulnerability, this study has used the vulnerability index developed by Naik &Unni, (2013). According to this definition, vulnerability signifies the absence of job and social security and is characterized in terms of nine dichotomous variables. These are size of establishment, place of work,

type of contract, employment status, recruitment, and notice of dismissal collectively represent the element of job security, whereas entitlement to social security benefits, casual leave benefits, and sick leave benefits collectively represent social security. The aggregate of these nine factors is used to determine the overall level of vulnerability. Therefore, a score of 9 indicates the greatest degree of vulnerability. All these components are represented in Table 6.2. Accordingly, the vulnerability scores are given to each individual worker based on the aspects of their employment and their access to any social security benefits if they are eligible for.

Vulnerability is a dichotomous variable with two possible values, 0 and 1. A value of 1 means vulnerability, while a value of 0 means the absence of a vulnerability. For example, if the worker works in an enterprise with 10 or more workers, he or she is likely to be less at risk and, therefore, receives a score of 0, but workers employed in an enterprise with fewer than 10 workers receive a score of 1.

Job security is also influenced by workplace characteristics. Compared to employees who work in unconventional environments such as open spaces and construction sites, conventional environments such as offices and stores are believed to provide greater job security. Therefore, those who work in conventional environments are assigned a value of 0, while those who work in unconventional environments are assigned a value of 1.

Type of contract is a direct measure of job security. A long-term or regular contract is the safest, but a short-term contract is for a short period of time. So, if an individual has a long-term contract, the value assigned is 0, while for a short-term contract, the assigned value is 1. Job security is also significantly influenced by one's employment status. If an individual has a steady job, then the value assigned is 0. If the individual has a seasonal or part-time job, there is no job security, hence the assigned value is 1.

Table 6.2 Vulnerability index constructed based on Primary Data

Sr. No.	Components		Code value	Index
1.	Size of Employment (No. of workers)	10 and above	0	Job insecurity (Minimum 0 and Maximum 6)
		Less than 10	1	
2.	Place of work	Conventional Place	0	
		Others	1	
3.	Type of contract	Open ended, more than one year	0	
		Less than one year	1	
4.	Job Status	Steady job	0	
		Seasonal / casual / part time worker	1	
5.	Recruitment	Company	0	Social insecurity (Minimum 0 and Maximum 3)
		Third Party	1	
6.	Advance dismissal notice	Yes	0	
		No	1	
7.	Social security benefits	Yes	0	
		No	1	
8.	Casual leave	Yes	0	
		No	1	
9.	Medical leave	Yes	0	
		No	1	

Source: Constructed based on primary data

A person is hired either directly by the company or through a contractor. Job security is greater when a candidate is hired directly by the company, the assigned value is 0, as opposed to 1 for candidates hired by contractors. A dismissal notice also implied some level of employment stability. Employees who receive advance notice of termination from their employer enjoy greater job security than those who do not. As a result, the number 0 is assigned to people to whom the company has given advance employment termination notice and the value 1 is assigned to people to whom the company has not given advance job termination notice. Social insecurity index comprises of 3 dichotomous variables. An individual who is not eligible for social security such as ESI,

PF, etc is assigned a value of 1 and those who are eligible are assigned a value of 0. Similarly, an individual, who is not eligible for casual leave is assigned a value of 1 and those who are eligible for casual leave is assigned a value of 0. An individual who is not eligible for medical leave is assigned a value of 1 and those who are eligible is assigned a value of 0.

To calculate the degree of vulnerability of a worker, a vulnerability index is created using the above components. Job insecurity and social insecurity are the two building blocks that make up the vulnerability index. The Vulnerability Index ranges from 0 to 9. It consists of two parts: a social insecurity index with a range of 0 to 3 and a work insecurity index with a range of 0 to 6. All three indices are normalized and have a value ranging from 0 to 1.

In order to study the extent of social insecurity, job insecurity and vulnerability of the worker, a multiple regression model is estimated. The main objective of this model is to understand the factors that contribute to social insecurity, job insecurity and vulnerability. The social insecurity index is constructed using three dichotomous variables, namely eligibility of social security, casual leave and medical leave, job insecurity index is constructed using six dichotomous variables, namely the number of employees in the organization, place of work, type of contract, job status, the recruitment process and the employer's termination notice and the vulnerability index is the summation of social insecurity index and job insecurity index. Social insecurity index, job insecurity index and vulnerability index are dependent variables. The factors that are considered as positive determinants of social insecurity index, job insecurity index and vulnerability index are as follows: gender of the respondent (Gen), age of the respondent (Age), number of years of education (Edu), residential status of the respondent (Resstat), sector in which the respondent works (Sec) and the status of the company the individual works in (Comp). These factors are included in the following model for estimation. There are three regression models used with the same independent variables which are specified in model 6.1

The regression equation for social insecurity index is expressed as follows:

$$Y1 = \beta_0 + \beta_1 \text{ Gen} + \beta_2 \text{ Age} + \beta_3 \text{ Agesq} + \beta_4 \text{ Edu} + \beta_5 \text{ Resstat} + \beta_6 \text{ Sec} + \beta_7 \text{ Comp} + U \quad \text{..... (6.1)}$$

where,

Y1	= social insecurity index
β_0	= Constant or intercept term
$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ and β_7	=Parameters to be estimated
Gen	= Gender of the respondent
Age	= Age in years
Age sq	= Age square
Edu	= Number of years of education
Res	= Residential status of the respondent
Sec	= Sector of employment
Comp	= Type of company
u	= Error term

The regression equation for job insecurity index is expressed as follows:

$$Y2 = \beta_0 + \beta_1 \text{ Gen} + \beta_2 \text{ Age} + \beta_3 \text{ Agesq} + \beta_4 \text{ Edu} + \beta_5 \text{ Resstat} + \beta_6 \text{ Sec} + \beta_7 \text{ Comp} + U \quad \text{..... (6.2)}$$

where, Y2= job insecurity index

The regression equation for vulnerability index is expressed as follows:

$$Y3 = \beta_0 + \beta_1 \text{ Gen} + \beta_2 \text{ Age} + \beta_3 \text{ Agesq} + \beta_4 \text{ Edu} + \beta_5 \text{ Resstat} + \beta_6 \text{ Sec} + \beta_7 \text{ Comp} + U \quad \text{.....(6.3)}$$

where, Y3= vulnerability index

It is hypothesized that the social insecurity index, job insecurity index and vulnerability index are higher for females as compared to males. Females often find themselves in traditional, unstructured work settings due to factors like limited technical skills,

illiteracy, and fewer opportunities for skill development. They tend to stick to conventional roles that support family needs while men pursue education and better positions. When new career opportunities emerge, men are quicker to seize them. Women prioritize family responsibilities, making their income less crucial than for men. Consequently, they often engage in informal employment, lacking eligibility for social security benefits.

Previous studies have indicated that the social insecurity index, job insecurity index, and vulnerability index decrease as age increases. This is due to the fact that as individuals age, they typically accumulate more skills and work experience. This experience often makes them more competitive in the formal job market, where employers may value expertise and reliability. This can lead older workers to prefer or secure formal employment over informal arrangements who do not have access to social security (Adeniran et al., 2020; OECD/ILO, 2019).

There is ample evidence in the literature indicating that as the number of years of education increases, the social insecurity index, job insecurity index, and vulnerability index tend to decrease. Education is crucial for accessing better job opportunities and reducing unemployment, job insecurity, and social insecurity. Human capital theory suggests that employers view education as an indicator of future productivity and trainability. Lower education attainment lowers an individual's rank in the labour queue. Hence, in any country, the larger the relative supply of people with higher educational qualifications, the lower the probability for less educated workers to be hired. Consequently, better-educated workers increasingly displaced less-educated workers so that the latter end up in poorer jobs or are pushed out of the labour market (Gesthuizen & Solga, 2014; A. Sparreboom, 2014).

It is hypothesized that the social insecurity index, job insecurity index and vulnerability index for migrants are higher as compared to non-migrants. Migrants migrate to urban cities and towns in search of better job opportunities. In the absence of formal job

opportunities, these people end up taking informal work with low wages, poor working conditions and lack of social security (Bazillier & Boboc, 2016; Raja et al., 2013; Sengupta, 2013).

In addition, it is predicted that workers working informally in the informal sector will have a higher social insecurity index, job insecurity index and vulnerability index as compared to those working informally in the formal sector. Jobs in the informal sector are frequently characterized by their transient nature, lack of stability, and lower wages. Since many jobs in the informal sector lack legal employment contracts, it can be challenging for employees to exercise their rights and benefits. Enforcing social security contributions and benefits is more challenging in the absence of formal contracts (OECD/ILO, 2019).

It is assumed that workers working in public sector companies have less social insecurity, job insecurity and overall vulnerability as compared to workers working in the private sector. Public sector jobs are directly or indirectly supported by government funding, which can provide a level of stability as compared to jobs in the private sector. As a result, workers who work in the public sector have more access to social security as compared to workers who work in the private sector.

The regression model is then estimated using the classical OLS (Ordinary Least Squares) method. The results of the regression model are presented in Table 6.3. Model 1 represents the social insecurity index, model 2 represents the job insecurity index and Model 3 represents the vulnerability index.

The estimation results pertaining to model 1 (Equation 6.1) show that the coefficient of gender is statistically significant at a 5% level. If the individual is a female, the social insecurity index is expected to be higher by 0.29. In other words, the social insecurity index for females is higher as compared to males.

The coefficient of age of the respondent is found to be statistically significant at a 5% level. The age of the respondent is found to have a negative impact on the social insecurity index. If the respondent grows older by a year, the social insecurity index is expected to decrease by 0.10. in other words, the older the individual, the lesser the social insecurity index.

The coefficient of the number of years of education is statistically significant at a 1% level. The number of years of education is found to have a negative impact on the social insecurity index. With every additional year of education of the respondent, the social insecurity index is expected to decrease by 0.09. This means that if the individual is more educated, lesser will be the social insecurity index.

The sector of employment of the respondent is found to be statistically significant at a 5% level. If the respondent works in the informal sector, the social insecurity index is expected to be higher by 0.27. This means the workers working informally in the informal sector have higher social insecurity as compared to workers working informally in the formal sector. Two of the explanatory variables, namely status of residence and type of company, are not found to be statistically significant.

Model 1, which indicates the social insecurity index, has been corrected for heteroskedasticity, and robust standard errors were reported. The adjusted R squared is 0.469, which is acceptable considering the fact that the data used for the analysis is cross-sectional data. The model fits well since 46.9 % of the variation in the dependent variable is explained by the explanatory variables. The F-value is 32.41 and the p-value to obtain an F-value of 32.41 or greater is zero. This shows that all independent variables together determine the dependent variable, and the model is a perfect fit to explain the dependent variable.

The estimates of Model 2 (Equation 6.2) represent the job insecurity index which consists of 6 dichotomous variables. For job insecurity, the coefficient of age of the

respondent is found to be statistically significant at a 5% level. The age of the respondent is found to have a negative impact on the job insecurity index. If the respondent grows older by a year, the job insecurity index is expected to decrease by 0.22. In other words, the older the individual, the lesser the job insecurity index.

The coefficient of the status of residence is found to be statistically significant at a 5% level. If the respondent is a migrant, the job insecurity index is expected to be higher by 0.86. In other words, the job insecurity index for migrants is higher as compared to non-migrants

The coefficient for the sector of employment is found to be statistically significant at a 10% level. If the respondent works in the informal sector, the job insecurity index is higher by 0.50. In other words, the job insecurity index for workers in the informal sector is higher as compared to the formal sector. Three of the explanatory variables, namely gender, number of years of education and the type of company the respondent works are not found to be statistically significant.

The model has been corrected for heteroskedasticity and robust standard errors were reported. The adjusted R squared is 0.213, considering the fact that the data used for the analysis is cross-sectional data. For this model, 21.3 % of the variation in the dependent variable is explained by the explanatory variables. The F-value is 6.75 and the p-value to obtain an F-value of 6.75 or greater is close to zero. This shows that all independent variables together determine the dependent variable.

Equation 6.3 represents Model 3, which indicates the vulnerability index. The vulnerability index is the sum of the social insecurity index and the job insecurity index. A total of 9 dichotomous variables makes up the vulnerability index. Five variables are found to be significant for the vulnerability index, namely gender, age, number of years of education, status of residence of the respondent, and sector of employment of the respondent. The coefficient of gender was found to be statistically significant at a 5%

level. If the individual is a female, the vulnerability index is expected to be higher by 0.71. In other words, the vulnerability index for females is higher as compared to males.

The coefficient of age of the respondent is found to be statistically significant at a 1% level. The age of the respondent is found to have a negative impact on the vulnerability index. If the respondent grows older by a year, the vulnerability index is expected to decrease by 0.32. In other words, the older the individual, the lesser the vulnerability index.

The coefficient of the number of years of education is statistically significant at a 5% level. The number of years of education is found to have a negative impact on the vulnerability index. With every additional year of education of the individual, the vulnerability index is expected to decrease by 0.06. This means that if the individual is more educated, he will be less vulnerable in the labour market.

The coefficient of the status of residence is found to be statistically significant at a 5% level. If an individual is a migrant, the vulnerability index is expected to be higher by 0.87. In other words, the vulnerability index for migrants is higher as compared to non-migrants.

The coefficient for the sector of employment is found to be statistically significant at the 5% level. If the respondent works in the informal sector, the vulnerability index is higher by 0.78. In other words, the vulnerability index for workers in the informal sector is higher as compared to the formal sector. One explanatory variable, namely the type of company the respondent works, is not found to be statistically significant.

The model has been corrected for heteroskedasticity and robust standard errors were reported. The adjusted R squared is 0.432, which is acceptable considering the fact that we have used cross-sectional data. The model fits well since 43.2 % of the variation

in the dependent variable is explained by the explanatory variables. The F-value is 12.57 and the p-value to obtain an F-value of 12.57 or greater is practically zero. This shows that all independent variables together determine the dependent variable, and the model fits well for the data.

6.3 Shapley-Owen Decomposition Methodology

When creating a multiple regression model, it is important to understand how much each independent variable contributes to the model. One way to do this is to decompose the R-square using the Shapley-Owen Decomposition.

If $x_1, x_2, \dots, x_k$ represent the independent variable and y is the dependent variable, then the partial R-square for variable x_j can be calculated by

$$R_j^2 = \sum_{T \subseteq V - \{x_j\}} \frac{R^2(T \cup \{x_j\}) - R^2(T)}{k \cdot C(k-1, |T|)}$$

where $V = \{x_1, x_2, \dots, x_k\}$ and $|T|$ = the number of elements in some subset T of V . Also, $R^2(T)$ = the R-square value for the regression of the independent variables in T on y .

Therefore, in order to know the contribution of the independent variables to social insecurity, job insecurity and overall vulnerability, the Shapley Decomposition methodology is used in the study.

The regression-based decomposition of sources that contribute to the variability of vulnerability is presented in Table 6.4.

Table 6.3: Determinants of Vulnerability

Explanatory variables	Dependent Variable (Coefficients)											
	Model 1 Social Insecurity	Robust S.E.	t Stat	P value	Model 2 Job Insecurity	Robust S.E.	t Stat	P value	Model 3 Vulnerability	Robust S.E.	t Stat	P value
Constant	5.032	2.82	6.18	0.00	7.028	3.27	4.79	(0.001)	12.060	4.63	7.89	(0.000)
Gen	.29	0.65	2.17	0.01 **	.41	2.13	5.62	(0.10)	.71	1.62	6.12	(0.01) **
Age	-.10	0.90	-1.73	(0.02) **	-.22	4.72	-4.16	(0.02) **	-.32	0.89	-1.23	(0.005) ***
Agesq	-.0008	1.76	0.13	(0.13)	.002	1.77	0.23	(0.05) *	-.003	0.51	-1.88	(0.03) **
Edu	-.09	0.15	-0.46	(0.00) ***	.03	2.13	3.17	(0.25)	-.06	0.32	-2.37	(0.04) **
Res	.01	0.74	0.66	(0.93)	.86	7.41	7.28	(0.005) ***	.87	0.97	5.14	(0.01) **
Sec	.27	3.04	1.23	(0.03) **	.50	6.23	4.64	(0.07) *	.78	2.34	6.23	(0.01) **
Comp	-.04	2.17	-0.21	(0.76)	-.12	4.14	7.85	(0.70)	-.17	1.33	-0.14	(0.66)
No. of observations	400				400				400			
F value	32.41				6.75				12.57			
P-value(F)	0.000				0.000				0.000			
R-squared	0.431				0.242				0.457			
Adjusted R-squared	0.469				0.213				0.432			

Note: Robust standard errors are in parentheses, *Significant at 0.10 level, **Significant at 0.05 level, ***Significant at 0.01 level

Table 6.4 reveals that individual characteristics explain 18.93% of social insecurity, 12.24% of job insecurity and 27.13% of overall vulnerability. Firm characteristics explain around 4.25% of the variation in overall vulnerability, 3.20% in job insecurity and 13.66% in social insecurity. The status of residence (migration status) explains around 2.19 % of vulnerability, 6.26% of job insecurity and 4.15% of social insecurity. The sector of employment also contributes to 12.13% of overall vulnerability, 2.5% to job insecurity and 6.36% to social insecurity. About 54.3% of the variation remains unexplained by the factors that we have considered. Similar results were also found in the studies on Employment Vulnerability in the urban labour market in India (Unni & Naik, 2013).

Table 6.4: Shapley-Owen Decomposition of Factor Contributions to Vulnerability (%)

Variables	Vulnerability	Job insecurity	Social insecurity
Individual characteristics*	27.13	12.24	18.93
Firm characteristics**	4.25	3.20	13.66
Residence status (Migration)	2.19	6.26	4.15
Sector of Employment***	12.13	2.5	6.36
Residual	54.3	75.8	56.9
Total	100	100	100

Note: *Age, Gender, Number of years of education

** Public or private company

***Formal or informal

Source: Authors calculation based on primary data

As the study has highlighted that there are several factors that contribute to vulnerability. The COVID-19 pandemic, which was one of the Global crises, made these workers more vulnerable. Hence, in order to identify the impact of the pandemic on these vulnerable groups of workers, a study was conducted comprising 250 respondents who were impacted on account of the pandemic across two districts of Goa, namely North Goa and South Goa. A total of three Talukas were selected from each of the two districts, namely North Goa and South districts. The chosen talukas from North

Goa were Tiswadi, Bardez, and Sattari, and from South Goa were Salcete, Mormugao, and Sanguem. 125 respondents were from North and 125 respondents were from South Goa. From North Goa, 45 respondents were from Tiswadi, 40 from Bardez, and 35 were from Sattari. From South Goa, 39 were from Salcete, 42 were from Mormugao, and 44 were from Sanguem.

Table 6.5 reveals the profile of the informal workers who were affected on account of the COVID-19 pandemic. Out of 250 respondents who were interviewed, 51% were male and 49% were female. 24.8% of the respondents belonged to the age group of 35-44 years, 19.6% of the respondents were in the age group of 25-34 years, 20% of the respondents were in the age group of 45-54 years, 18% of the respondents belonged to the age group of 55 years and above, and 17.6% of the respondents belonged to the age group of 15-24 years of age. 88.5% of respondents did not have access to social security, while 11.5% of respondents had access to social security.

According to the (ILO, 2022), informality is high among workers with fewer years of education. The findings of the study revealed that the average number of years of education of the informal workers who had been affected on account of the pandemic was 6 years. Out of the 250 respondents, 62% of respondents were migrants who had migrated from other states in search of better job opportunities and 38% of respondents were Goans. In terms of sector of employment, 48% of respondents worked informally in the formal sector and 52% of the respondents worked in the informal sector. As for the employment status, 59.2% were regular or working on contractual basis, and 40.8% were daily wage workers. Among the 250 informal employees who were interviewed for the study, 69% of the respondents lost their jobs during the lockdown on account of the COVID-19 pandemic, 21% returned to work post-lockdown by September-October 2020, and 10% of the informal workers had no effect of the lockdown as they were continued in the same job with the same salary.

Table 6.5: Profile of the informal workers who were affected due to the COVID-19 pandemic

Sr. No	General Profile		No. of Respondents	Percentage
1.	Gender	Male	127	51
		Female	123	49
2,	Age	15-24 years	44	17.6
		25-34 years	49	19.6
		35-44 years	62	24.8
		45-54 years	50	20
		55+ years	45	18
3.	Eligibility of Social Security	Yes	29	11.5
		No	221	88.5
4.	Average years of education	6 years		
5.	Residential Status	Migrant	155	62
		Non migrant	95	38
6.	Sector	Formal	119	48
		Informal	131	52
7.	Employment status	Regular/ contract labour	148	59.2
		Daily wage	102	40.8
8.	Effect of Pandemic	Job loss	173	69
		Job Recovery	52	21
		No effect	25	10

Source: Primary data

In order to study the impact of the lockdown on account of the COVID-19 pandemic, the respondents were categorized into pre-pandemic and post-pandemic groups to assess the impact of the pandemic-induced lockdown. The pre-lockdown period, serving as the baseline, comprised individuals who were in the workforce as of February 2020. The post-lockdown sample consisted of those affected by lockdowns in April-May 2020 and September-October 2020. Comparing the findings from the post-pandemic period to the baseline allows for estimating the degree of job loss and recovery during the pandemic compared to normal conditions. Consequently, individuals employed before the lockdown faced three potential employment scenarios based on their status during the subsequent periods: lockdown in April-May 2020 and post-lockdown in September-October 2020.

- I. No effect: Individuals following this trajectory remain employed during the lockdown and post-lockdown with the same salary.
- II. No recovery: These individuals who lost their jobs during the lockdown and continue to be out of the workforce post-lockdown.
- III. Recovery: These individuals who had either lost their job or have got a break in service during the lockdown but are able to return to work post-lockdown.

In this study, an individual is identified as ‘unemployed’ if the individual has lost work during the lockdown (conditional on being employed before the lockdown); irrespective of whether they have reported themselves as available or willing to work subsequently.

Since this study has restricted only to those individuals who were in the workforce before the lockdown, i.e. January -February 2020 and have interviewed only these individuals during and post-lockdown, this sample is called a trajectory sample

The study has made use of six binary logistic regression models to understand the impact of lockdown which was imposed on account of the COVID-19 pandemic on informal employment in Goa. Binary logistic regression is used because the dependent variable is binary or categorical in nature, and it takes only two possible outcomes. In the first binomial logistic regression, the outcome variable is the likelihood of overall job loss with a categorical dependent variable that takes the value one if the individual has lost his/her job either during the lockdown (April- May 2020) or post the lockdown (September-October 2020 and zero otherwise.

The binary logistic model for Model 1 is as follows:

$$L: \Pr (\text{OVERALL JOB LOSS} = 1) = \beta_0 + \beta_1 \text{socsec} + \beta_2 \text{gen} + i. \beta_3 \text{age} + \beta_4 \text{resstat} + \beta_5 \text{sec} + \beta_6 \text{edu} + \beta_7 \text{emp} + u \quad \dots\dots\dots (6.4)$$

For the second binomial logistic regression model, the outcome variable is the estimated job loss for those informal employees, working in either the formal or informal sectors, who either lost their job or had a break in service during the lockdown, and the likelihood of their not getting a job in the post lockdown period and zero otherwise.

The binary logistic model for Model 2 is as follows:

$$L: Pr (OVERALL NO RECOVERY = 1) = \beta_0 + \beta_1 socsec + \beta_2 gen + i.\beta_3 age + \beta_4 resstat + \beta_5 sec + \beta_6 edu + \beta_7 emp + u \dots\dots\dots (6.5)$$

Therefore, both the binomial logistic models estimate the probability of an over adverse job loss during the lockdown and the likelihood of not being employed in the post-lockdown period for the informal workers who are employed either in the formal or informal sector in Goa.

The findings from the table 6.6 reveals that the sector of employment is a significant variable. Therefore, the likelihood of job loss for informal workers who are employed in the formal sector and the informal sector represented separately in the third and the fourth binary logistic regression. The third binary logistic regression estimates the probability of job loss for the informal workers who are working in the formal sector and the fourth binary logistic regression estimates the probability of job loss for informal workers who are working in the informal sector.

Therefore, the binary logistic model for Model 3 is as follows:

$$L: Pr(JOB LOSS (FORMAL SECTOR) = 1) = \beta_0 + \beta_1 socsec + \beta_2 gen + i.\beta_3 age + \beta_4 resstat + \beta_5 sec + \beta_6 edu + \beta_7 emp + u \dots\dots\dots (6.6)$$

The binary logistic model for Model 4 is as follows:

$$L: Pr \square (JOB LOSS (INFORMAL SECTOR) = 1) = \beta_0 + \beta_1 socsec + \beta_2 gen + i.\beta_3 age + \beta_4 resstat + \beta_5 sec + \beta_6 edu + \beta_7 emp + u \dots\dots\dots (6.7)$$

For the fifth and the sixth models, the outcome variable is the total estimated job loss for all informal workers, working in the formal sector and in the informal sector, respectively, who either lost their job or had a break in service during the lockdown, and the likelihood of not being employed in the post lockdown period and zero otherwise.

The binary logistic model for Model 5 is as follows:

$$L: \Pr(NO \ RECOVERY \ (FORMAL \ SECTOR) = 1) = \beta_0 + \beta_1 socsec + \beta_2 gen + i. \beta_3 age + \beta_4 resstat + \beta_5 sec + \beta_6 edu + \beta_7 emp + u \dots\dots(6.8)$$

The binary logistic model for Model 6 is as follows:

$$L: \Pr(NO \ RECOVERY \ (INFORMAL \ SECTOR) = 1) = \beta_0 + \beta_1 socsec + \beta_2 gen + i. \beta_3 age + \beta_4 resstat + \beta_5 sec + \beta_6 edu + \beta_7 emp + u \dots\dots (6.9)$$

The predictor variables specified in all the models are eligibility of social security (socsec), gender (gen), age (age), residential status(resstat), sector of employment (sec), number of years of education (edu) and type of employment the individual is engaged in (emp)

In order to analyse the overall impact of the lockdown on account of the COVID-19 pandemic, the study uses two binary logistic models. The results are in terms of the marginal effects are reported in columns 1 and 2 of table 6.6.

a) Likelihood of job loss and recovery for informal workers working in the formal and informal sectors.

For model 1, the likelihood of job loss is estimated in terms of the marginal effects. The sector of employment of an individual is found to be statistically significant at a 5% level. Hence, an individual who is working in the informal sector is, on average, 15.5% more likely to lose a job during the lockdown, as compared to an informal worker working in the formal sector, holding all other variables constant. Hence, it indicates that even after controlling all the demographic variables, informal workers working in

the informal sector are more vulnerable in the labour market than those working in the formal sector during the economic crisis.

The second model estimated the likelihood of not being employed in the post lockdown period, having lost the job during the lockdown. Here again, there is a significant difference between workers working in the formal and informal sectors. The sector of employment is found to be statistically significant at 1% level. Hence, an individual working in the informal sector is, on average, 17.8% more likely not to be employed, having lost employment during the lockdown as compared to informal workers working in the formal sector, holding all other variables constant. This difference remains the same even after controlling other demographic characteristics.

Workers in the informal sector were negatively impacted by the COVID-19 outbreak because they lacked the safety net that comes with formal sector employment. Because these informal workers lack other means of support during economic shocks, a prolonged loss of livelihood and a slow rate of revival have made their lives even more difficult.

b) Correlates of Job loss and no job recovery for workers working informally in the formal and informal sectors.

The first model estimated how the likelihood of job loss vis-a-vis not losing the job varies with different socio-demographic characteristics separately for informal workers working in formal and informal sectors. For the first model, the dependent variable is a categorical variable which takes the value 1 if the individual has lost the job and zero if they have not. The second model estimates, conditional upon job loss, how the likelihood of not getting a job vis-a-vis getting a job varies with different characteristics, again separately for workers working informally in the formal and informal sectors in Goa. The dependent variable takes the value 1 if the likelihood of the individual of not being employed due to job loss during the lockdown and zero otherwise. The results are reported in terms of marginal effects in columns 3 to column 6 of Table 6.6.

i) Eligibility for Social Security

According to the NCEUS, any worker eligible for social security is a formal worker, and those who are not eligible are termed informal employees. Eligibility for social security is one of the fundamental rights of every worker. However, not all employees are eligible for social security. Previous studies have indicated that informal workers working in the informal sector have no access to social security, making them highly vulnerable when there is an economic crisis in the country. However, in terms of overall job loss, there is no significant difference between job loss and eligibility for social security. Similarly, in terms of overall recovery, there is no significant difference between no recovery and eligibility for social security. Workers in the informal sector are not eligible for social security; hence, marginal effects cannot be computed.

In terms of recovery, there is no significant difference between the no recovery and eligibility for social security for workers in the formal sector.

ii) Gender

In terms of job loss, the study indicated that females working informally in either in the formal and informal sectors are more likely for job loss than males during the lockdown (Chakraborty, 2020b; Chauhan, 2021; Sumalatha et al., 2021).

At a 1% significance level, an individual who is a female is, on average, 14.6 % more likely to lose a job as compared to males, holding all other variables constant. At a 5% significance level, an individual who is a female and is working informally in the formal sector is, on average, 18.7% more likely to lose a job than males, holding all other variables constant. Similarly, at a 10% significance level, an individual who is a female and working in the informal sector is, on average, 7.4% more likely to lose a job during the pandemic as compared to males, holding all other variables constant. Women were worst affected on account of the lockdown, irrespective of whether they were working informally either in the formal or informal sectors. Women are overrepresented in

certain sectors that are severely impacted by the pandemic, and employers find it easier and less expensive to fire these employees (ILO, 2021; Kesar et al., 2021). In addition, because so much of the work done by women is unseen and they typically have informal employment arrangements, females are typically employed in the lowest-paying positions. Therefore, these positions are frequently the first to be eliminated by companies during economic downturns.

In terms of getting employed in the post-lockdown period, women have been hardest hit compared to men both in the formal and informal sectors. The findings of the study revealed that at a 1% significance level, an individual who is a female is, on average, 15.5 % more likely to not be employed in the post-lockdown period, as compared to men, holding all other variables constant. Similarly, at a 5% significance level, an individual who is a female and working in the formal sector was, on average, 17.1 % more likely to not be employed in the post-lockdown period as compared to men working in the same sector, holding all other variables constant. At a 5% significance level, an individual who was a female and was working in the informal sector was, on average, 10.7% more likely not to get a job as compared to their male counterpart, working in the same sector holding all other variables constant. Women have caregiving responsibilities. Field evidence has indicated that most of this demand fell to women, depriving themselves of availability in the labour market.

iii) Age

The study has analysed the differences in job loss in terms of various age categories. Workers working informally, irrespective of various age groups, were affected on account of the COVID-19 pandemic (Nath et al., 2023b). The findings of the study revealed that at 5% significance level, an individual belonging to the age group of 15 to 24 years was, on average, 20.2% more likely to suffer job loss as compared to the base category (54+ years), holding all other variables constant. At a 10% significance level, an individual who belongs to the age group of 25-34 years was, on average, 13.6% are more likely to lose a job as compared to the base category (54+ years), holding all

other variables constant. Similarly, at 10% significance level, an individual belonging to the age group of 35-44 years was, on average, 12.4% more likely to lose a job as compared to the base category (54+ years), holding all other variables constant.

Within sectors, individuals working informally in the formal sector were more likely to lose their jobs as compared to those working in the informal sector across various age groups. At a 1% significance level, an individual working informally in the formal sector and belonging to the age category of 15-24 years was, on average, 51.4% more likely to lose the job as compared to other age groups, holding all other variables constant.

At a 5% significance level, an individual who is working informally and belonging to the age category of 25-34 years is, on average, 34.7% more likely to lose a job, holding all other variables constant. This is because even prior to the pandemic, large sections of the youth population were socially and economically disadvantaged, and they were mostly employed in informal work, earning less than older adult workers, and the pandemic exaggerated their condition. (Kesar et al., 2020). The economic and social disruptions caused by the COVID-19 pandemic, and by measures to contain the spread of the virus, had a lasting effect on employment, earnings and working conditions of these young workers who are at the beginning of their careers or have not even entered the labour market yet (ILO, 2022). In terms of job loss, individuals working informally in the formal sector and belonging to the age group of 35-44 years were significant at 1% level. Therefore, individuals belonging to the age group of 35-44 years were, on average, 36% more likely to lose their jobs as compared to the base category (54+ years), holding all other variables constant. Similarly, individuals in the age category of 45-54 years working informally in the formal sector were, on average, 30.4% more likely to lose their jobs as compared to the base category (54+ years), holding all other variables constant.

Table 6.6: Marginal Effects reported at mean- for Job Loss and No Recovery, overall, and for informal workers in the formal and informal sector.

Variables	(1) Job loss Overall	(2) No job recovery Overall	(3) Job loss: Formal Sector	(4) Job Loss: Informal sector	(5) No job recovery: Formal sector	(6) No job recovery: Informal sector
	Marginal effects	Marginal effects	Marginal effects	Marginal effects	Marginal effects	Marginal effects
Sector: Informal (Base: Formal)	.155 (0.01) **	.178 (0.005) ***	-	-	-	-
Eligibility for social security: No (Base=Yes)	.067 (0.21)	.036 (0.51)	.128 (0.11)	-	.093 (0.26)	-
Gender: Female (Base: Male)	.146 (0.001) ***	.155 (0.001) ***	.187 (0.01) **	.074 (0.07) *	.171 (0.03) **	.107 (0.02) **
Age: 15-24 yrs. (Base: (55+ years)	.202 (0.01) **	.223 (0.01) **	.514 (0.00) ***	-.084 (0.30)	.516 (0.00) ***	-.025 (0.78)
Age : 25-34 years	.136 (0.09) *	.151 (0.07) *	.347 (0.01) **	-.012 (0.85)	.340 (0.01) **	.048 (0.57)
Age : 35-44 years	.124 (0.06) *	.185 (0.01) **	.360 (0.00) ***	-.083 (0.29)	.420 (0.00) ***	-.024 (0.78)
Age : 45- 54 years	.062 (0.30)	.067 (0.26)	.304 (0.00) **	-.070 (0.24)	.267 (0.02) **	-.020 (0.74)
Status of res: Migrant (Base: Non- migrant)	.197 (0.00) ***	.196 (0.00) ***	.231 (0.00) ***	.155 (0.00) ***	.222 (0.00) ***	.150 (0.00) ***
No. of years of education	-.015 (0.01) **	-.016 (0.006) ***	-.029 (0.00) ***	.002 (0.72)	-.030 (0.00) ***	-.0007 (0.90)
Emp type: Daily wage (Base: Salaried/ Contractual salaried)	.232 (0.02) **	.264 (0.01) **	.117 (0.32)	.124 (0.00) ***	.163 (0.19)	.119 (0.00) ***
Constant	.025 (0.72)	.026 (0.81)	.028 (0.17)	.025 (0.06) *	.034 (0.15)	.015 (0.08) *
LR chi2(8)	33.67	36.07	42.23	42.76	35.06	39.65
Pseudo R square	0.4639	0.4356	0.2631	0.5047	0.2174	0.4452
Observations	250	250	119	131	119	131
Pseudo R square	0.4639	0.4356	0.3284	0.5047	0.2892	0.4452

Standard errors in parentheses, *p<0.10, ** p<0.05, ***p<0.01

However, the marginal effects of job loss and the age of the workers working in the informal sector were found to be insignificant across various age groups. There is no comparable entry and retirement age for employees in the informal sector as in the formal sector. Individuals work in the informal sector as long as they are physically active and are ready to accept any job if misfortune comes their way.

Regarding overall recovery, the youth were less likely to recover from job loss due to the COVID-19 pandemic as compared to the base category across both sectors. Informal employment is the only option available for the youth when they want to enter the formal labour market for the first time. Youth lack experience and many employees are reluctant to hire them on a permanent basis due to a lack of previous experience that signals their productive potential. (Adeniran et al., 2020). At a 5% significance level, an individual who belongs to the age group of 15-24 years was, on average, 22.3% more likely not to get a job post lockdown, as compared to other age groups, holding all other variables constant. At a 10% significance level, an individual who belongs to the age group of 25-34 years is, on average, 15.1% more likely not to be employed post-lockdown, holding all other variables constant. At a 5% significance level, an individual who is informally employed and belongs to the age group of 35-44 years is, on average, 18.5% more likely not to get a job post-lockdown, holding all the variables constant.

The study also revealed no job recovery for individuals who were working informally in the formal sector was found to be significant across all age groups. At a 1% significance level, an individual who belongs to the age group of 15-24 years was, on average, 51.6% more likely not to get employed post-lockdown as compared to the base category (54+ years), holding all other variables constant. At a 5% significance level, an individual who belongs to the age group of 25-34 years was, on average, 34 % more likely not to get employed post-lockdown as compared to the base category (54+ years), holding all other variables constant. Similarly, at a 1% significance level, an individual who is working informally in the formal sector and belongs to the age group of 35-44 years was, on average, 42% more likely not to get employed post-lockdown as

compared to the base category (54+ years), holding all other variables constant. At a 5% significance level, an individual who is working informally in the formal sector and belongs to the age group of 45-54 years was, on average, 26.7% more likely not to get employed post-lockdown as compared to the base category (54+ years), holding all other variables constant. However, no significant difference found across different age groups among the workers working informally in the informal sector and getting a job post-lockdown.

iv) Status of residence

Status of residence implies whether the respondent is a migrant or non-migrant. Migrants are mostly employed in the informal economy and low-income jobs, which have been especially affected by the pandemic, and many of the migrants have lost their livelihoods due to reverse migration (ILO, 2021). In terms of overall job loss, the status of residence of an individual is found to be statistically significant at a 1% level. Hence, an individual who is a migrant was, on average, 19.7% more likely to lose a job during the lockdown on account of the COVID-19 pandemic as compared to a non-migrant, holding all other variables constant. At a 1% significance level, an individual who is a migrant and working in the formal sector was, on average, 23.1% more likely to lose a job as compared to a non-migrant working in the same sector, holding all other variables constant. At a 1% significant level, an individual who is a migrant and working in the informal sector was on an average of 15.5% more likely to lose a job as compared to a non-migrant who is working in the same sector, holding all other variables constant.

In terms of the likelihood of not being employed in the post-lockdown period, the status of residence was found to be statistically significant at a 1% level. Hence, an individual who is a migrant and working in either the formal or informal sector was, on average, 19.6% more likely to not get a job post-lockdown, holding all other variables constant. Similarly, at 1% level of significance, an individual who is a migrant and working informally in the formal sector, was on an average 22.2% more likely of not getting employed in the post lockdown period, holding all other variables constant. At a 1%

significance level, an individual who is a migrant and working in the informal sector was, on average, 15% more likely to not be employed in the post-lockdown as compared to non-migrants working in the same sector, holding all other variables constant. Migrants were among the social groups who were the hardest hit by the COVID-19 pandemic and suffered disproportionately from its social and economic consequences (Daly et al., 2020). Besides, due to reverse migration, these workers could not find jobs post-lockdown. Most of the migrants were stranded in their home states due to the closure of borders and suspension of transport facilities, and therefore, finding a job was very difficult because of the uncertainty of business.

v) Number of years of education

The study also reveals differential impact among the informal workers with different levels of education. On average, an informal worker working in the formal sector is more educated than an informal worker working in the informal sector. The mean years of education of all the informal workers working informally either in the formal or informal sector was 6.1 years. For workers working informally in the formal sector, the mean years of education was 9.8 years, while for those workers working in the informal sector was 2.8 years. For overall job loss, the number of years of education was found to have a negative impact on job loss and was statistically significant at a 5% level. Hence, with every additional year of education, an individual who was informally employed was, on average, 1.5% less likely to lose a job, holding all other variables constant. At a 1% significance level, with every additional year of education, an individual who is informally employed in the formal sector was, on average, 2.9% less likely to lose a job, holding all other variables constant. However, the marginal effects of the number of years of education and job loss were insignificant for the workers in the informal sector. Higher levels of education have long been an insulator against labour market disruptions, reducing the incidence of job loss (Daly et al., 2020). Hence, education provides a protective effect for informal workers. This is because informal workers with greater levels of education have access to more secure jobs than informal workers with low levels of education (Kumar & Srivastava, 2020).

The overall likelihood of not getting employed post lockdown and the number of years of education were found to be significant at 1% level. Hence, with every additional year of education, an individual who is informally employed either in the formal or informal sector was, on average, 1.6 % less likely not to get employed, holding all other variables constant. Similarly, for workers working informally in the formal sector, at a 1% significance level, with every additional year of education, an individual is, on average, 3% less likely not to be employed, holding all other variables constant. The number of years of education and the likelihood of not getting employed is insignificant for workers who are working in the informal sector. Education is not considered one of the important indicators to get a job in the informal sector.

vi) Type of employment

Type of employment refers to the kind of job the worker is engaged in. In terms of overall job loss, the findings of the study revealed that daily wage workers have suffered more during the pandemic as compared to others. In terms of overall job loss, employment status was statistically significant at a 5% level. Hence, an individual who is working as a daily wage earner either in the formal or informal sector was, on average, 23.2% more likely to suffer job loss, as compared to other workers, holding all other variables constant. At a 1% significance level, an individual who is working as a daily wage worker in the informal sector was, on average, 12.4% more likely to lose a job holding all other variables constant. These workers had no option to work from home, and when all the economic activities came to a halt on account of the lockdown, these workers had no option but to stay at home, resulting in loss of livelihood for millions of workers. However, job loss workers working informally in the formal sector was not found to be statistically significant. However, employment status of the workers working informally in the informal sector was found to be significant at 1% significance level. Hence, an individual who is working as a daily wage earner in the informal sector, was on an average 12.4% more likely to lose a job as compared to the base category, holding all other variables constant.

The overall likelihood of not being employed in the post-lockdown was found to be significant at a 5% level. Hence, an individual who is working as a daily wage worker either in the formal or informal sector is, on average, 26.4% more likely of not being employed post lockdown, holding all other variables constant. At a 1% significance level, an individual working as a daily wage earner in the informal sector is, on average, 11.9% more likely to not get a job post lockdown as compared to the base category, holding all other variables constant.

6.4 Chapter Summary

This research aimed to uncover the elements contributing to the vulnerability of informal workers in Goa's employment sphere. To achieve this, the researchers utilized the vulnerability index developed by Unni & Naik (2013) to define and measure vulnerability. In this study, vulnerability pertains to the absence of both job and social security, assessed through nine dichotomous variables. Job security is represented by factors like establishment size, work location, contract type, employment status, recruitment, and notice of dismissal, while social security is indicated by entitlements such as social security benefits, casual leave, and sick leave. The cumulative score of these variables determines the overall vulnerability level, with a score of 9 indicating the highest vulnerability. The study emphasizes the association between vulnerability and the lack of social and job security. Social insecurity is evaluated through three dichotomous variables - social security benefits, casual leave, and sick leave, while job insecurity is assessed using six dichotomous variables - establishment size, work location, contract type, employment status, recruitment, and notice of dismissal. The vulnerability index combines all nine dichotomous variables. To analyse the factors influencing social insecurity, job insecurity, and overall vulnerability, the study employed simple regression analysis.

When examining the job insecurity index, it was found that older age was associated with lower levels of job insecurity. Additionally, migrants and individuals employed in

the informal sector experienced higher levels of job insecurity compared to their counterparts in the formal sector.

The vulnerability index, comprising both social insecurity and job insecurity, underscores numerous factors contributing to vulnerability. Specifically, women, youth, individuals with lower levels of education, and those employed in the informal sector faced greater vulnerability. Moreover, age and years of education exhibited a negative correlation with the vulnerability index, indicating that older individuals and those with more years of education tended to experience lower vulnerability.

Through multiple regression analysis, it was revealed that all independent variables collectively influence the dependent variable, and the models were deemed to be well-suited for the dataset.

Vulnerable employment is a key indicator to assess progress towards achieving full and productive employment and decent work for all, including women and young people. Vulnerable workers often lack formal work arrangements, access to benefits, or social protection programs, and are more susceptible to economic cycles (ILO, 2013). Globally, there has been no significant improvement in this indicator over the past few decades, with vulnerable employment rates remaining above 46% in emerging economies and reaching as high as 76% in developing countries (ILO, 2018b).

The global economic crisis triggered by COVID-19 left informal workers more vulnerable to poverty, and further closures of economic activities degraded their livelihoods. The loss of income of these informal workers resulted in accrued indebtedness, which made them and their families into relative poverty. Despite a partial recovery post-lockdown period, the economic conditions of the informal workers have not drastically increased.

CHAPTER – VII

FINDINGS, CONCLUSION, AND POLICY IMPLICATIONS

7.1 Introduction

Informal work is one of the essential characteristics of the labour market, especially in developing regions. Therefore, understanding its driving factors is crucial for developing effective labour policies. This study focuses on informal employment in Goa by exploring the various aspects of informal employment and identifying the main drivers behind it. By examining the different aspects of informality, this study provides valuable insights into the factors driving informal work in the state. The findings of the study are categorized into three main sections: analysing micro determinants of informal employment from an individual perspective, identifying factors contributing to the rise of the informality of employment, in the service industry in Goa and exploring the main factors contributing to employment vulnerability in the labour market of Goa.

7.2 Chapter Summary

This research is structured into seven chapters. Chapter I is an introductory chapter that offers an overview of the informal economy, its origin and emergence, its current scenario, characteristics of informal employment, drivers of informality, review of the literature. This chapter also outlines the research problems, identifies the research questions, lists the hypothesis and research objectives, highlights the methodology used for the study, and emphasizes the importance of informal employment in the context of the Goan economy and limitations of the study.

Chapter II focused on the concepts and definitions used in the study, the evolution of the concept of informal employment at the Global and National level, and various theories related to informal employment. In addition, it also highlights several studies on the informal economy, with a particular focus on the determinants and informality

of employment, the vulnerabilities associated with informal employment, and the impact of the COVID-19 pandemic on informal employment in India. Based on the comprehensive literature review, the research gap in this area is identified, and the research problem is formulated.

Chapter III deals with a comparative analysis of informal employment in India and Goa by using secondary data available with CMIE and also provides a comprehensive overview of the impact of Covid 19 pandemic on the informal labour market of India and Goa.

Chapter IV explores the factors influencing the rise of informal employment in Goa from an individual perspective. A binary logistic model was used to test the main hypotheses. The first model analysed socio-demographic and household traits, while the second focused on workplace factors. The initial findings significances the influence of socio-demographic and household characteristics that influence individuals to undertake informal employment in Goa. The second model highlights the combination of both socio-demographic, household and workplace characteristics that influence individuals to undertake informal employment in Goa. The findings of the study suggest that the interplay of marginalisation and reinforcement theories is applicable in the state of Goa.

Chapter V investigates the factors contributing to the rise of informality within the service industry in Goa. To achieve this, the study employs an informality matrix adapted from Unni and Naik (2013) by incorporating definitions from the ILO, NCEUS, and additional definitions IE1, IE2, and IE3. Using a binary logistic model, the study identifies the primary contributors to the increase in informal employment within the service sector in Goa. Among the various definitions, IE3 is the most stringent, capturing all dimensions of informality. According to IE3, both socio-demographic and work-related factors significantly contribute to the growth of informality within the service industry in Goa.

Chapter VI analyses the factors contributing to employment vulnerability within the labour in Goa and also the impact of pandemic on informal workers in Goa. To identify the factors contributing to employment vulnerability, the study has used a vulnerability index. The vulnerability index is the summation of the social insecurity index and job insecurity index. The Social insecurity index comprises three dichotomous variables, and the job insecurity index comprises six dichotomous variables. Therefore, the vulnerability index comprises nine dichotomous variables. Regression analysis followed by Shapley Decomposition methodology is used to identify the factors contributing to vulnerability in the labour market in Goa. In order to analyse the impact of the pandemic on informal workers in Goa, the study has made use of six binomial logistic regression models.

Chapter 7 summarizes the study along with its significant findings, conclusion, and policy implications.

7.3 Major Findings of the Study

The significant findings of the study can be summarized as follows:

7.3.1 Findings- Objective 1

The study used two binary logistic regressions to examine the micro determinants of informal employment in Goa. The first model deals with the socio-demographic variables and household characteristics of the respondents. The findings of this model indicate that marginalized populations, including women, youth, migrants, those with fewer years of education, individuals who have been unemployed for longer periods, and the sector of employment of the households are more likely to engage in informal employment. Hence, an individual female is, on average, 1.1% more likely to take up informal employment, holding all other variables constant. Similarly, as an individual grows older by a year, they are, on average, 1.3% less likely to take up informal employment, holding all other variables constant. This suggests that youth are more

likely to undertake informal employment than older people. At a 5 % significant level, an individual who is a migrant is, on average, 2.5% more likely to undertake informal employment, holding all other variables constant. Number of years of education has a negative impact on an individual undertaking informal employment. The findings of the study revealed that with every additional year of education, an individual is, on average, 1.5% less likely to undertake informal employment, holding all other variables constant. Therefore, individuals with lower levels of education are more likely to engage in informal employment than those with higher education levels. An individual who is the primary breadwinner in the family is, on average, 3.1 % more likely to undertake informal employment, holding all other variables constant. Without formal job opportunities, the individual has no choice but to take up an informal job because of family responsibilities. The duration of unemployment is also one of the factors that influence individuals to undertake informal employment. The findings of the study revealed that with every additional month of unemployment, an individual is, on average, 2.2% more likely to undertake informal employment, holding all other variables constant. The sector of employment of the household head also influences individuals to undertake informal jobs. Hence, if an individual's household head works in the informal sector, he is, on average, 1.2% more likely to undertake informal jobs, holding all other variables constant. Therefore, when socio-demographic variables are considered, the findings of the study reveal that it is the marginalized population who are engaged in informal work.

However, when workplace characteristics were added to the existing model, the findings of the study revealed that not only marginalized populations but also work-related factors influence individuals to engage in informal employment. The findings for the second logistic model indicate that gender, age, status of residence, number of years of education, being the main breadwinner in the family, duration of unemployment, sector of employment of the household head, job characteristics, and low skilled industries such as hotels and restaurants, construction and personal services were found to be significant variables in influencing individuals to undertake informal

employment. Hence, at a 5% significance level, an individual who is a female is, on average, 1.9% more likely to take up informal employment, holding all other variables constant. Age has a negative impact on individuals engaging in informal jobs. The findings of the study revealed that at a 5% significance level, as an individual grows older by a year, he/she is, on average, 1.2% less likely to take up informal jobs, holding all other variables constant. Status of residence is found to be significant at 10 % level. Hence, an individual who is a migrant is on an average 1.4% more likely to engage into informal employment holding all other variables constant. An individual who is the primary breadwinner in the family is found to be statistically significant at 5% level. Hence, an individual who is the primary breadwinner in the family is , on average, 3.7% more likely to take up informal employment, holding all other variables constant. The number of years of education is found to be significant at 10% level. Hence, with every additional year of education, an individual is on an average 2.1% less likely to engage into informal employment holding all other variables constant.

Similarly, the duration of unemployment has a positive impact on individuals opting for informal jobs. The findings of the study revealed that with every additional month of unemployment, an individual is, on average, 3.4% more likely to undertake an informal job, holding all other variables constant. The sector of employment of the household head also influences individuals to undertake informal jobs. At a 5% significance level, an individual whose household head works in the informal sector is, on average, 1.1% more likely to take up an informal job, holding all other variables constant.

Job characteristics also influence individuals to undertake informal employment. At a 5% significance level, an individual who has flexible work arrangements is, on average, 1.7% more likely to undertake the informal job, holding all other variables constant. Less skilled workers get attracted to low-skilled jobs because these industries do not require any educational qualifications and the necessary skills required in the case of other occupations. Individuals working in hotels and restaurants is found to be

significant at 10% level. Hence, an individual who is working in hotels and restaurants, is on an average 2.4% more likely to engage into informal employment, holding all other variables constant. At a 5% significance level, an individual who is working in the construction industry is, on average, 2.1% more likely to take up informal employment, holding all other variables constant. Similarly, at a 5% significance level, an individual who is working for personal services is, on average, 2.9% more likely to take up informal jobs, holding all other variables constant. Therefore, the combination of socio-demographic, household and workplace characteristics influences individuals to undertake informal employment in Goa. Regarding the applicability of the theories, it is the combination of the marginalisation and the reinforcement theories that apply to the State of Goa.

7.3.2 Findings- Objective 2

The study employed an informality matrix to examine the determinants of informality in the Goa service industry. This matrix is created by incorporating definitions of informal employment given by the International Labour Organization (ILO) and the National Commission for Enterprises in the Unorganized Sector (NCEUS) and including three additional definitions to augment the existing ones. The study reveals that gender, age, limited educational attainment, respondents' residential status, engagement in low-skilled occupations, firm size, and the firm's recruitment practices are the principal drivers of informal employment. Notably, age, the number of years of education, and the size of the firm exert a negative influence on the extent of informality. The findings of the study revealed that IE3 is the strictest and the most precise definition to measure informality of employment as it tries to capture the essential elements contributing to the informality of employment in the service industry in Goa. According to this definition, the main elements contributing to informality are gender, age, number of years of education, residential status of the respondents, low-skill industries such as construction, size of the firm and the recruitment process adopted by the company.

Gender is found to be significant at the 5% level. Therefore, an individual who is female is, on average, 2.6% more likely to be informally employed, holding all other variables constant.

The age of the individual was found to be statistically significant at a 5% level. As an individual grows older by a year, he/she is, on average, 1.1% less likely to be informally employed, holding all other variables constant. Age shows a negative correlation with informality, suggesting that as an individual's age increases by a year, the likelihood of the individual being informally employed decreases. This is because as an individual grows older, he/ she is more likely to develop more skills and experience, and hence, there are fewer chances for the individual to be informally employed.

The number of years of education is found to be statistically significant at a 5% level. With every additional year of education, the individual is, on average, 3.1 % less likely to be informally employed, holding all other variables constant. The individual's status of residence is found to be statistically significant at the 5% level. A migrant is, on average, 4.2% more likely to be informally employed, holding all other variables constant.

Less skilled industries, such as construction services, are found to be statistically significant at the 10% level. An individual who is in the construction sector is, on average, 6.1% more likely to be informally employed, holding all other variables constant. The size of the firm in terms of the number of employees in the organisation is found to be significant at a 1% level of significance. Hence, if an individual is working in an organization with less than 10 workers, is on an average 2.4% is more likely to be informally employed, holding all other variables constant. Recruitment is found to be statistically significant at a 1% level. An individual who is recruited by a sub-contractor is, on average, 2.1 % more likely to be informally employed, holding all other variables constant. Hence, from the above analysis, it can be concluded that

informality in the Goa service industry is conditioned upon socio-demographic variables and work-related nominators.

7.3.3 Findings-Objective 3

To investigate the determinants of employment vulnerability in the labour market in Goa, the study has employed multiple regression analysis. The findings of the study revealed that there are several key factors that contribute significantly to social insecurity, job insecurity and overall vulnerability. The main factors contributing to the social insecurity index are gender, age, the number of years of education, and the respondent's sector of employment. The coefficient of gender is found to be significant at 5% significance level. If the individual is a female, the social insecurity index is expected to be higher by 0.29. The age of the respondent is found to have a negative impact on the social insecurity index and is statistically significant at a 5% level. Hence, if an individual grows older by a year, the social insecurity index is expected to decrease by 0.10. In other words, the older the individual, the lesser the social insecurity index.

Similarly, the number of years of education is found to have a negative impact on the social insecurity index, and the coefficient is statistically significant at a 1% level. Therefore, with every additional year of education of the respondent, the social insecurity index is expected to decrease by 0.09. This means that if the individual is more educated, he will have less social insecurity. The sector of employment of the respondent is found to be statistically significant at a 5% level. If the respondent works in the informal sector, the social insecurity index is expected to be higher by 0.27. This means that workers working informally in the informal sector have higher social insecurity than those working informally in the formal sector.

On the other hand, the main variables contributing to job insecurity are age, status of residences, and sector of employment. The coefficient of age of the respondent is found to be statistically significant at a 5% level and is found to have a negative impact on the job insecurity index. Hence, if the respondent grows older by a year, the job insecurity

index is expected to decrease by 0.22. In other words, the older the individual, the lesser the job insecurity index.

The coefficient of the status of residence is found to be statistically significant at a 1% level. If the respondent is a migrant, the job insecurity index is expected to be higher by 0.86. In other words, the job insecurity index for migrants is higher than for non-migrants.

The coefficient for the sector of employment is also found to be statistically significant at a 10% level. If the respondent works in the informal sector, the job insecurity index is higher by 0.50. In other words, the job insecurity index for workers in the informal sector is higher as compared to the formal sector.

When it comes to overall employment vulnerability, the main contributing factors are gender, age, the number of years of education, residential status, and the sector of employment of the respondent. The coefficient of gender was found to be statistically significant at a 5% level. If the individual is a female, the vulnerability index is expected to be higher by 0.71. In other words, the vulnerability index for females is higher as compared to males.

The coefficient of age of the respondent is found to be statistically significant at a 1% level and found to have a negative impact on the vulnerability index. Hence, if the respondent grows older by a year, the vulnerability index is expected to decrease by 0.32. In other words, the older the individual, the lesser the vulnerability index.

The coefficient of the number of years of education is statistically significant at a 5% level. The number of years of education is found to have a negative impact on the vulnerability index. With every additional year of education of the individual, the vulnerability index is expected to decrease by 0.06. This means that if the individual is more educated, he will be less vulnerable in the labour market.

The coefficient of the status of residence is found to be statistically significant at a 5% level. If an individual is a migrant, the vulnerability index is expected to be higher by 0.87. In other words, the vulnerability index for migrants is higher as compared to non-migrants.

The coefficient for the sector of employment is also found to be statistically significant at a 5% level. If the respondent works in the informal sector, the vulnerability index is higher by 0.78. In other words, the vulnerability index for workers in the informal sector is higher than that of the formal sector.

The study employed Shapley's Decomposition methodology to understand the individual contributions of various factors to overall vulnerability. The findings of the analysis revealed that individual characteristics explain 18.93% of social insecurity, 12.24% of job insecurity and 27.13% of overall vulnerability. Firm characteristics explain around 4.25% of the variation in overall vulnerability, 3.20% in job insecurity, and 13.66% in social insecurity. The status of residence (migration status) explains around 2.19 % of vulnerability, 6.36% of job insecurity and 4.15% of social insecurity. The sector of employment contributes to 12.13% of overall vulnerability, 2.5% of job insecurity and 6.36% of social insecurity. About 54.3% of the variation remains unexplained by the factors we have considered. Similar results were also found in the studies on Employment Vulnerability in the urban labour market in India Unni& Naik (2013)

Inorder to analyse the impact of the pandemic on informal workers in Goa, the study made use of six binomial logistic regression. The findings of the study revealed that the sector of employment of an individual is found to be statistically significant at a 5% level. Hence, an individual who is working in the informal sector is, on average, 15.5% more likely to lose a job during the lockdown, as compared to an informal worker working in the formal sector, holding all other variables constant. Hence, the informal

workers working in the informal sector are more vulnerable in the labour market than those working in the formal sector during the economic crisis.

In terms of overall job loss, the study indicated that females working informally in either the formal or informal sectors are more likely to have job loss than males during the lockdown (Chakraborty, 2020; Chauhan, 2021; Sumalatha et al., 2021). At a 1% significance level, an individual who is a female who works either in the formal or informal sector is, on average, 14.6 % more likely to lose a job than males, holding all other variables constant.

For sector-wise job loss, the study has revealed that at a 5% significance level, an individual who is a female and is working informally in the formal sector is, on average, 18.7% more likely to lose a job than males, holding all other variables constant. Similarly, at a 10% significance level, an individual who is a female and working in the informal sector is, on average, 7.4% more likely to lose a job during the pandemic as compared to males, holding all other variables constant.

The COVID-19 pandemic has impacted informal workers across various age groups. The study revealed that for overall job loss, an individual belonging to the age group of 15 to 24 years was, on average, 20.2% more likely to suffer job loss as compared to the base category (54+ years), holding all other variables constant. At a 10% significance level, an individual who belongs to the age group of 25-34 years and 35-44 years was, on average, 13.6% and 12.4% are more likely to lose a job, holding all other variables constant.

Within sectors, individuals working informally in the formal sector were more likely to lose their jobs as compared to those working in the informal sector across various age groups. At a 1% significance level, an individual working informally in the formal sector and belonging to the age category of 15-24 years was, on average, 51.4% more likely to lose the job as compared to other age groups, holding all other variables

constant. At a 5% significance level, an individual who is working informally and belonging to the age category of 25-34 years is, on average, 34.7% more likely to lose a job, holding all other variables constant. This is because even prior to the pandemic, large sections of the youth population were socially and economically disadvantaged, and they were mostly employed in informal work, earning less than older adult workers, and the pandemic exaggerated their condition. (Kesar et al., 2020b).

Individuals working informally in the formal sector and belonging to the age group of 35-44 years were significant for job loss at 1% level. Therefore, individuals belonging to the age group of 35-44 years were, on average, 36 % more likely to lose their jobs, holding all other variables constant. Similarly, individuals in the age category of 45-54 years working informally in the formal sector were, on average, 30.4% more likely to lose their jobs as compared to others, holding all other variables constant. However, the marginal effects of job loss and the age of the workers working in the informal sector were found to be insignificant across various age groups. There is no comparable entry and retirement age for employees in the informal sector as in the formal sector. Individuals work in the informal sector as long as they are physically active and are ready to accept any job if misfortune comes their way. However, job loss for individuals who were working informally in the informal sector were found to be insignificant across various age groups.

For overall job loss, the status of residence was found to be statistically significant at the 1% level. Hence, an individual who is a migrant is, on average, 19.7% more likely to lose a job during the lockdown as compared to a non-migrant, holding all other variables constant. Sector-wise, it was found that at a 1% significance level, an individual who is a migrant and working in the formal sector is, on average, 23.1% more likely to lose a job as compared to a non-migrant working in the same sector, holding all other variables constant. At a 1% significant level, an individual who is a migrant and working in the informal sector is on an average of 15.5% more likely to

lose a job as compared to a non-migrant who is working in the same sector, holding all other variables constant.

For overall job loss, the number of years of education was found to have a negative impact on job loss and was statistically significant at a 5% level. Hence, with every additional year of education, an individual who was informally employed was, on average, 1.5% less likely to lose a job, holding all other variables constant. At a 1% significance level, with every additional year of education, an individual who is informally employed in the formal sector was, on average, 2.9% less likely to lose a job, holding all other variables constant. However, the marginal effects of the number of years of education and job loss were insignificant for the workers in the informal sector.

In terms of overall job loss, employment status was statistically significant at a 5% level. Hence, an individual who is working as a daily wage earner either in the formal or informal sector was, on average, 23.2% more likely to suffer job loss, as compared to other workers, holding all other variables constant. However, job loss workers working informally in the formal sector was not found to be statistically significant. However, employment status of the workers working informally in the informal sector was found to be significant at 1% significance level. Hence, an individual who is working as a daily wage earner in the informal sector, was on an average 12.4% more likely to lose a job as compared to the base category, holding all other variables constant. These workers had no option to work from home, and when all the economic activities came to a halt on account of the lockdown, these workers had no option but to stay at home, resulting in loss of livelihood for millions of workers.

The second model estimated the likelihood of not being employed in the post-lockdown period, having lost the job during the lockdown. For this model, the sector of employment is found to be statistically significant at a 1% level. Hence, an individual working in the informal sector is, on average, 17.8% more likely not to be employed,

having lost employment during the lockdown as compared to informal workers working in the formal sector, holding all other variables constant. Since the sector of employment was found to be significant, an attempt was made to analyse the impact of the COVID-19 pandemic on other variables sector-wise. The findings of the study revealed that gender, age, status of residence, number of years of education and the type of employment the individual is engaged in are found to be significant variables.

The findings of the study revealed that at a 1% significance level, an individual who is a female is, on average, 15.5 % more likely to not be employed in the post-lockdown period, as compared to men, holding all other variables constant. Similarly, at a 5% significance level, an individual who is a female and working in the formal sector was, on average, 17.1 % more likely to not be employed in the post-lockdown period as compared to men working in the same sector, holding all other variables constant. At a 5% significance level, an individual who was a female and was working in the informal sector was, on average, 10.7 % more likely not to get a job as compared to their male counterpart, working in the same sector holding all other variables constant.

Regarding overall recovery, the youth were less likely to recover from job loss due to the COVID-19 pandemic as compared to the base category across both sectors. At a 5% significance level, an individual who belongs to the age group of 15-24 years was, on average, 22.3% more likely not to get a job post lockdown, as compared to other age groups, holding all other variables constant. At a 10% significance level, an individual who belongs to the age group of 25-34 years is, on average, 15.1% more likely not to be employed post-lockdown, holding all other variables constant. At a 5% significance level, an individual who is informally employed and belongs to the age group of 35-44 years is, on average, 18.5% more likely not to get a job post-lockdown, holding all the variables constant.

Sector-wise, the study also revealed that securing a job for individuals who were working informally in the formal sector was found to be significant across all age

groups. At a 1% significance level, an individual who belongs to the age group of 15-24 years was, on average, 51.6% more likely not to get employed post-lockdown, holding all other variables constant. At a 5% significance level, an individual who belongs to the age group of 25-34 years was, on average, 34 % more likely not to get employed post-lockdown, holding all other variables constant. Similarly, at a 1% significance level, an individual who belonged to the age group of 35-44 years and was employed informally in the formal sector was, on average, 42% more likely not to get employed post-lockdown, holding all other variables constant. At a 5% significance level, an individual who is working informally in the formal sector and belongs to the age group of 45-54 years is, on average, 26.7% more likely not to get employed post-lockdown, holding all other variables constant. However, no significant difference was found across different age groups between ages of the workers working in the informal sector and getting a job post-lockdown.

In terms of the likelihood of not being employed in the post-lockdown period, the status of residence was found to be statistically significant at a 1% level. Hence, an individual who is a migrant and working in either the formal or informal sector is, on average, 19.7% more likely to not get a job post-lockdown, holding all other variables constant. Similarly, at 1% significance level, an individual who is working informally in the formal sector is, on average, 22.2% more likely to not get employed in the post-lockdown period, holding all other variables constant. Similarly, at 1% significance level, an individual who is working informally in the informal sector is, on average, 15% more likely to not get employed in the post-lockdown period, as compared to non-migrants working in the same sector, holding all other variables constant. Migrants were among the social groups who were the hardest hit by the COVID-19 pandemic and suffered disproportionately from its social and economic consequences (ILO, 2022).

The overall likelihood of not being employed in the post-lockdown for the type of employment was found to be significant at a 5% level. Hence, an individual who is working as a daily wage worker is, on average, 26. 4% more likely of not being

employed, holding all other variables constant. At a 1% significance level, an individual working as a daily wage earner in the informal sector is, on average, 11.9% more likely to not get a job as compared to the base category, holding all other variables constant.

However, in terms of overall job loss, there is no significant difference between job loss and eligibility for social security. Similarly, in terms of overall recovery, there is no significant difference between no recovery and eligibility for social security. Workers in the informal sector are not eligible for social security; hence, marginal effects cannot be computed. In terms of recovery, there was no significant difference between the no recovery and eligibility for social security for workers in the formal sector.

7.4 Conclusions

In the light of the above findings, the study makes the following valid conclusion:

- 1) Regarding micro-level determinants of informal employment, findings from the binary logistic model show that both socio-demographic factors and workplace characteristics influence individuals to engage in informal work. Among socio-demographic factors, females, youth, individuals with minimal education, migrants, primary family breadwinners, and the unemployment duration, along with the employment sector of the household head, play significant roles in prompting participation in informal work. Initially, marginalized populations appear to resort to informal work out of necessity and for survival. However, a different scenario emerges when incorporating workplace characteristics into the model. The analysis reveals that not only marginalized individuals but also workplace attributes like flexible work options and low-skilled industries (e.g., construction) drive people to informal employment. This highlights that workplace characteristics and socio-demographic factors greatly influence individuals' choices to pursue informal work. Ultimately, a combination of socio-demographic traits and workplace attributes contribute to individuals opting for informal employment at the micro-level.

From a theoretical perspective, the dynamics of informal employment are influenced by a blend of two theories: the marginalisation thesis and the reinforcement thesis. This suggests that marginalized individuals are more likely to engage in informal employment due to limited options, but workplace characteristics also significantly influence individuals towards informal work. Therefore, not just the marginalized population but also the specific work attributes drive people into informal work.

- 2) To analyze and understand the factors contributing to informality in the labour market in Goa, the study utilizes an informality matrix introduced by (Unni and Naik, 2013). This matrix takes into account various definitions of informality, including those from the International Labour Organization (ILO) and the National Commission for Enterprises in the Unorganized Sector (NCEUS), as well as three additional definitions IE1, IE2 & IE3. The results from the binary logistic model indicate that numerous key elements influence the prevalence of informality across these definitions. Notably, gender plays a crucial role in determining informality, with women often overrepresented in informal employment due to familial responsibilities and flexible work schedules. Additionally, age is identified as a significant factor, with young individuals being more vulnerable to informal employment due to limited access to formal job opportunities, leading to a higher likelihood of engaging in informal work, possibly due to a lack of experience or formal qualifications.

Residential status also contributes significantly to the increase in informal employment. Migrants moving to cities for better job opportunities often do not possess the necessary skills for formal jobs, prompting them to rely on informal work for their livelihood. Informal employment is, therefore, widespread in industries like construction, which have a high prevalence of informal labour arrangements due to factors such as seasonal work schedules and labour-intensive duties. Additionally, the size of a company and its recruitment procedure can

significantly influence the extent of informality in a given labour market. Smaller businesses may prefer informal hiring practices, and recruitment processes that lack formality can further give rise to informality.

- 3) An analysis was conducted to identify factors leading to increased employment vulnerability in the labour market in Goa. A vulnerability index was created by merging the social insecurity index and the job insecurity index. The social insecurity index comprises of three dichotomous variables, while the job insecurity index includes six dichotomous variables, making a total of 9 variables in the vulnerability index. The study highlighted gender, low education levels, and the employment sector as key contributors to the social insecurity index. Age, residential status, and employment sector were identified as primary factors for the job insecurity index. Hence, the study indicates that vulnerability is particularly pronounced among specific demographic groups such as women, youth, individuals with lower education levels, migrants, and those in the informal sector. Further, the results from the Shapley Decomposition methodology indicate that individual factors have a more significant impact on the overall vulnerability as compared to workplace characteristics, migration status and the sector of employment of the respondent.
- 4) The COVID-19 pandemic is seen as the largest global disaster since World War II, impacting the income of informal workers and causing enormous labour market disruptions worldwide, particularly in India. Despite a partial recovery in the subsequent period, the COVID-19 pandemic has damaged the material conditions for subsistence for a large segment of the informal economy. Younger age groups, women workers, migrant daily wage workers and individuals with low levels of education who were working informally in the informal sector were the worst affected on account of the COVID-19 pandemic. The recovery aspect of these workers also seems to be unsatisfactory.

7.4 Suggestions

The analysis of the study will provide a crucial foundation for policy implications by identifying the primary factors contributing to the increase of informality in the labour market in Goa. Given that ensuring decent work for all is one of the prerequisites for attaining Sustainable Development Goals, this study will offer valuable insight into the causes of informality in the labour market in Goa. Addressing key issues contributing to the rise of informal employment will provide a better understanding of the dynamics of informality in the labour market in Goa.

1. The findings of the study highlights substantial gender disparities in informal work participation. Therefore, this research offers valuable insights into why women are overrepresented in specific segments of the informal labour market. These insights can serve as a catalyst for policymakers to develop targeted policies addressing these disparities, thus promoting gender equality.
2. The study also revealed that limited access to formal education is a crucial factor leading individuals to opt for informal employment in Goa. As a result, policymakers can implement measures to ensure equitable access to formal education for people from diverse social backgrounds. Additionally, the government should invest in various skill development programs to enhance the capabilities of informal workers, enabling them to compete effectively in the job market.
3. The government should review and update labour laws to protect the interests of informal workers in Goa who work either in the formal or informal sectors. As these workers lack social security, they were severely affected by the COVID-19 pandemic. Therefore, the Government should introduce social security benefits like ESI, PF, health insurance, maternity benefits, and retirement plans. This will ensure that these workers are safeguarded from falling into poverty during economic crises, as seen during the COVID-19 pandemic.

4. Unemployment is also one of the factors leading to the rise of informal employment. Youth who are unable to take up suitable job opportunities are forced to undertake informal jobs. Hence, policymakers need to introduce and transfer unemployment benefits to the educated unemployed until they get the right type of secured job to match their educational qualifications.
5. Most of the workers who work informally are deprived of social security benefits. Therefore, to extend social security coverage to all informal workers, policymakers should devise strategies aimed at reducing informality by ensuring that social security benefits such as ESI, PF, medical benefits, entitlement of casual leaves, and maternity benefits are extended to all individuals, regardless of the size of the firm or whether they are directly employed by the company or engaged through a subcontractor.
6. To provide old age pensions to workers in the unorganised sector, the Government of India introduced the Pradhan Mantri Shram Yogi Maan-Dhan Yojana (PM-SYM) in 2019. This scheme ensures that beneficiaries receive a monthly pension of Rs. 3000 after reaching the age of 60. The monthly contributions range from Rs. 55 to Rs. 200, based on the beneficiary's entry age. However, due to the lack of job security, these workers often struggle to consistently make these contributions, leading to their ineligibility for the pension. Thus, it is crucial to consider providing pension benefits to informal workers without requiring monthly contributions.
7. Last but not least, the Government should create a database regarding the number of workers working informally so that it is easier to target specific schemes that would benefit these workers. After creating the database, the Government would be in a position to transfer unemployment benefits to those workers who lose their jobs so that they would be able to sustain themselves and their families.

These policy implications help the Government protect the interests of informal workers who are at risk of falling into poverty during economic crises. Developing appropriate policies can align informal workers with formal ones, contributing for achieving Sustainable Development Goals.

7.5 Contribution of the Study

This study makes a significant contribution by addressing three key objectives related to informal employment in Goa. First, it identifies the micro determinants of informal employment within the state by providing a detailed analysis of the individual, household-level, and work-related factors that influence workers' engagement in informal employment. Second, the study specifically examines the determinants of informality of employment within the service industry of Goa by offering insights into why this sector which is important to the state's economy, has a high prevalence of informal employment. Third, the study also investigates the factors contributing to employment vulnerability in Goa's labour market by highlighting the socio-economic conditions that increase workers' susceptibility to unstable and insecure job conditions. By focusing on these objectives, the study not only enhances the understanding of informal employment in a regional context but also sheds light on the unique challenges faced by workers in the labour market of Goa. The findings from this study will provide valuable implications for policymakers and stakeholders, which would aim to develop a targeted intervention plan to reduce informality and enhance job security in Goa, thus contributing to broader discussions on labour market dynamics and economic development.

7.7 Future direction of the study

This study has not covered all aspects of informality within the labour market of Goa. It has mainly focused on informal employment in the Goa labour market, thus neglecting other sides of informality. A key limitation of this study is the need for comprehensive data on the number of informally employed individuals in the state, which hinders a thorough analysis of all aspects of informality.

The current study identified numerous variables influencing individuals to undertake informal employment. Yet exploring the impact of household characteristics, such as the dependency ratio and educational qualifications of the household head, on individuals involved in informal employment would provide valuable insights. This will enhance the literature in the area of informal employment. Further research can also be conducted on intra-state studies to analyse the factors leading to informality in the labour market and determine the validity of relevant theories. Due to Goa's small size, it would be beneficial to assess whether the same theories also apply to other states. This, however, is subject to the availability of relevant data.

Another aspect to consider is analysing informality sector-wise and conducting a comparative analysis to examine the factors and test relevant theories for each sector separately. Further research could explore the reasons why entrepreneurs choose to start businesses in the informal sector. Such studies could offer valuable insights into whether these entrepreneurs start their businesses out of necessity or to avoid taxes. Given Goa's emphasis on inclusive growth, addressing these issues promptly is crucial.

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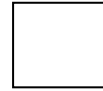
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ANNEXURE I



A STUDY OF INFORMAL EMPLOYMENT IN GOA INTERVIEW SCHEDULE

Dear Respondent,

This questionnaire is only used for academic purposes and not for any other purpose. Participants are free to express their opinions. Your confidentiality and privacy are of the utmost importance. All information collected during this study will be kept strictly confidential and will only be accessible to the research team. Your name or other identifying information will not be disclosed in the reports or publications resulting from this study. Participation in this study is completely voluntary. You have the right to refuse to participate in the study or withdraw from the study at any time, without incurring any penalties or loss of benefits to which you are entitled. Your decision will not affect your current or future relationship with the researchers or their affiliated institutions. Are you ready to fill the Questionnaire?

☐ Yes

☐ No

PART A: GENERAL INFORMATION

1) Gender:

☐ Male

☐ Female

2) Age (in years) _____

3) Marital status:

☐ Married

☐ Unmarried

☐ Divorced

☐ Widowed

4) Number of years of education _____

5) Residential Status

☐ Non-Migrant

☐ Migrant

6) Are you the primary bread winner in the family

☐ Yes

☐ No

7) How many months were you unemployed before taking up this job?

8) Number of years of education of the HH _____

9) Sector of employment of the household head

☐ Formal

☐ Informal

PART B: WORK PLACE CHARACTERISITICS

10) Are you working for a registered firm?

☐ Yes

☐ No

11) What is your work schedule?

☐ Fixed work timings

☐ Flexible work timings

12) For which industry do you work for?

☐ Hotel and Restaurants

☐ Construction

☐ Personal Services

☐ Private households with employed persons

☐ Wholesale, retail, trade, repairs of motor vehicles

☐ Financial services

☐ Health

☐ Public Administration

13) What is the nature of your employment?

☐ Contract basis

☐ Casual

☐ Part time

14) How many employees including you work in the organization?

☐ Less than 10

☐ 10 and more

14) For the present job are you eligible for social security schemes like ESI, Provident Fund or Pension Fund?

☐ Yes

☐ No

15) Where is your work place situated?

☐ Outside fixed premises

☐ Within fixed Premises.

16) What is your job status?

☐ Seasonal or casual or part-time worker

☐ Steady job

17) How did you get the job in this company?

☐ Through Sub contractor (Third party employer)

☐ Recruited directly
by the company.

18) What type of contract the company has signed with you?

☐ No contract /contract less than one year

☐ Open ended or contract
more than one year.

19) Does your employer give one-month prior notice in case any employee needs to be
terminated from his firm/ organization?

☐ No

☐ Yes

20) Are you eligible for casual leave?

☐ No

☐ Yes

21) Are you eligible for medical leave?

☐ No

☐ Yes

THANK YOU FOR YOUR COOPERATION

ANNEXURE II



IMPACT OF COVID-19 PANDEMIC ON INFORMAL WORKERS IN GOA INTERVIEW SCHEDULE

Dear Respondent,

This questionnaire is used for academic purposes only. We encourage participants to express their opinions freely. Your confidentiality is our top priority. All information collected will remain confidential and will be accessible only to the research team. Your name or any identifying details will not be included in reports or publications. Participation for this study is completely voluntary, and you may refuse or withdraw at any time without penalties or loss of benefits to which you are entitled. Your decision will not affect your relationship with the researchers or their institutions. Are you ready to fill the Questionnaire?

☐ Yes

☐ No

1) Gender:

☐ Male

☐ Female

2) Age:

☐ 15-24 years ☐ 25-34 years ☐ 35-44 years ☐ 45-54 years ☐ 55

years and above.

3) Number of years of education _____

4) Residential Status: ☐ Non-Migrant

☐ Migrant

5) Sector of employment:

☐ Formal

☐ Informal

6) What is the nature of your employment?

☐ Regular

☐ Contract

☐ Daily wage

7) For the present job are you eligible for social security schemes like ESI, Provident Fund or Pension Fund?

☐ Yes No ☐

8) Did you lose the job on account of the pandemic?

☐ Yes ☐ No

9) What was the status of the job during the Lockdown?

☐ Lost the job ☐ Was continued ☐ Got
break in service

10) Did you get the job after the lockdown?

☐ Yes ☐ No

THANK YOU FOR YOUR COOPERATION