
Working Conditions Affecting the Health of Inter-State Migrant Labour in the Marine Sector of Kerala

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ABSTRACT

The marine sector is considered one of the most hazardous occupations in the world. Mobility in the marine sector is currently due to its socio-economic issues. Inter-state migration to the marine sector started in southern India, especially from Tamil Nadu. Currently, the scenario has been changed by the inter-state migration from the north-eastern part of India. Various factors are marked by reviews associated with inter-state migration to the Kerala marine sector. This study is an exploratory study aimed at analysing the working profile of these migrants, which directly affects their occupational health as inter-state migrants working in the Kerala marine sector. The study is conducted in the Ernakulam district of Kerala. Ernakulam district accommodates the highest number of Inter-state labour migrants working in the marine sector. Total number of samples in the study is 243 migrants from Ernakulam district of Kerala. Respondents are selected through the multi-stage simple random sampling. In initial stage of sampling research finds the total number of harbours in the Ernakulam district, followed by the second stage listing the harbours employed by the Inter-state labour migrants through the field visit. Tool of data collection was interview schedule and data analysis is done with the help of SPSS. Findings and discussion reflect the various work-related

factors affecting the health and economic status of Inter-state labour migrants were discussed.

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1. Introduction:

Data from the 2011 census specify the internal migrants in India. 117.9 million inter-district migrants and 54.4 million inter-state migrants were in India, according to the data of the 2011 census. Inter-state migration in India is happening in both urban and rural employment sectors. Unskilled sectors provide more job opportunities to Interstate labour migrants. In most cases, working in the unskilled sectors will be temporary and informal. Most of the time their nature of working conditions will make them more vulnerable and exposed to economic and health issues (Mencutek, 2022). Kerala has a lengthy history of inward migration. In-migration began in the 1970s, 1980s, and 1990s, with the majority coming from the nearby states of Tamil Nadu and Karnataka. These migrant workers were young and had low levels of education. The primary motivators for migration are a lack of work opportunities in one's home town and higher salaries in Kerala. Social networks play an essential influence in migration from relatively backward states (Kumar, no date). Labour migrants from both North states and North-eastern states are currently working in the Kerala including West Bengal, Rajasthan, Tamil Nadu, Gujarat, Odisha etc. These inter-state migrant labourers are primarily employed in the construction, domestic, brick kiln, textile, mining, transportation, and agriculture industries (Indian Institute of Population Science, 2001).

Migration to the Kerala maritime sector is a recent phenomenon. In 2017, it was discovered that traditional fishermen from five Indian states were fishing off the coast of Kerala. Fishermen who work in the fishing boats of the coast of Kerala come from the Sundarbans region in West Bengal, Puri, Khorda, Cuttack and Baleswar districts in Odisha, Udipi district in Karnataka, Cuddalore, Thoothukkudy and Ramanathapuram districts in Tamil Nadu, and Srikakulam and Vizianagaram districts in coastal Andhra Pradesh (Peter and Narendrn, 2017).

In addition to traditional fishermen, migrants who don't have a non-traditional fishing background from Assam and West Bengal districts also work as fishermen on the Kerala coast. (Peter and Narendrn, 2017). Policies of host state and working conditions in the host state have a direct impact on migrant's health. Working nature in the marine sector have an impact impact on workers by causing high levels of stress, fatigue, isolation, the possibility of physical injuries due to heavy lifting and harsh weather, limited access to healthcare and prolonged separation from family, which frequently leads to mental



health concerns and a lower quality of life; this is especially true due to long working hours, cramped living quarters, and exposure to demanding environments at sea. Seafaring is a challenging and dangerous occupation. When at sea, the fishing boat serves as both a living and working environment for the sailors. Working circumstances at sea are exceedingly demanding; labourers must frequently work in harsh natural conditions and endure loneliness and isolation from the shore for several days. So, the study examines how these working and living conditions in the boat complicate the lives of migrant fishermen.

2. Review of Literature:

Various studies related to working condition in fishing baots gives a better understanding of the determinants of occupation in the marine sector, as described chronologically. Nicole (2008) studied the fishermen regarding their life at sea, discovering that anything might happen at sea throughout the Fishing trip. They confront a massive risk because they are standing on a boat in the middle of the ocean, setting gear and being pulled by a rope. Everything goes over the fisherman's head during the work: hauling gear, rope, and pots. It only takes a little slip to break fishermen's necks or drown. Nicole emphasises that fishing requires a bodily strategy for dealing with physical exertion in a liquid and, thus, uncertain environment. Most fishermen try to modify their boats, enlarging, deepening, or shifting to larger vessels, adapting gear and adding safety equipment to reflect the risks and challenges of fishing farther from shore.

Udolisa (2010) further explains some of the occupational dangers faced by fishermen due to the nature of work, such as injuries caused by knives and wounds on the fingers and legs. These minor injuries may develop into septic wounds because basic medical supplies are not transported to sea. During the fishing trip the fishermen also sustain minor burns from lanterns and stoves. Other injuries include fish bites from fish with sharp teeth, such as sharks and fish spine cuts from fishlike catfish and stingrays. Surviving at sea was the next challenge when some incidents occurred, particularly for coastal canoes operating for 36-48 hours at sea. Dehydration increases among the fisher man when there is a dearth of portable water in fishermen groups during fishing trip. According to Nielsen et al (2013), crew members in the fishing boat working in the engine room and on deck will face heavy lifting, confined working conditions, noise and mental strain. Soykan (2014) goes on to say that fishermen on fishing boats face physical (dust, vibration, noise, thermal comfort, illumination, etc.), chemical (paint, solutions, etc.) and psychological hazards. It is commonly known that fishermen do not wear necessary



personal protection equipment (PPE) while encountering high-risk circumstances such as falling, slipping, dropping an object, or pricking.

During his study, Roshan (2016) interviewed hospital officials, finds that common fishing-related cases they encountered were diarrhoea and drowning. They reported a considerable drop in drowning incidents over time. Last year, the hospital handled 15 to 20 cases. Six persons lost their lives, the majority of whom were migratory fishermen. Zytoon and Basahel (2017) investigation show that working offshore for multiple days in hazardous situations is difficult for fishermen of all ages. Mellbye and Carter (2017) conducted a study on suicide among marine workers. Sailors regularly labour and live in cramped quarters with high noise, heat, vibration, and ship motion for months, with little to no contact with their lives on land. Historically, the high suicide incidence among fishermen has been linked to their remote location as well as their working and living conditions. Myers et al (2018) discovered that musculoskeletal hazards dominate the literature on occupational health repercussions for fishermen. Fishers encountered musculoskeletal issues due to extended working hours and a dynamic work environment with high heat, cold, wind, and moving work surfaces while standing, resulting in three-dimensional inertial forces. According to Moyce and Schenker (2018), around 244 million transnational migrants work in the marine sector, and many are in dangerous employment.

Migrant workers also suffering from the high rates of occupational related issues ultimately result into the unsatisfactory health outcomes, occupational health hazards and injuries. Migrant workers unequal distribution of health is primarily due to the bad environmental and occupational exposures. Language/cultural obstacles, availability of health care services, lack of proper formal documents and political atmosphere of host country all contribute to this phenomenon. Tatar (2019) goes on to say that accidents in the marine industry reoccur every year due to poor decision-making, taking risks, or failing to follow basic precautions such as listening to weather forecasts, wearing Personal Flotation Devices, or guarding and maintaining machinery. According to Mansi et al. (2019), maritime labour involves distinct occupational risks. He is classifying this risk into three agents. First important agent is physical agents including noise, ultraviolet radiation, weather conditions and whole-body vibration associated with trip in fishing boats. Second one is biological agents such as toxins, parasites, fungi, bacteria and virus. Last classification is psychological agents such as reduced sleep, poor hygiene in fishing boats, irregular working hours and fatigue. Sharma and Sethulakshmi (2019) divided occupational hazards faced by Kerala fishermen into vessel and individual hazards. Another frequently reported occupational hazard was man overboard. Frequently occurring man overboard is mainly due to were irresponsible



strolling, slick decks, ice, water, and fish spilling on the deck. Collisions were the third most prevalent occupational hazard, including speed, a lack of lights and signals, darkness, wrong channels, a tired crew, severe seas, storms, rain, winds, and strong currents. Saravanabavan and Abeesh (2020) discovered that the sample group frequently reported health difficulties related to their occupational environment. Headaches are the most often mentioned health concern among them. Skipped meals, changes in fishing time, overstrain, and sun exposure during fishing selling hours are all causes of headaches. Stagnant water causes viral fever and dengue. Weight lifting, pushing, and tugging on boats can cause musculoskeletal issues. Another problem is skin illnesses caused by bacteria found in fish and marine life, contaminated water, and fungus from fish nets. Frequent contact with salt water in sea directly linked with eye disorder. The report stresses the considerable risk to the health of fishing industry personnel.

According to Roshan (2022), the fisherman is regularly exposed to harsh weather and risky equipment, but they downplay the risks of their job. They claim that modern communication technology has helped to mitigate storms and cyclones. Many admitted that mishaps were frequently caused by drinking, namely when men fell overboard and perished. Olapade et al. (2021) conducted an occupational hazards study reports insomnia, restlessness, headache, sneezing, respiratory difficulties, eye problems and malaria among fisherman. Body pain and aches were reported by 98.3 percent, followed by anxiousness (95%) and skin problems (70%). Studies reveals that fishermen face a variety of occupational health dangers, including musculoskeletal disorders, allergies, drowning, falling, accidents, and even death as a result of numerous work-related issues. Literature emphasised in the study created the framework for the study's aims. These aims are discussed below.

3. Objectives:

- To enquire about the nature of work done by inter-state migrant labour in the marine sector of Kerala.
- To study how the working conditions affect the occupational health of inter-state migrant labour in the marine sector of Kerala.

4. Data & Methodology:

This study is based on an exploratory research design. The research paper consists of data from both primary and secondary sources. Study is conducted in the Ernakulum district of Kerala. The rationale



behind the Ernakulam district is the high prevalence of inter-state migrant labour working in the marine sector. (Data source: State Planning Board (Evaluation Division), Government of Kerala, 2021). The study's sample size is 243, calculated by the sample size calculator. The study chose 243 participants for the investigation through a multistage simple random sampling technique. The first research identified significant harbours in the Ernakulam district from the list provided by the Harbour engineering department of Kerala. Data on Harbours, which contain inter-state labour migrants, was unavailable then. The research found data on harbours that employed inter-state labour migrants through field visits.

List of harbours:

- Munambam
- Murikumpadam
- Kalmukku

From each harbour, the researcher collected a list of inter-state labour migrants. Samples are selected from the reach harbour equally and by using the interview schedule researcher collected data on various occupational related aspects contributing to migrants health conditions. After the data collection data were coded and entered in a excel. With the help of SPSS further data analysis were done. Other important secondary data used in the study were taken from the various published journals and reports of Kerala government.

5. Results and Discussion:

5.1 Profile of Inter-state migrant labour in the study:

Inter-state migrant labour working in the marine sector are from 6 states of India (See Table 1). The most Inter-state labour migrants are from the West Bengal (32%) and Tamil Nadu (21%). Also, Inter-state labour migrants are coming from Odisha (12%), Assam (25%), Andhra Pradesh (8%) and Jharkhand (2%), working in the marine sector of Kerala. All the respondents are Male. Female migrants are not working in Kerala's marine sector. The age-wise distribution shows that they are in between age groups of 18-27 (34%), 28-37 (43%) and 38-47(12%). 18% of the inter-state labour migrants have not attended school. 60% of the Inter-state labour migrants are Hindus, followed by 21% of Christians, 14% of Muslims and 5% of others.

Table-1: Profile of the Respondents

State of Domicile	West Bengal	Tamil Nadu	Odisha	Assam	Andra Pradesh	Jharkhand
	32%	21%	12%	25%	8%	2%
Gender	Male			Female		
	100%			0		
Age	18-27	28-37	38-47	48-57	Above 57	
	34%	43%	12%	9%	2%	
Education	Not attended	Primary	Secondary	High school	Higher Secondary	Graduation and above
	18%	27%	23%	12%	11%	9%
Religion	Hindu	Christian		Muslim	Others	
	60%	21%		14%	5%	
<i>(Source: Author)</i>						

5.2 Work profile of the Inter-state migrant labour in the marine sector:

A work profile in the marine sector comprises a wide range of tasks and responsibilities. There is no standardised work pattern existing in the fishing sector. Fishing can be operated by using small canons or highly mechanised fishing boats. According to the type of boat, choosing for fishing is directly related to the health status. Fishermen working in highly mechanised boats have a higher chance of occupational health issues, and sometimes, fishermen stay for a few days to catch fish at sea. Their working schedule is also different from other sectors. They work according to the fish catch. Sometimes, they have to do back-to-back work without rest. All these uncertainties are part of work in the fishing sector, which affects the health of inter-state labour migrants. The following headlines describe each work-related component and their effects on inter-state labour migrant's health. One of the critical aspects which affect the migrant's health is the type of boat they are employed. Two types of boats in which migrants are opting for working in Kerala marine sector.

- Trawling Boats
- Ring seine Boat

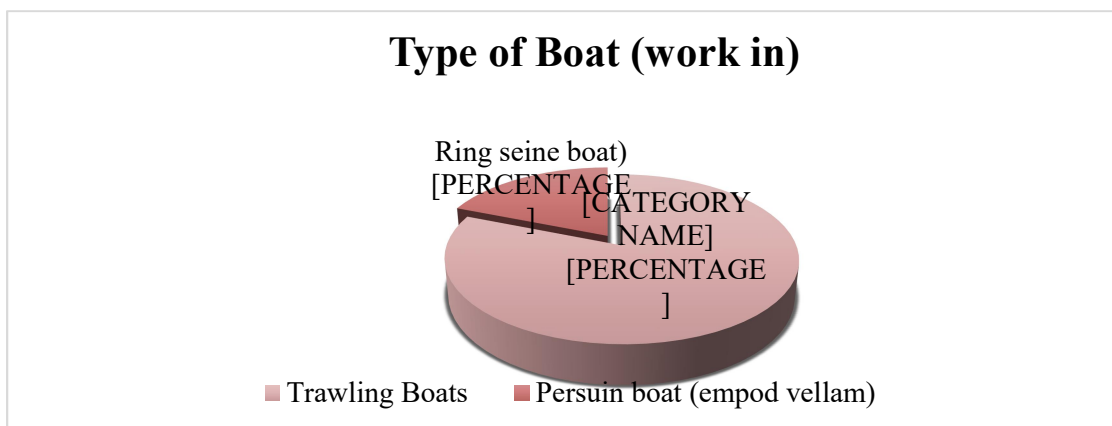
5.2.1 Trawling Boats:

In 1954, the Indo-Norwegian Project built the first trawlers for offshore fishing in Kollam. Trawling boats built in Kerala can be up to 120 feet long, with 240-foot trawl nets. Boats stay at sea for 10-25 days, have a crew of 15-18 people, use improved navigation and fishing technology, increased storage capacity, larger engines, and trawl net winches. Trawling boats, like automobiles on land, are assigned a licence number. Fishing trips in a Trawling boat will last 10 to 15 days. Migrants working on these vessels must spend 10 to 15 days at sea. Trawl boats will be banned in Kerala for 52 days.

5.2.2 Ring seine Boats:

Ring seine's contribution to total marine fish landings in Kerala has increased in the early 1980s. As cargo vessels, these fishing vessels use medium-sized boats known as Vallom, ranging from 10.7 to 13.7 meters with outboard engines of 25 horsepower or more. Ring seine boats can employ up to 40 workers. Migrants using ring seine boats will continue to fish daily, and vessels will not be prohibited during Kerala's trawling ban period (52 days). In this study (see Figure 1), 81% of migrants work on trawling boats and 19% on ring seine boats. Migrants from Odisha and inland fishermen from Assam primarily work in ring seine boats. Migrants must work in crews of 40-45 employees on the ring seine boat. Migrants on trawling boats are limited to work with 10-15 fishermen. Migrants working on trawling boats have greater exposure to fluctuating weather conditions, social isolation as a result of being at sea, and a higher incidence of illness and injury. In conclusion, the type of boat and nature of the jobs substantially impact marine people's health.

Figure-1: Types of Boats



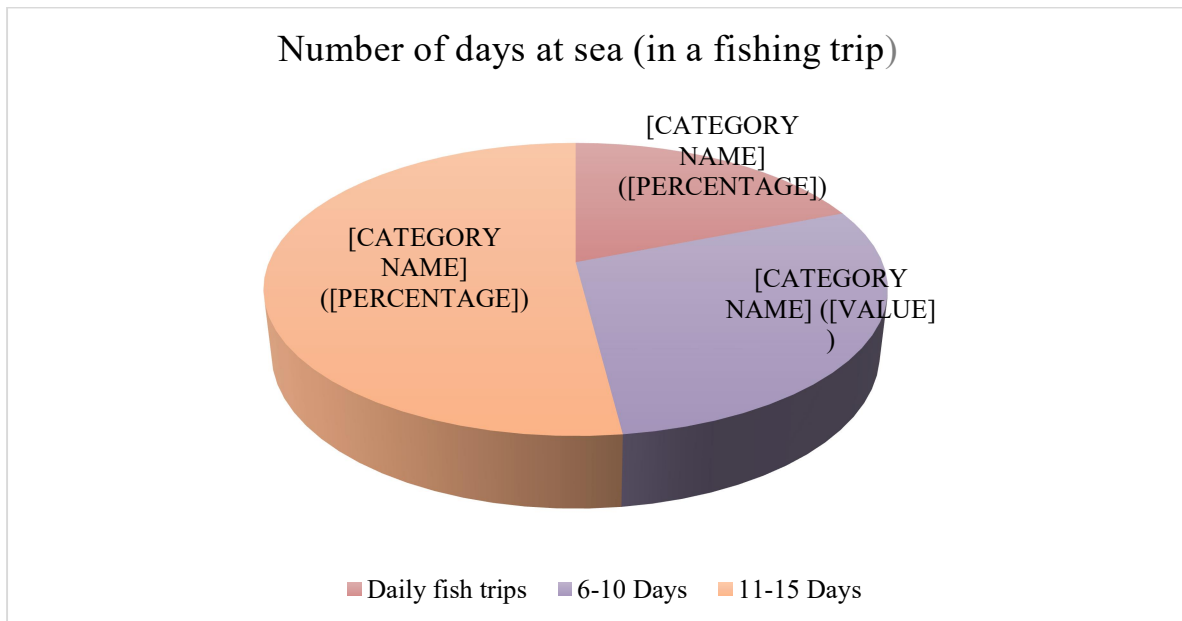
(Source: Author)

5.3 Number of days at sea (for a fishing trip):

The number of days at sea will vary depending on the boat. Those operating aboard Reing seine boats are not required to stay on the boat. They fish every day. They will go fishing in the early morning and return by the evening. If they obtain enough catch early, they will return early. Migrants working on trawling boats must spend 10-15 days at sea. After catching the fish, they will return to shore and sell it. They will get 3 to 5 days of rest. Go back to the fishing trip. Before going on a fishing excursion, they keep everything, including food, water, and essential medicine.

According to the study (Figure 2), 52% of migrants worked for 11-15 days at sea as part of their fishing excursion. 29% of migrants spend 6–10 days at sea. 19% of the migrants do not remain at sea. They will go fishing every day. Fishing days will vary from boat to boat. The Reing seine boat will fish practically every day of the month. Trawling boats will make a minimum of two fishing trips per month. The number of days spent at sea has a direct impact on occupational health risks and migrant health concerns. Those who go fishing daily have better occupational health than those who spend extended periods at sea.

Figure-2: Number of days (for a fishing trip)



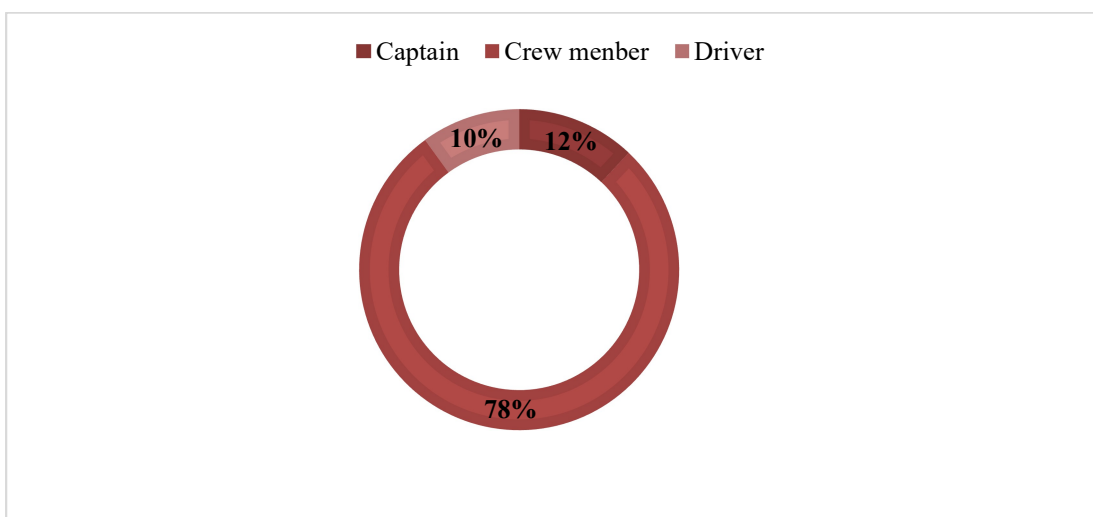
(Source: Author)

5.4 Types of occupation in the boat:

A typical boat has one leader, a driver, and ten to thirteen crew members. All of the positions are nicely defined. All of them have specific responsibilities. They will work as a team under the leadership of the boat. According to traditional maritime rules, a good caption and team will produce more fish and yields.

- The Srangk (captain) is the most essential post aboard a trawling boat. However, the caption is responsible for all crucial decisions that must be made aboard a boat. The leader has extra responsibilities, such as managing the team of northern and southern migrants. Share is also high for the leadership post.
- Driver - The boat also has an engine driver responsible for the engine, generator, and inverter (charged by the engine) and must start the engine. It is a technical employment that demands a skilled individual. His share is also different.
- Crew member- Ten to eighteen personnel can stay on a boat as part of the general crew. The entire crew takes part in fishing, sorting, icing, and storing fish. They must be mended immediately, and there will be a designated cook. They will work according to the leader's instructions. The commander will train new crew members. Each crew member has the same share.

Figure-3: Type of Work done by Inter-state migrant labour in Boat



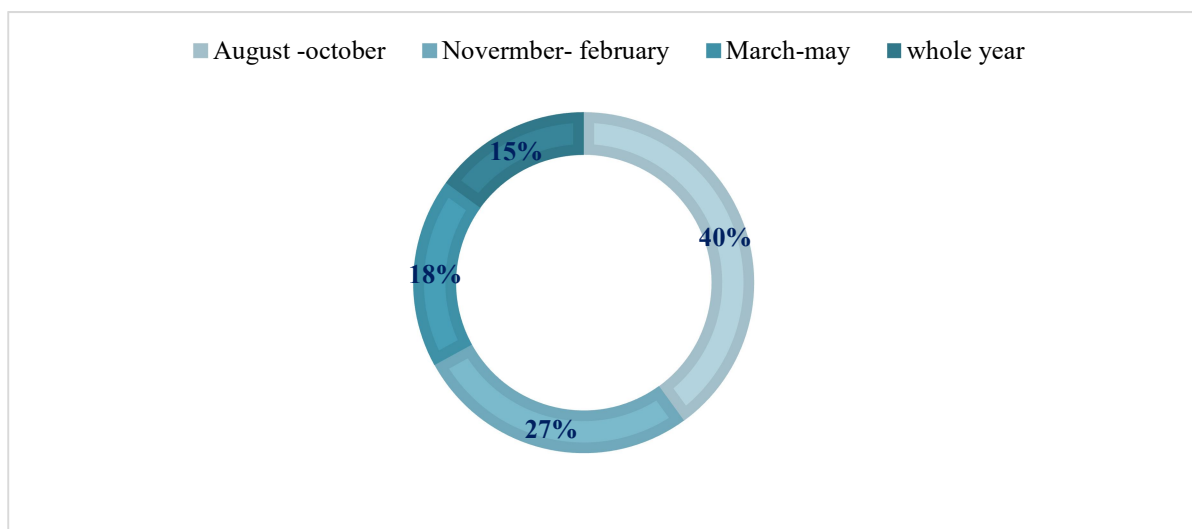
(Source: Author)

Migrants in this study serve as captains, drivers, and crew members. 12% of migrants work as captains of boats. 10% of migrants in the research work as drivers, while 78% work as crew members. The sort of work conducted on boats significantly impacts workers' health, particularly those who manufacture, repair, maintain, and disassemble boats and ships and are exposed to various chemical and physical strain that can cause acute and chronic illnesses. Workers are frequently exposed to asbestos, welding fumes, metals, paints, solvents, and gasoline. Migrants working as crew members are also at risk of being harmed by loud exposure, extreme temperatures, vibration, and musculoskeletal disorders, all common aboard fishing boats.

5.5 No. of months working in the marine sector (in a year)

Migration to Kerala's marine sector is entirely seasonal. The season begins on August 1st and concludes in May. Most migration to the marine industry takes place over a 10-month. The fishing industry's trawling prohibition will last two months. Migrants operating on Ring seine boats (Empod vellam) are not affecting with trawl ban period. Trawling boats were prohibited during this period. During these two months, migrants return home or stay in Kerala to find other work. There is a season in between seasons. August through October is recognised as the peak season. They will catch more fish at this time. The slow fish catch, known as the off-season, will diminish during the next few months. Some of the migrants will return home after the peak season. Some of them remain here, depending on the catch.

Figure-4: No of months working in the marine sector (in a year)



(Source: Author)

Among the sample population, 40% stayed during the fishing season from August to October. Between November and February, 27% of migrants remain. 18% of migrants stay from March to May when the season ends. 15% of migrants remain for an entire year. Migrants staying extended during the season significantly impact health issues, especially related to muscles.

5.6 Labour status of migrants working in the marine sector of Kerala

Table-2: Labour status of working in the marine sector of Kerala

<i>Labour status</i>	<i>Percentage</i>
<i>Temporary</i>	<i>100%</i>
<i>Permeant</i>	<i>No Permeant workers</i>
<i>Contract</i>	<i>No contract workers</i>

(Source: Author)

According to Table-2, all migrants working in the maritime sector are temporary workers. Contractors are not involved in the recruitment process for migrants. The marine sector conducts direct recruiting of migrants. The boat owner appoints the migrants. They work beneath them. Because there no formal structure of employment in the boat, they can switch boats at any time, with or without alerting the owner. They may work in any of Kerala's harbours. Migrants are ineligible for many labour and health benefits because of proper job documents.

5.7 Channels of migration to marine sector in Kerala:

Channels of migration are the numerous methods or pathways by people move one location to another. There are both institutional and informal pathways for migration. Migration to Kerala's marine sector occurs through informal channels. Labour migration occurs through personal links, such as family, friends, or community members who live in Kerala. In this study (Figure 2.6), informal channels play an essential role in migration. 33% of migrants arrive through friends' contacts. 30% of migrants made contact with relatives before migrating. 37% migrated through neighbours or community members. Migrants arrive in Kerala's marine sector in batches. An average batch comprises 10 -15 friends, relatives or community members.

**Table-3: Channels of migration to Kerala marine sector.**

<i>Labour status</i>	<i>Percentage</i>
<i>Friends</i>	<i>33%</i>
<i>Relatives</i>	<i>30%</i>
<i>Neighbours/Community Members</i>	<i>37%</i>
<i>(Source: Author)</i>	

Channels also affect the accessibility of health benefits to the Inter-state labour migrants. Migration through formal channels will help people enrol in various health benefits schemes, including health insurance. Informal migration will exclude them from enjoying all these benefits. These are the major work-related components affecting the health of migrants. Labour status and channels of migration are indirectly affecting the health status of inter-state labour migrants by reducing the accessibility of different health care services by host state and home state.

6. Conclusion:

The primary objective of the paper “Working Conditions Affecting the Health of interstate migrants work in Kerala's marine sector” is to understand working-related factors affecting the health of Inter-state migrants during fishing trips. Occupation in the marine sector is entirely different from the other sectors. Fishermen must stay at the sea for long days as part of their occupation. Fisherman adopted advanced technology to catch the fish, an ample workforce is still needed to operate fish-catching equipment. The paper starts with the introduction, which explains the dynamics of inter-state labour migration in the Kerala marine sector. Inter-state migration to the marine sector is a recent one. Review of the literature identifies the gap associated with the studies of work-related factors affecting the health of inter-state labour migrants. Studies underpinned in the literature review gave the study's theoretical framework. From the research gap questions, the objectives of the study are framed. The study's primary aim was to find the various occupational-related factors affecting the work of Inter-state labour migrants. An exploratory research design is used for the study. The study was conducted in the marine sector of the Ernakulam district of Kerala. Findings explain that work-related factors, directly and indirectly, affect the health of Inter-state labour migrants. Direct work-related factors affecting the inter-state labour migrants are their working hours, type of work in boats, number of months of work and kind of fishing boat, significantly impacting the frequent occupational health issues and hazards. Channels of



migration and labour status are indirectly affecting the health status of inter-state labour migrants by excluding them from health benefits. The paper concludes that finding and addressing work-related factors that complicate the health of migrants will ultimately address their vulnerability and can achieve sustainable development goals.

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