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PHASE 2
OF SKILLS ANTICIPATION TOOLS
AND PEER LEARNING PROGRAMME IN CENTRAL ASIA

Kazakhstan

Pilot Establishment Skills Survey

Road and Rail Freight Transportation

ANALYTICAL REPORT

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Glossary of acronyms

ATAMEKEN	KAZAKH NATIONAL CHAMBER OF ENTREPRENEURS
B2B	BUSINESS-TO-BUSINESS
DARYA	DIALOGUE AND ACTION FOR RESOURCEFUL YOUTH IN CENTRAL ASIA
EPRD	OFFICE FOR ECONOMIC POLICY AND REGIONAL DEVELOPMENT
ETF	EUROPEAN TRAINING FOUNDATION
ESS	ESTABLISHMENT SKILLS SURVEY
EU	EUROPEAN UNION
ILO	INTERNATIONAL LABOUR ORGANIZATION
KAZLOGISTICS	TRANSPORT SECTOR EMPLOYERS' FEDERATION
LLC	LIMITED LIABILITY COMPANIES
MOT	MINISTRY OF TRANSPORT
MLSPP	MINISTRY OF LABOUR AND SOCIAL PROTECTION OF THE POPULATION
PPP's	PUBLIC PRIVATE PARTNERSHIPS
SSC	SECTOR SKILLS COUNCIL
SME	SMALL AND MEDIUM SIZED ENTERPRISES
TVET	TECHNICAL VOCATIONAL EDUCATION AND TRAINING
VET	VOCATIONAL EDUCATION AND TRAINING
WDC	WORKFORCE DEVELOPMENT CENTRE

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Executive Summary

The Pilot Establishment Skills Survey (ESS), the first of its kind in Kazakhstan, was conducted to shed light on the skills and workforce development needs of the road and rail freight transport sub-sectors. Unlike traditional employer surveys that often focus primarily on measuring occupational demand, this survey explored sector-specific skill challenges and priorities across various skills development dimensions.

Led by KazLogistics, the employer federation for the transport sector, and designed with support from the ETF regional Project DARYA and key stakeholders, the ESS aimed to lay the groundwork for future sector-specific surveys to determine skill needs. ESS are crucial skills anticipation tools, providing the evidence required to transform vocational education and training (VET) systems to meet the rapidly evolving demands of businesses. The pilot ESS provides key evidence to help KazLogistics and its member associations advocate for training support, conducive policies, and resources to align workforce development with sector needs. Implemented between June and October 2024, the ESS gathered detailed insights into hiring dynamics, recruitment patterns, workforce characteristics, and skills gaps in the rail and road freight sub-sectors.

Kazakhstan's freight transport sector serves as a vital link between Europe and Asia. By uncovering workforce challenges and recruitment barriers, this ESS aims to enhance the freight transport sector's efficiency, competitiveness, and productivity.

Key Findings

Kazakhstan's freight transport sector[1] is predominantly comprised of small enterprises (10–99 employees), representing 86 per cent of surveyed businesses, with nearly all being privately owned (99.1 per cent). Road freight accounts for 50 per cent of enterprises, slightly outpacing rail freight (40.4 per cent). The rail sector is increasingly relying on outsourcing and foreign labour, while the road freight industry is adapting to structural market changes by employing more part-time workers. These trends reflect distinct operational strategies and labour market adjustments within the transport sector.

Interestingly, elementary occupations in the transport sector report an exceptionally high average hourly wage of 3,174.0 KT, significantly surpassing wages in other occupational categories. This can be explained by the fact that many of these roles are likely outsourced, where self-employed individuals typically earn higher gross wages to account for covering their own social benefits and other expenses.

Rail freight companies demonstrate slightly higher and more diverse current recruitment activity (82.6 per cent), meaning 82.6 per cent of companies in this sector hired new employees during the last two years, compared to (78.2 per cent) in road freight, where demand is mostly concentrated on operational roles like drivers. The hiring outlook highlights a cautious approach, with many businesses indicating reduced workforce expansion plans, reflecting a drive for cost reduction and efficiency that is linked to technological advancements. Anticipated hiring priorities focus on roles critical to

[1] The freight transport sector, in the context of the Pilot Establishment Skills Survey, refers exclusively to the road and rail freight sub-sectors. This term is used throughout the report, along with "road and rail freight sub-sectors," to ease reading.

operational efficiency and specialized technical expertise, while administrative positions see lower demand.

Overall, the rail freight sub-sector seems to focus on efficiency and long-term growth, while the road freight sub-sector is becoming increasingly digitalized to support the gradual automation of supply chains.

Larger enterprises, though fewer in number, report most vacancies. In contrast, many more small businesses report vacancies, but the total number of openings is significantly lower. Additionally, most small businesses face notable recruitment challenges and higher staff turnover.

Hard-to-fill vacancies are spread across both sub-sectors, rail and road freight, with “truck drivers” and “supervisory positions” particularly affected. Also, skills shortages are most pronounced in operational roles, such as drivers, and in specialized technical positions, highlighting the need for highly technical skills as well as non-technical. Employers most frequently cited a lack of technical and ICT skills as the primary reasons for difficulties in filling vacancies.

Staff proficiency varies significantly, with rail freight reporting 67.4 per cent of employees as fully proficient compared to 10.9 per cent in road freight. Across all enterprises surveyed, only 35.7 per cent of workers are fully proficient in doing their job. Notable skill gaps include, for example, organizational and foundational numerical skills for financial professionals, ICT and leadership skills for marketing specialists, and critical technical competencies for most manual workers and drivers.

The need for improved technical, ICT, and foundational skills is evident across most roles. Large enterprises primarily demand operational expertise, medium-sized businesses prioritize specialized skills to stay competitive, and small firms require versatile capabilities to sustain their operations.

Internal training, utilized by 52.6 per cent of businesses, remains the primary method to address skill gaps, underscoring misalignment between freight sector needs and VET offerings. Larger enterprises lead in training investments, while small and medium enterprises face significant resource constraints, limiting their ability to upskill and reskill employees effectively. The ESS findings suggest that most businesses, regardless of size and sub-sector, are compensating for gaps in the education and VET system. The heavy reliance on internal training, even among large enterprises, highlights not only the inefficiencies but also the significant time and financial costs businesses incur to fill these gaps.

Across all sectors, ”Drivers and machine operators” consistently had the highest in-house training participation rates, reflecting the importance of specialized skills in driving and machine operating roles, skills that do not seem to be adequately addressed by the current education and VET system.

Enterprises report competitiveness in pay and benefits for skilled workers but acknowledge inequalities for semi-skilled roles. Business strategies in the freight transport sector prioritize technological advancements and process optimization, aligning with trends toward digitalization and the automation. These strategies reflect a shift toward integrating advanced technologies, such as AI, to improve efficiency while simultaneously altering workforce demands in terms of both: quantity and quality. Investments in personnel management and participatory HR practices remain underutilized, highlighting opportunities for more inclusive and forward-looking workforce strategies.

Key Policy Recommendations

To ensure Kazakhstan's freight transport sector remains competitive and sustainable amidst rapid technological and market changes, it is essential to prioritize the modernization of vocational education and training (VET) programs. Continuously updating VET curricula to align with the sector's evolving demands is critical, particularly as digital logistics platforms and AI-driven tools become integral to freight transportation operations and logistics. These updates should emphasize specialized technical skills, integrated with ICT, while also fostering basic foundational skills such as literacy, numeracy, and abilities such as communication and "learn-to-learn" skills to enable workers to adapt effectively to ongoing advancements.

Equally important is the promotion of lifelong learning through upskilling and reskilling initiatives. Policymakers must prioritize these efforts to prepare the current workforce for technological transformations in freight transport. By integrating these initiatives into the National Qualifications Framework (NQF), accessibility and standardization can be ensured, benefiting workers across the sector. An institutionalized Establishment Skills Survey (ESS), with representative samples, is essential for providing evidence-based data on market demand. Collaboration between government bodies, sector associations, businesses, and workers is vital to designing training initiatives that address the evolving needs of the freight transport industry and beyond.

Additionally, the existing transport Sector Skills Council must be strengthened to take on a more proactive role. This council should work closely with businesses and educational institutions to align training programs with sector needs, develop tailored curricula, set competency standards, and identify emerging skills gaps. Enhancing the council's capacity to address these issues will be essential for tackling skills shortages and supporting the sector's long-term growth. A comprehensive list of additional recommendations to address these sector workforce challenges and opportunities can be found in Chapter 5 of this report.

1. Introduction

1.1. Background

The Establishment Skills Survey (ESS) is a pilot initiative designed to strengthen the evidence base for aligning skills development with labour market demands in Kazakhstan. It seeks to support policymakers in designing the right skills initiatives including vocational education and training (VET) programs to support workforce development, while also helping the transport sector advocate for government support to address its training needs. By providing insights into labour force needs, recruitment challenges, and skills gaps, the ESS aims to inform workforce planning to ensure skills development programs are more responsive to business requirements. This pilot underscores the importance of evidence-based decision-making for building a more agile, demand-driven skills ecosystem in Kazakhstan.

The Pilot ESS, focused on the road and rail freight transport sub-sectors, is the first of its kind in the Central Asian region. Initiated by KazLogistics in collaboration with Atameken and the Workforce Development Centre, and with technical support from the European Training Foundation (ETF) through its DARYA project, the survey gathers data on current and anticipated future skills needs, recruitment challenges, and workforce competencies. It also seeks to promote collaboration between policymakers, employers and training providers. As a pilot initiative, the ESS seeks to test its methodology and processes, with the goal of expanding this approach to other sectors in the future.

The findings aim to support the alignment of VET programs with labour market needs to ease the training burden of businesses, ensuring that workers are equipped with the relevant skills to meet rapidly evolving business demands, ultimately fostering a more effective, competitive and productive workforce.

1.2. Analytical objectives and scope

The analytical objectives of the Pilot Establishment Skills Survey (ESS) are designed to gather structured and systematic information to guide workforce planning, skills development, and training in the rail and road freight transportation sub-sectors. They aim to identify key workforce trends, challenges, and opportunities to support both immediate and long-term skills development strategies in freight transport.

Objective 1 - Analyze the factors contributing to recruitment difficulties in the rail and road freight transportation sector

This objective focuses on understanding the underlying factors that contribute to recruitment challenges within the freight transport sector. By examining trends such as business constraints, skill shortages, and sector-specific requirements, the analysis will identify the primary drivers of recruitment difficulties. This insight will be critical for developing targeted strategies to address recruitment issues and ensure that the sector can attract and maintain the required talent to support its growth and competitiveness.

Objective 2 - Assess the proficiency levels of existing staff and identify critical skills gaps

This objective seeks to assess the current skill levels, technical, cognitive and non-cognitive[2], of the workforce across various roles in the rail and road freight transportation sector. By analysing employee proficiency, the survey aims to identify specific skills gaps that impede sector performance, productivity, and growth. These gaps may include deficiencies in technical expertise, problem-solving abilities, or interpersonal skills that are critical for adapting to the sector's evolving demands. Addressing these gaps will enable the development of targeted training programs and workforce development initiatives designed to equip employees with the skills necessary to meet business needs. Such efforts are expected to improve overall performance, enhance competitiveness, and drive sustainable growth in the sector.

Objective 3 - Evaluate the emerging workforce skills needed by employers and determine future training requirements

This objective seeks to identify the skills and professional trades that are becoming increasingly critical in the sector due to technological advancements, evolving business dynamics, and shifting market demands. By assessing these emerging needs, the analysis will provide employers and policymakers with a clearer understanding of future workforce requirements. It will also support the development

[2] Technical skills refer to job-specific abilities such as operating machinery, programming, or IT literacy. Cognitive skills involve problem-solving, critical thinking, and analytical reasoning, while non-cognitive skills (or foundational skills) encompass interpersonal and behavioural abilities like communication, teamwork, adaptability, and emotional intelligence. These distinctions align with the World Bank's framework on skills development and workforce readiness.

of targeted training programs to equip workers with the necessary competencies to address the new challenges and opportunities in the transport and logistics sector.

Scope

The scope of the Pilot ESS is specifically focused on the rail and road freight transportation sub-sectors within Kazakhstan's broader logistics and transportation industry. It includes a detailed examination of workforce needs across critical occupations related to transportation operations, logistics management, vehicle maintenance, freight handling, and logistics planning. The survey will assess both current recruitment trends and workforce competencies as well as future skill requirements, ensuring that both short-term recruitment challenges and long-term workforce planning are informed.

This focused scope allows the ESS to provide a comprehensive understanding of the sector's workforce dynamics. By narrowing its focus on the rail and road freight transportation sub-sectors, the survey ensures that its findings are relevant and tailored to the specific needs of this vital sector of Kazakhstan's economy.

1.3. Structure of the report

The report is structured to provide a comprehensive analysis of the data collected through the Pilot Establishment Skills Survey (ESS). After providing the background, analytical objectives, and scope of the survey in this chapter, Chapter 2 summarizes the survey design and methodology, providing insight into how the data was collected.

Chapter 3 presents the core of the analysis, with descriptive data on enterprise profiles, workforce characteristics, recruitment patterns, skills gaps, workforce development, and business strategies. It also delves into the training activities of enterprises and their strategies for addressing workforce development needs.

Chapter 4 interprets the key findings from chapter 3 and explores their implications for relevant stakeholders.

Chapter 5 offers detailed recommendations, including policy suggestions and practical actions for stakeholders.

2. Survey design and methodology (brief summary)[3]

2.1. Survey design

The Pilot Establishment Skills Survey (ESS) was designed based on international guidelines[4], utilizing a structured questionnaire to assess skills needs within the rail and road freight transportation sectors. The survey captures a broad range of data, focusing not only on technical skills but also addressing

[3] The detailed methodology and implementation steps of the survey are provided in a separate technical report for the Pilot Establishment Skills Survey.

[4] European Training Foundation. 2017. Developing and running an establishment skills survey - Guide to anticipating and matching skills and jobs Vol. 5. Available at https://www.etf.europa.eu/en/publications-and-resources/publications/developing-and-running-establishment-skills-survey-guide

cognitive (e.g., problem-solving) and non-cognitive skills (e.g., time management).[5] This approach provides a more comprehensive understanding of workforce needs and dynamics in these sectors when compared to classic approaches that mainly focus on assessing occupational demand.

A rich body of research highlights the growing importance of cognitive and non-cognitive skills, and how education and training systems can influence their development. As economies evolve and labour market demands shift, driven by trends such as digitalization and automation, the demand for these skills is rising exponentially. In this context, technical skills alone will no longer guarantee labour productivity and lead to business and economic growth. The survey's inclusion of technical as well as cognitive and non-cognitive skill assessments ensures a forward-looking approach that addresses these emerging workforce requirements.[6]

While the core of the Pilot ESS involves the collection of quantitative data, qualitative questions were also included to explore emerging trends and provide deeper insights into skills needs within the broader labour market context. This balanced design ensures that both immediate and long-term skills needs are captured, which is crucial for sectoral growth and effective VET planning.

2.2. Methodology

The Pilot ESS was primarily designed to support efforts in establishing evidence on recruitment challenges and training needs in the rail and road transport sub-sectors, to assist sector associations in lobbying for skills development support and to inform long-term workforce development planning.

The Pilot ESS targeted enterprises (with at least 10 employees) operating in the rail and road freight transportation sectors and affiliated with KazLogistics. The participating associations were the Kazakhstan Association of Carriers and Operators of Wagons (KazAPO), the Union of International Road Carriers of Kazakhstan (KazATO), and the Association of National Forwarders of Kazakhstan (ANEK).

The survey employed a stratified random sampling method, with the original goal of selecting 120 businesses. However, due to difficulties in securing participation, the sample was adjusted to include only businesses from the three participating associations as mentioned above, resulting in a slightly unequal distribution between the rail and road freight sectors.

Despite this, the sample provided deep and meaningful insights into sector-specific skills gaps and recruitment challenges. It also laid the groundwork for future surveys of this nature by outlining the process and developing the necessary tools and mechanisms. A total of 114 businesses participated, yielding a 95 percent response rate. It is important to highlight that while the Pilot ESS successfully gathered meaningful data, its prime purpose was to design and test the methodology and tools for future applications.

[5] Technical skills refer to job-specific abilities such as operating machinery, programming, or IT literacy. Cognitive skills involve problem-solving, critical thinking, and analytical reasoning, while non-cognitive skills (or foundational skills) encompass interpersonal and behavioural abilities like communication, teamwork, adaptability, and emotional intelligence. These distinctions align with the World Bank's framework on skills development and workforce readiness.

[6] Heckman, J. J., Stixrud, J., & Urzúa, S. (2006). The Effects of Cognitive and Noncognitive Abilities on Labour Market Outcomes and Social Behavior. Journal of Labor Economics, 24(3), 411-482.

3. Data presentation and descriptive analysis

3.1. Basic information on enterprise profiles and workforce characteristics

This section provides an overview of the enterprises and their workforce within Kazakhstan's road and rail freight transportation sub-sectors, based on data from the Pilot ESS. It highlights key aspects of enterprise profiles, such as size, ownership, legal structure, and economic activity, offering insights into the sector's composition. Additionally, it examines workforce characteristics, including employment structure, working hours, and wages, to shed light on the specific dynamics and challenges facing the sector. Analyzing enterprise and workforce data is essential in an Establishment Skills Survey, as it provides critical context for understanding skills demand within the broader context of labour market dynamics of the sector.

3.1.1. Enterprise profiles

Table 1 illustrates that most enterprises surveyed were small, with 86 percent (98 enterprises) employing between 10 and 99 people. Medium-sized enterprises, employing 100 to 249 people, made up 8.8 percent of the sample, while large enterprises, with 250 or more employees, accounted for just 5.3 percent. This distribution underscores the dominance of small enterprises within the sector.

Ownership data reveals that 99.1 percent of the enterprises surveyed were privately owned, while only 0.9 percent had mixed ownership. No state-owned or collective enterprises were included in the sample. In terms of legal structure, the most common form of business was the limited liability company (LLC), which constituted 88.6 percent (101 enterprises) of the sample. A small proportion of enterprises were joint-stock companies (0.9 percent) or cooperatives (0.9 percent), and 9.6 percent were registered under other legal forms. The prevalence of LLCs suggests that small and medium-sized enterprises prefer this structure, likely due to its limited liability and flexibility. (Table 1)

Table 1. Profile of enterprises participating in the Pilot Establishment Skills Survey in the Road and Rail Freight Transport sector

1.1 Size of the enterprise		
	Number of enterprises	Per cent (%)
Large (250 persons and more)	6	5.3
Medium (100–249 persons)	10	8.8
Small (10–99 persons)	98	86.0
Total	**114**	**100**
1.2 Enterprise ownership		
	Number of enterprises	Per cent (%)
State-owned	0	0.0
Collective	0	0.0
Private	113	99.1
Mixed	1	0.9
Total	**114**	**100**
1.3 Legal form of the enterprise		
	Number of enterprises	Per cent (%)
Limited liability company	101	88.6
Joint-stock company (open or closed)	1	0.9
Cooperative	1	0.9

Another form (write)	11	9.6
Total	**114**	**100**
1.4 Enterprise by economic activity		
	Number of enterprises	Per cent (%)
Freight transport by rail	46	40.4
Freight transport by road	57	50.0
Fright transport by rail and road	11	9.6
Total	**114**	**100**

Source: Pilot Establishment Skills Survey

Regarding economic activity, 50 percent of the enterprises surveyed (57) were involved in road freight transport, while 40.4 percent (46 enterprises) operated in freight rail transport. A smaller segment, 9.6 percent (11 enterprises), engaged in both sectors. This distribution indicates a slightly larger presence of road freight companies. (Table 1)

Kazakhstan's transport sector, like many around the world, is undergoing significant changes driven by digitalization, automation and a growing demand for efficiency. Strategically positioned between China and Europe, Kazakhstan has long been a key player in facilitating overland freight, particularly through its extensive rail network, which serves as a crucial trade link between the two regions. During the COVID-19 pandemic, as global supply chains were severely disrupted, Kazakhstan's transport infrastructure played a vital role in maintaining cross-border goods flow helping mitigate the impacts of interrupted international shipping.

The sudden surge in demand for rail and road freight transport services led to increased business fragmentation, with a rapid rise in small and micro-businesses alongside larger companies. This pattern stems from sudden expansion of transportation operations and infrastructure as Kazakhstan becomes a vital part of international transport routes such as the Middle Corridor and the Belt and Road Initiative.[7]

Further, technological advancements, such as AI-driven logistics and digital platforms, are reshaping business operations. As a result, smaller, more adaptable companies are gaining ground. The expansion of platform-based businesses and the growing role of digital solutions in logistics efficiency, tracking, and customer experience are further accelerating this transformation in both road and rail transport sectors in Kazakhstan. These sectoral trends help explain the large proportion of small enterprises surveyed in the Pilot Establishment Skills Survey.

3.1.2. Workforce characteristics

The employment structure across different freight transport sectors in Kazakhstan has shown notable shifts from October 2023 to October 2024. (Table 2)

In freight transport by rail, full-time employment increased slightly, rising from 58.7 per cent in 2023 to 59.6 per cent in 2024. However, there was a significant increase in the proportion of external collaborators, which rose from 43.3 per cent to 85.4 per cent, and foreign workers, which also grew

[7] Astana Times. 2023. Tapping Transport and Transit Potential of Kazakhstan. Available at: https://astanatimes.com/2023/02/tapping-transport-and-transit-potential-of-kazakhstan/

from 39.4 per cent to 62.7 per cent. This indicates a marked shift towards outsourcing and reliance on foreign labour in the rail sector, which could reflect changes in operational strategies or overall labour shortages in the local workforce.

In the freight transport by road sector, there was a slight decline in the full-time workforce, from 32.9 per cent in 2023 to 32.6 per cent in 2024, part-time employment was the most common with a marginal decrease from 93.8 per cent to 92.9 per cent during the same time. The share of external collaborators dropped significantly, from 55.8 per cent in 2023 to 11.5 per cent in 2024, reflecting a reduction in reliance on external labour. Similarly, the share of foreign workers decreased from 48.5 per cent in 2023 to 34.7 per cent in 2024, indicating a reduced dependence on foreign labour, likely due to a shift towards more localized hiring.

For combined rail and road freight transport, the data shows minimal shifts. The share of full-time employees decreased slightly from 8.4 per cent to 7.8 per cent, while part-time employees remained virtually unchanged at 0.8 per cent. External collaborators increased from 0.9 per cent in 2023 to 3.1 per cent in 2024, and foreign workers decreased from 12.1 per cent to 2.5 per cent. This suggests a relatively stable but slightly increasing reliance on external collaborators coupled with a reduction in foreign workers in this sub-sector. (Table 2)

Overall, these shifts suggest that while the rail sector is moving towards greater outsourcing and foreign labour, the road transport sector is adapting by increasingly employing part-time workers, reflecting evolving operational strategies and labour market dynamics.

Table 2. Employment structure of enterprises by economic activity

1.6 How many people are employed in your establishment?				
Absolute numbers	**Currently (as of October 2024)**			
Economic activity	**Full-time**	**Part-time**	**External collaborator**	**Foreigner**
Freight transport by rail	2781	8	82	74
Freight transport by road	1519	117	11	41
Fright transport by rail and road	366	1	3	3
Total	**4666**	**126**	**96**	**118**
Absolute numbers	**Last year (as of October 2023)**			
Economic activity	**Full-time**	**Part-time**	**External collaborator**	**Foreigner**
Freight transport by rail	2395	7	93	13
Freight transport by road	1344	121	120	16
Fright transport by rail and road	343	1	2	4
Total	**4082**	**129**	**215**	**33**
Per cent (%)	**Currently (as of October 2024)**			
Economic activity	**Full-time**	**Part-time**	**External collaborator**	**Foreigner**
Freight transport by rail	59.6	6.3	85.4	62.7
Freight transport by road	32.6	92.9	11.5	34.7
Fright transport by rail and road	7.8	0.8	3.1	2.5
Total	100	100	100	100
Per cent (%)	**Last year (as of October 2023)**			

Economic activity	Full-time	Part-time	External collaborator	Foreigner
Freight transport by rail	58.7	5.4	43.3	39.4
Freight transport by road	32.9	93.8	55.8	48.5
Fright transport by rail and road	8.4	0.8	0.9	12.1
Total	100	100	100	100

Source: Pilot Establishment Skills Survey

Table 3 provides a more detailed breakdown of the employed in the road and rail fright sectors based on working hours, daily working days, and wages/salaries across major occupation categories. In terms of working hours, most employees across the different occupation categories work approximately eight hours per day, with slight variations. Elementary occupations stand out with an average of 9.3 hours per day, indicating that workers in this category may have longer working hours compared to other groups.

When it comes to days worked per week, most occupations follow a standard five-day workweek. However, clerical support workers tend to work a bit more, with an average of 5.8 days per week, while elementary occupations work slightly fewer days, at 4.9 days per week. Despite these small variations, most occupation categories have a consistent five-day working week. (Table 3)

Regarding wages, managers earn the highest average hourly wage at 2,243.8 KT, followed closely by drivers and machine operators, who earn 2,322.2 KT per hour. This reflects the level of responsibility of these roles as well as the level of technical specialization. Technicians and associate professionals earn an average hourly wage of 1,700.3 KT, while professionals earn 1,629.4 KT per hour. Both categories earn notably less than managers and drivers, but their wages still reflect a level of technical expertise. Clerical support workers have the lowest average hourly wage at 1,194.6 KT, indicating that these positions tend to be lower paid compared to more specialized or managerial roles and might be in less demand. (Table 3)

Table 3. Employment structure by working hours and wage/salary

1.7 Could you please indicate how many hours and days your employees usually work per week and indicate their average wage and salary for each of the following major occupational groups?			
Major occupations	**Working hours "usually" worked per day**	**Days "usually" worked per week**	**Average hourly wage (KT)**
1. Managers	8.4	5.0	2243.8
2. Professionals	8.4	5.1	1629.4
3. Technicians and associate professionals	8.5	4.9	1700.3
4. Clerical support workers	8.8	5.8	1194.6
5. Service and sale workers	8.1	5.2	1387.8
6. Craft and related trades workers	8.9	5.1	1480.7
7. Drivers and machine operators	8.2	5.1	2322.2
8. Elementary occupations	9.3	4.9	3174.0
Major occupations	**Average wage & salary (KT per month)**		**Median wage & salary (KT per month)**
	From	**Up to**	

1. Managers	250,000.0	386,865.2	320,000.0
2. Professionals	250,000.0	281,006.1	240,000.0
3. Technicians and associate professionals	150,000.0	280,739.2	208,000.0
4. Clerical support workers	150,000.0	206,750.5	200,000.0
5. Service and sale workers		346,994.8	377,944.0
6. Craft and related trades workers		258,466.7	296,400.0
7. Drivers and machine operators		485,924.7	440,000.0
8. Elementary occupations		271,958.9	228,700.0

Source: Pilot Establishment Skills Survey

Surprisingly, elementary occupations in the transport sector have also an exceptionally high average hourly wage of 3,174.0 KT. This could be explained by the fact that many of these roles are likely outsourced. While elementary occupations are typically associated with low-skill, entry-level positions, in some cases, the tasks involved may require specialized skills or certifications that command a higher wage. For instance, an outsourced maintenance technician responsible for repairing and servicing engines, brakes, or other vital components of freight trucks may command a higher wage due to the technical expertise required. Similarly, railway systems may require contractors with specialized skills to maintain track safety, signalling systems, or freight handling equipment. These outsourced workers are often compensated at a premium compared to in-house employees, especially when their skills are in high demand or require only temporary engagement. This trend is particularly relevant in freight transport, where fluctuating demand may necessitate a more agile workforce. (Table 3)

Also monthly wages in the freight transport sector appear to be competitive, with many positions significantly surpassing the national average[8] and minimum wage, highlighting that the sector provides relatively competitive wages for a wide range of roles. Kazakhstan's minimum wage is set at 85,000 tenge per month (approximately 190 USD) in 2024[9].

Managers and drivers are the highest earners. Managers earn an average monthly wage of up to 386,865 KT, though the median wage for this group is slightly lower at 320,000. KT, indicating that while some managers earn much more, most earn a more moderate wage. Drivers and machine operators earn an average of 485,924.7 KT, with a median of 440,000 KT, suggesting that most workers in this category earn the top of the wage scale. In contrast, positions such as clerical support workers and elementary occupations exhibit more wage variability. Clerical support workers earn an average of 150,000 KT per month, with a median of 206,750.5 KT, indicating that a portion of this workforce earns higher than the average. Similarly, elementary occupations, which have an average wage of 271,958.9 KT, show a median wage of 228,700 KT, reflecting broader wage variability within this category.

However, while certain occupations earn considerably high wages, the variability in wages within different occupational groups suggests that there is pronounced wage inequality in the freight

[8] Kazakhstan Bureau of National Statistics. Labour and Income. Available at: https://stat.gov.kz/en/industries/labor-and-income/stat-wags/publications/190193/
[9] ibid

transportation sector. For instance, the difference between the average and median wages indicates that while some workers in these categories earn well above average, others earn closer to the lower end of the wage spectrum.

3.2. Recruitment pattern in enterprises

Understanding recruitment patterns within enterprises is essential for identifying skills demand and anticipating future workforce needs. Recruitment trends reveal how businesses are responding to operational challenges and adapting to market shifts. By analyzing factors such as the number and types of vacant roles, difficulty in filling positions, reasons for recruitment challenges, and staff turnover, one can gain valuable insights into skills shortages and evolving sector requirements. This section explores the recruitment patterns observed in the surveyed enterprises, highlighting key trends and their implications for workforce development and training strategies.

3.2.1. Recruitment by enterprise size and economic activity

An analysis of recruitment trends by enterprise size and economic activity provides valuable insights into hiring patterns over the last two years. Large enterprises (250 or more employees) demonstrate a 100 per cent recruitment rate, meaning all companies in this category hired new employees during the period. This likely reflects the consistent need for staffing within larger organizations that typically maintain robust operational and logistical frameworks. Medium-sized enterprises (100 to 249 employees) report a slightly lower recruitment rate of 90 percent, indicating that while most medium-sized firms hired, a small proportion (10 per cent) did not. (Table 4)

Small enterprises (10 to 99 employees) account for the highest number of hires in absolute terms, with 76 businesses that reported recruits. However, their overall recruitment rate stands at 79.2 per cent, which is lower than that of larger firms, highlighting that a significant number of smaller firms do not recruit, possibly due to resource constraints or fluctuating demand. Overall, across all company sizes, the recruitment rate is 81.3 per cent, with 18.7 per cent of firms reporting no hiring activity during the last two years. (Table 4)

Table 4. Recruitment by enterprise size and economic activity

2.1 In the last 2 years, has your company filled any permanent or temporary positions?	Absolute (Number of enterprises)			Per cent (%)		
Size of the enterprise	**Yes**	**No**	**Total**	**Yes**	**No**	**Total**
Large (250 persons and more)	6	0	6	100.0	0.0	100
Medium (100–249 persons)	9	1	10	90.0	10.0	100
Small (10–99 persons)	76	20	96	79.2	20.8	100
Total	91	21	112	81.3	18.7	100
Enterprise by economic activity	**Yes**	**No**	**Total**	**Yes**	**No**	**Total**
Freight transport by rail	38	8	46	82.6	17.4	100
Freight transport by road	43	12	55	78.2	21.8	100
Freight transport by rail and road	10	1	11	90.9	9.1	100
Total	91	21	112	81.3	18.7	100

Source: Pilot Establishment Skills Survey

Recruitment trends vary across economic activities, particularly between freight rail transport, freight transport by road, and companies engaged in both sectors. Freight rail transport has a recruitment rate

of 82.6 per cent, reflecting relatively high hiring activity, linked to the presence of larger enterprises in this sector. In comparison, freight transport by road has a slightly lower recruitment rate of 78.2 per cent, with a higher proportion (21.8 per cent) of companies reporting no hires. Companies operating in both freight rail and road transport display the highest recruitment rate at 90.9 per cent, suggesting that businesses offering multimodal transport services have greater staffing needs and maintain more active hiring practices. This may be due to their broader scope of operations, which requires flexibility and adaptability in workforce management. (Table 4)

The findings indicate that larger enterprises, particularly those in the rail transport sector or those engaged in both rail and road freight, are more likely to recruit consistently. This can be attributed to the structured operations and workforce demands of these firms. In contrast, small enterprises, which dominate the road freight sector, may encounter greater challenges in maintaining consistent recruitment levels, partly due to resource limitations, seasonality and the variability of demand in the sector. While recruitment activity remains robust across the freight transport sector, even though on low levels, enterprise size and the nature of economic activity play a critical role in shaping hiring patterns. (Table 4)

3.2.2. Occupations in demand

Table 5 and 6 outline occupational demand in the rail and road freight transport sub-sectors across two periods: January 1, 2022, to December 31, 2022, and January 1, 2023, to October 31, 2024. The decision to extend the second period to include months from 2024 was made to simplify recall for respondents. The uneven distribution of months is acceptable, as the analysis aims to understand broader recruitment trends.

During the COVID-19 pandemic, Kazakhstan's rail freight sector demonstrated resilience and substantial growth, driven by shifts in global logistics preferences. Interviewed businesses in the sector reported significant vacancies increases, rising from 270 hires in 2022 to 717 in 2023-2024 reflecting heightened demand for transport services amid global supply chain disruptions. Factors such as delays at key sea fright transit points, like the Suez Canal, led to increased rail freight transport substantially, necessitating workforce expansion to manage the increased workload. Kazakhstan's strategic position as a transit hub between Europe and Asia, and for being a member country of Belt and Road Initiative[10], further emphasized the importance of its rail network.

In 2022, freight traffic reached a record 252 billion tons, a 5.2 per cent year-on-year rise. Key drivers of this growth included increased exports of mining and metallurgical products, as well as grain shipments. Infrastructure developments, such as railway electrification and new construction projects, enhanced the sector's capacity and efficiency, positioning Kazakhstan as a leader in sustainable and resilient freight transport.[11]

Table 5 provides an overview of recruitment trends by occupation in the rail freight transport sector for the periods 2022 and 2023–2024. Results show significant changes in the demand for various occupations. In 2022, locomotive drivers and related workers were the most hired group, accounting

[10] The Belt and Road Initiative (BRI) is a global infrastructure development strategy that aims to increase trade and connectivity between Asia, Europe, and Africa

[11] Rail Journal Kazakhstan. 2023. Available at: https://www.railjournal.com/freight/freight-traffic-sets-new-records-in-kazakhstan/

for 41.5 per cent of the total recruitment. This was followed by employees engaged in accounting for materials and transportation at 10.4 per cent and locksmiths and repairmen at 9.3 per cent. However, in 2023–2024, the hiring pattern shifted dramatically, with "other workers in transportation and related occupations" emerging as the most recruited category, making up 58.3 per cent of hires. In contrast, locomotive drivers declined sharply to 12.0 per cent, and accounting staff saw a reduction to 6.8 per cent. (Table 5)

Gender distribution across occupations reflected the sector's male dominance, particularly in technical and operational roles. However, some categories, such as accounting staff and employees processing numerical information, showed a higher proportion of female recruits. For example, in 2022, women made up 38.9 per cent of hires in accounting roles, although this proportion decreased to 25.3 per cent in 2023–2024. Similarly, financial professionals and public relations specialists consistently reported female participation, albeit at slightly lower levels in the second period. (Table 5)

Table 5. Occupation that hired the most and the number of employees recruited in freight transport by rail (Per cent %)

2.2. Could you please indicate the occupations in which your company has hired the most employees and mention the total number of employees							
Freight transport by rail		**Per cent (%)**					
CODE	**Occupation**	**01/01/2022 to 31/12/2022**			**01/01/2023 to 15/10/2024**		
		Total	**Female**	**Foreigner**	**Total**	**Female**	**Foreigner**
132	Managers of transport department	0.0	0.0	0.0	0.6	1.2	0.0
241	Specialists-financial professionals	3.3	14.8	0.0	1.5	12.0	0.0
243	Specialists and professionals in public relations, sales and marketing	2.6	5.6	0.0	2.0	8.4	0.0
252	Database and networking professionals	0.4	0.0	0.0	0.0	0.0	0.0
261	Specialists and professionals in law	1.1	5.6	0.0	0.7	4.8	0.0
311	Technicians in the field of physical sciences (1)	3.0	0.0	0.0	0.3	2.4	0.0
312	Technicians in the field of technical sciences (2)	0.4	0.0	0.0	0.0	0.0	0.0
315	Technicians and dispatchers of land, air, sea and water transport	1.1	5.6	0.0	1.0	8.4	0.0
316	Inspectors of construction works, quality control and labour protection	3.3	5.6	0.0	0.0	0.0	0.0
332	Auxiliary professional staff for the purchase and sale of goods	1.1	0.0	0.0	2.2	4.8	0.0
333	Commercial service agents	0.0	0.0	0.0	1.3	10.8	0.0
411	Office workers	0.4	1.9	0.0	0.3	2.4	0.0
412	General secretaries	0.4	1.9	0.0	0.0	0.0	0.0
431	Employees who process numerical information	3.3	16.7	0.0	1.4	12.0	0.0
432	Employees engaged in accounting for materials and transportation	10.4	38.9	100.0	6.8	25.3	0.0
511	Employees in the field of public transport	4.4	1.9	0.0	4.5	2.4	0.0
711	Builders-installers and workers of related occupations	1.9	0.0	0.0	0.4	0.0	0.0
721	Shapers, welders, rollers men and related workers	2.6	0.0	0.0	1.0	0.0	0.0

723	Locksmiths and repairmen	9.3	0.0	0.0	3.5	0.0	100.0
741	Electrical workers	0.7	0.0	0.0	0.0	0.0	0.0
754	Other workers in transportation and related occupations	5.6	0.0	0.0	58.3	0.0	0.0
810	Supervisors (foremen) over operators of equipment	0.0	0.0	0.0	0.4	0.0	0.0
831	Locomotive drivers and related workers	41.5	0.0	0.0	12.0	0.0	0.0
833	Drivers of trucks, buses and trolleybuses	0.0	0.0	0.0	1.3	0.0	0.0
834	Drivers of mobile equipment	1.9	0.0	0.0	0.7	4.8	0.0
911	Cleaners and servants	0.4	1.9	0.0	0.0	0.0	0.0
912	Cleaners	1.1	0.0	0.0	0.0	0.0	0.0
	Total	100	100	100	100	100	100

Source: Pilot Establishment Skills Survey

The role of foreign workers also shifted over time. In 2022, all recruits in accounting for materials and transportation were foreigners, while in 2023–2024, this pattern was observed among locksmiths and repairmen, where 100 per cent of reported hires were foreign. This reliance on foreign workers in specific roles indicates skill shortages within the domestic workforce. (Table 5)

Analyses suggest structural adjustments in the rail fright sector. The significant increase in hiring for "other workers in transportation and related occupations" and the decline in more specialized technical roles such as locomotive drivers and technicians may point to operational changes favoring more generalist workforce roles since more specialized technical roles might be outsourced. The decline in recruitment for inspectors, technicians, and dispatchers could also indicate a reduced demand for highly specialized skills or increased automation and/or technological advancements. In a nutshell these workforce shifts observed highlight an evolving rail freight transport sector where workforce planning is becoming increasingly complex. (Table 5)

In the road freight sector, total recruitment slightly decreased from 321 hires in 2022 to 286 in 2023-2024, indicating a stabilization in hiring activity after 2022. The surge in recruitment during 2022 was also driven by the heightened demand for fast overland transport services between China and Europe, as global disruptions placed significant strain on supply chains and sea freight operations were hampered. These disruptions had a ripple effect, prompting the overland freight transport sectors in Kazakhstan to rapidly expand their workforce in response to the increased demand for transportation services. (Table 6)

Recruitment trends in the road freight transport sector between 2022 and 2023–2024 revealed notable shifts in hiring practices across various occupations. In both periods, “drivers of trucks, buses, and trolleybuses” represented the largest share of recruits, increasing from 28.7 per cent in 2022 to 32.5 per cent in 2023–2024. This highlights the critical demand for operational roles in this sector. “Unskilled workers” followed as the second most significant category in 2022 at 14.6 per cent, but their share dropped to 8.4 per cent in the later period, indicating a potential shift toward more specialized roles or reduced reliance on this group. (Table 6)

“Commercial service agents” saw a significant increase in recruitment, rising from 15.6 per cent in 2022 to 21.7 per cent in 2023–2024, reflecting growing emphasis on customer service and logistics coordination. Conversely, “auxiliary professional staff for purchasing and sales” experienced a slight

decline from 5.6 per cent to 4.5 per cent, though their role remains essential, particularly given their high proportion of foreign recruits, which increased from 35.7 per cent to 50 per cent. (Table 6)

Gender representation in road freight transportation exhibited notable variations. While operational roles such as drivers and technicians had minimal female participation, certain occupations showed a marked dominance of women. Among "auxiliary professional staff for purchasing and sales", women accounted for 18.9 per cent in 2022 and increased to 21.3 per cent in 2023–2024. Similarly, "financial professionals" saw 10 per cent female representation in 2022, rising to 11.5 per cent in 2023–2024. The unskilled category also featured high female participation, with women comprising 52.2 per cent in 2022 before declining to 39.3 per cent in 2023–2024. (Table 6)

The recruitment of foreign workers was concentrated in selected roles. In 2022, 35.7 per cent of recruits for "auxiliary professional staff in purchasing and sales" were foreigners, a figure that surged to 50 per cent by 2023–2024. In contrast, "drivers of trucks and buses" saw a decrease in foreign recruits, dropping from 35.7 per cent in 2022 to 10 per cent in 2023–2024. (Table 6)

Overall, the analyses reveal a persistent demand for operational roles like drivers, alongside growing diversification in workforce needs. The increased recruitment of "commercial service agents" and "financial professionals" highlights the sector's shift toward roles that support the complexities of digitalized and automated supply chains. The declining recruitment of unskilled labour signals a broader transition toward more specialized and high-value activities, driven by the adoption of advanced technologies and automation within the industry. This trend underscores the growing importance of a skilled workforce equipped to navigate the demands of a modern, tech-driven logistics ecosystem. (Table 6)

Table 6. Occupation that hired the most and the number of employees recruited in freight transport by road (Per cent %)

2.2. Could you please indicate the occupations in which your company has hired the most employees and mention the total number of employees							
Freight transport by road		**Per cent (%)**					
CODE	**Occupation**	**01/01/2022 to 31/12/2022**			**01/01/2023 to 15/10/2024**		
		Total	**Female**	**Foreigner**	**Total**	**Female**	**Foreigner**
215	Electrical engineers	0.0	0.0	0.0	0.3	1.6	0.0
241	Specialists-financial professionals	2.8	10.0	14.3	2.4	11.5	20.0
243	Specialists are professionals in public relations, sales and marketing of products and services	6.2	7.8	14.3	7.3	9.8	20.0
261	Specialists are professionals in the field of law	0.3	0.0	0.0	0.0	0.0	0.0
263	Specialists-professionals in the humanitarian sphere and religion	0.3	1.1	0.0	0.7	1.6	0.0
311	Technicians in the field of physical and technical sciences (1)	0.3	0.0	0.0	0.3	0.0	0.0
312	Technicians in the field of physical and technical sciences (2)	0.3	0.0	0.0	0.3	0.0	0.0
332	Auxiliary professional staff for the purchase and sale of goods	5.6	18.9	35.7	4.5	21.3	50.0
333	Commercial service agents	15.6	0.0	0.0	21.7	0.0	0.0

334	Auxiliary professional staff engaged in administrative and managerial activities	0.3	0.0	0.0	0.0	0.0	0.0
411	Office workers of a wide profile	0.9	3.3	0.0	0.7	3.3	0.0
432	Employees engaged in accounting for materials and transportation	12.1	3.3	0.0	10.1	8.2	0.0
833	Drivers of trucks, buses and trolleybuses	28.7	3.3	35.7	32.5	3.3	10.0
834	Drivers of mobile equipment	11.8	0.0	0.0	10.5	0.0	0.0
932	Unskilled workers	14.6	52.2	0.0	8.4	39.3	0.0
	Total	100	100	100	100	100	100

Source: Pilot Establishment Skills Survey

The differing occupational recruitment trends in both rail and road freight transport can be attributed to the ongoing structural shifts in each sector. The sudden rail freight expansion since 2020 has driven demand for operational and generalist roles, as the sector increasingly focuses on cost efficiency improvements. In contrast, the road freight sector, which initially saw a surge in hiring due to pandemic-related supply chain disruptions, has now stabilized as these pressures have eased. The sector is shifting towards roles that support digital logistics and customer service. In other words, rail freight appears to focus on efficiency and its long-term growth potential, while road freight seems to be adjusting rapidly to new technological and operational realities.

3.2.3. Availability of vacancies

Table 7 provides insights into the availability of vacancies among the interviewed businesses in the freight transport sector at the time of the interview, broken down by enterprise size and sector. It is interesting to note that larger enterprises, with 250 or more employees, had a higher ratio of companies reporting vacancies at the time of the interviews. Four out of six interviewed large enterprises reported open positions, accounting for 37 vacancies in total. This suggests that while there were fewer large companies, those that did report openings had a significant number of positions to fill.

Table 7. Number of available vacancies at the time of the interview (absolute numbers)

2.3 At this moment do you have vacancies?				
Size of the enterprise	2.3.a At this moment do you have vacancies? (Yes/No) (Number of businesses)			2.3.b At this moment do you have vacancies? (Total number of vacancies mentioned)
	Yes	No	Total	
Large (250 persons and more)	4	2	6	37
Medium (100–249 persons)	5	4	9	38
Small (10–99 persons)	43	51	94	90
Total	52	57	109	**165**
Enterprise by economic activity	Yes	No	**Total**	
Freight transport by rail	20	26	46	79
Freight transport by road	26	27	53	74
Freight transport by rail and road	6	4	10	12
Total	52	57	109	**165**

Source: Pilot Establishment Skills Survey

In contrast, small enterprises, with 10 to 99 employees, had the largest number of companies reporting vacancies, 43 out of 94 companies. However, these companies collectively had only 90 out of the 165 vacancies to fill, indicating that small businesses recruit generally far less people. This contrast highlights the structural differences between large and small enterprises. Larger companies may have more standardized hiring processes and greater capacity for workforce expansion, leading to concentrated recruitment efforts. Small businesses, on the other hand, typically have less formal recruitment needs and rely on smaller, more flexible teams. (Table 7)

Medium-sized enterprises, with 100 to 249 employees, presented a balance between these two extremes. Five out of nine interviewed medium enterprises reported vacancies, accounting for 38 open positions in total. This shows that medium enterprises had a moderate vacancy rate and recruitment volume. (Table 7)

When looking at the sectors, the rail freight transport sector had slightly more open vacancies than the road freight sector during the time of the interviews. Specifically, 20 rail transport companies reported a total of 79 vacancies, while 26 road transport companies reported 74 vacancies. This suggests that rail transport companies might have experienced a higher demand for staff at the time of the survey, though road transport had more companies with open positions at the time. (Table 7)

It could also be noticed that companies operating in both the road and rail freight sectors reported fewer vacancies, with only six out of 10 companies indicating open positions, totaling 12 vacancies. This could suggest that hybrid companies might have different, more specialized recruitment needs compared to those focused on a single sector. (Table 7)

3.2.4. Hard to fill vacancies

Analyses of Pilot ESS data in Table 8 reveal significant differences in the recruitment challenges faced by small, medium, and large enterprises, with small businesses encountering the greatest difficulty in filling vacancies.

Small Enterprises (10–99 employees) experience the most widespread recruitment challenges. For example, 48.1 per cent of “truck, bus, and trolleybus driver” vacancies in small businesses are reported as hard to fill. Additionally, 11.5 per cent of “commercial service agent” vacancies face similar difficulties. These challenges stem from several factors. Small businesses typically have fewer resources to dedicate to formal recruitment processes, lack dedicated HR departments, and often rely on informal recruitment methods such as word of mouth. These limitations reduce their ability to attract qualified candidates, especially for roles that require specialized skills. Moreover, small enterprises often cannot offer the same competitive salaries, benefits, or career advancement opportunities as larger companies, making these positions less attractive to job seekers. The lack of investment in training programs (See section 3.4) further compounds these challenges, as small businesses are less likely to upskill or reskill their employees for specialized roles. (Table 8)

Large Enterprises (250+ employees) face recruitment challenges in more specialized and technical positions. For instance, 53.1 per cent of vacancies for “mobile equipment drivers “, 9.4 per cent of “Specialists and professionals in the field of education” and 6.3 per cent of “locomotive driver” vacancies were reported as hard to fill. Large businesses have more resources to attract candidates and can offer better compensation packages and career development opportunities. However, they still struggle to find workers with the highly specialized skills needed for certain roles. The difficulty in filling these positions reflects the broader shortage of candidates with the required technical expertise,

despite the advantages larger companies have in terms of recruitment reach and training capabilities. (Table 8)

Medium Enterprises (100–249 employees) experience a mix of recruitment challenges. They report difficulties in filling both routine and specialized roles, such as "builders-installers" (17.6 per cent), "Drivers of trucks, buses and trolleybuses" (17.6 per cent) and "locomotive drivers" (11.8 per cent). While medium businesses have more resources than small enterprises, they still face significant constraints compared to larger companies. Their recruitment challenges are likely driven by a combination of factors, including limited brand recognition, competition with both small and large enterprises for talent, and fewer resources to invest in recruitment strategies or training programs. (Table 8)

The pilot ESS data also reveals significant variations in hard-to-fill vacancies across the surveyed sub-sectors of freight transportation. In freight transport by rail, the largest share of hard-to-fill vacancies is for employees engaged in accounting for materials and transportation (24 per cent), indicating a significant administrative gap in managing logistics and inventory. This is followed by specialists in public relations, sales, and marketing (14 per cent), emphasizing the need for professionals to enhance service delivery and client engagement. Lastly, other specialists in the field of education account for 10 per cent of hard-to-fill vacancies, suggesting a shortage of training and educational professionals. (Table 9)

Table 8. Hard to fill vacancies by enterprise size (per cent %)

2.4 Could you please indicate how many vacancies are proving hard to fill?					
		Per cent (%)			
Code	**Occupation**	**Large (250 persons and more)**	**Medium (100–249 persons)**	**Small (10–99 p persons)**	**Total**
711	Builders-installers and workers of related occupations	0.0	17.6	0.0	2.0
721	Shapers, welders, rollers men and related workers	6.3	11.8	2.9	4.7
810	Supervisors (foremen) over operators of industrial stationary equipment	0.0	0.0	1.0	0.7
831	Locomotive drivers and related workers	6.3	11.8	1.0	3.3
832	Motorcycle and car drivers	0.0	0.0	0.0	0.0
833	Drivers of trucks, buses and trolleybuses	0.0	17.6	48.1	35.3
834	Drivers of mobile equipment	53.1	0.0	0.0	11.3
132	Heads (managers) of specialized production, mining, construction, supply and transport departments	0.0	5.9	0.0	0.7
214	Specialists are professionals in the field of engineering, excluding electrical engineers	3.1	0.0	0.0	0.7
237	Other specialists and professionals in the field of education	9.4	11.8	0.0	3.3
241	Specialists-financial professionals	0.0	0.0	2.9	2.0
243	Specialists are professionals in public relations, sales and marketing of products and services	0.0	0.0	10.6	7.3
261	Specialists are professionals in the field of law	0.0	0.0	2.9	2.0
263	Specialists-professionals in the humanitarian sphere and religion	6.3	0.0	1.0	2.0

311	Technicians in the field of physical and technical sciences (1)	0.0	0.0	1.9	1.3
312	Technicians in the field of physical and technical sciences (2)	0.0	0.0	1.0	0.7
332	Auxiliary professional staff for the purchase and sale of goods	0.0	5.9	3.8	3.3
333	Commercial service agents	0.0	0.0	11.5	8.0
334	Auxiliary professional staff engaged in administrative and managerial activities	0.0	0.0	1.0	0.7
432	Employees engaged in accounting for materials and transportation	6.3	17.6	10.6	10.7
	Total	100	100	100	100

Source: Pilot Establishment Skills Survey

For freight transport by road, the hardest-to-fill vacancies are overwhelmingly for drivers of trucks, buses, and trolleybuses (52.5 per cent), highlighting a critical shortage of qualified heavy vehicle operators. Next are drivers of mobile equipment (14.9 per cent), reflecting a demand for technical specialists in machinery operation. Lastly, commercial service agents (11.9 per cent) form a significant portion of hard-to-fill vacancies, pointing to gaps in roles supporting business transactions and client services. (Table 9)

Table 9. Hard to fill vacancies by freight transportation sub-sectors (Per cent %)

2.4 Could you please indicate how many vacancies are proving hard to fill?					
		Per cent (%)			
CODE	**Occupation**	**Freight transport by rail**	**Freight trans-port by road**	**Freight trans-port by rail and road**	**Total**
711	Builders-installers and workers of related occupations	6.0	0.0	0.0	2.0
721	Shapers, welders, rollers men and related workers	4.0	5.0	0.0	4.6
723	Locksmiths and repairmen	0.0	0.0	0.0	0.0
810	Supervisors (foremen) over operators of industrial stationary equipment	0.0	0.0	100.0	0.7
831	Locomotive drivers and related workers	8.0	1.0	0.0	3.3
832	Motorcycle and car drivers	0.0	0.0	0.0	0.0
833	Drivers of trucks, buses and trolleybuses	0.0	52.5	0.0	34.6
834	Drivers of mobile equipment	4.0	14.9	0.0	11.1
132	Heads (managers) of specialized production, mining, construction, supply and transport departments	2.0	0.0	0.0	0.7
214	Specialists are professionals in the field of engineering, excluding electrical engineers	2.0	0.0	0.0	0.7
237	Other specialists are professionals in the field of education	10.0	0.0	0.0	3.3
241	Specialists-financial professionals	2.0	2.0	0.0	2.0
243	Specialists are professionals in public relations, sales and marketing of products and services	14.0	4.0	0.0	7.2
261	Specialists are professionals in the field of law	2.0	1.0	0.0	2.0
263	Specialists-professionals in the humanitarian sphere and religion	4.0	1.0	0.0	2.0

311	Technicians in the field of physical and technical sciences (1)	4.0	0.0	0.0	1.3
312	Technicians in the field of physical and technical sciences (2)	2.0	0.0	0.0	0.7
315	Technicians and dispatchers of land, air, sea and water transport	0.0	0.0	0.0	0.0
332	Auxiliary professional staff for the purchase and sale of goods	6.0	2.0	0.0	3.3
333	Commercial service agents	0.0	11.9	0.0	7.8
334	Auxiliary professional staff engaged in administrative and managerial activities	0.0	1.0	0.0	0.7
431	Employees who process numerical information	0.0	0.0	0.0	0.0
432	Employees engaged in accounting for materials and transportation	24.0	4.0	0.0	10.5
	Total	100	100	100	100

Source: Pilot Establishment Skills Survey

In the combined freight transport by rail and road sub-sector, the primary challenge is filling roles for supervisors (foremen) over operators of industrial stationary equipment, which account for an overwhelming 100 per cent of hard-to-fill vacancies. No other occupations in this sub-sector reported significant hard-to-fill positions, indicating a concentrated need for technical leadership roles. (Table 9)

These ESS findings reveal sector-specific challenges. While rail transport struggles with filling administrative and specialized roles, road transport is hampered by shortages of drivers, and combined rail-and-road operations exhibit gaps in supervisory positions.

3.2.5. Reasons key vacancies are hard to fill

Key vacancies are often challenging to fill due to specific skill-related gaps as identified through interviews with enterprises. These challenges vary across occupations but highlight common difficulties faced by employers in recruiting for roles such as “truck drivers”, “accounting professionals”, and “specialists in public relations, sales, and marketing”.

Across all occupations, employers most frequently cited a lack of technical and ICT skills as the primary reasons for difficulties in filling vacancies, with each mentioned, in 16.6 per cent of cases. This indicates that many businesses struggle to find candidates with adequate technical expertise and digital competence. Other commonly reported reasons include a lack of learn-to-learn skills, highlighted in 7.6 per cent of cases, as well as gaps in technical skills specific to the equipment or processes used in establishments, which were cited in 6.9 per cent of cases. Additionally, 5.5 per cent of vacancies pointed to deficits in numeracy skills, such as the ability to calculate, read, and interpret figures and tables, while 4.8 per cent highlighted challenges in acquiring, interpreting, and communicating information effectively. These findings suggest that employers are looking for a combination of both solid foundational and specialized skills in their candidates. (Table 10)

For “truck drivers”, the most significant challenge was reported to be a lack of technical skills related to specific equipment or processes, affecting 30.2 per cent of vacancies. This reflects the importance of practical expertise in operating specialized vehicles and equipment, such as trucks or buses. General technical skills were also cited as a gap in 20.9 per cent of cases, reflecting the broad competencies needed in the transport sector. Numeracy skills, such as the ability to calculate, read, and interpret

figures and tables, were mentioned in 23.3 per cent of cases, underscoring their critical role in tasks such as route planning, fuel management, and time scheduling. Interestingly, ICT skills and learn-to-learn skills were not reported as gaps for this occupation, suggesting that candidates typically possess sufficient digital literacy and adaptability, with practical and operational skills remaining the main areas of concern. (Table 10)

In the case of "accounting professionals" responsible for materials and transportation, the most significant skill gap was in technical, technological, or scientific knowledge, reported in 22.6 per cent of vacancies. This indicates the demand for specialized expertise in areas such as accounting and logistics. A notable proportion of employers, 13.2 per cent, also reported gaps in acquiring, interpreting, and communicating information, highlighting the need for strong interpersonal and communication abilities in roles that often require interaction with suppliers, clients, and internal departments. Similarly, numeracy skills were identified as a key gap in 13.2 per cent of vacancies, reflecting the importance of precise numerical abilities for financial reporting and logistical calculations. ICT skills were mentioned as a gap in only 1.9 per cent of cases, indicating that digital proficiency is generally sufficient among candidates for this role. (Table 10)

For "specialists in public relations, sales, and marketing", the largest skills gaps are in technical, technological, or scientific knowledge (21.9 per cent) and acquiring, interpreting, and communicating information (21.9 per cent). These findings emphasize the importance of specialized knowledge and advanced communication skills in these roles. Additionally, negotiation skills are frequently mentioned as a gap (15.6 per cent), which is vital for professionals who engage directly with clients and stakeholders. Notably, decision-making skills are identified as a gap in 100 per cent of vacancies, underscoring the strategic nature of these roles, where informed decision-making is essential. Similar to drivers and accounting professionals, ICT skills are not cited as a significant gap, suggesting that most individuals in these roles are already proficient in digital tools and technologies. (Table 10)

Table 10. Reasons why vacancies are hard to fill for the most mentioned occupations (per cent %)

2.5 Could you please indicate the reasons why hard to fill vacancies are hard to fill?				
	Per cent (%)			
Skill problems	**How many times mentioned (Per cent %)**	**833** Drivers of trucks, buses and trolleybuses	**432** Employees engaged in accounting for materials and transportation	**243** Specialists are professionals in public relations, sales and marketing of products and services
Technical skills required for this occupation	16.6	20.9	3.8	6.3
Technical skills relating to specific equipment or processes used in the establishment	6.9	30.2	11.3	3.1
Technical, technological or scientific knowledge	4.1	4.7	22.6	21.9
Understanding written documents and write clearly	4.8	0.0	11.3	12.5
Ability to calculate, read and use figures and tables	5.5	23.3	13.2	12.5

Learn to learn skills	7.6	0.0	5.7	6.3
Negotiation skills	4.8	4.7	15.1	15.6
Acquiring, interpreting and communicating information	4.8	7.0	13.2	21.9
Leadership skills	2.8	0.0	1.9	0.0
Team working	3.4	9.3	1.9	0.0
ICT skills	16.6	0.0	1.9	0.0
Decision-making skills	3.4	0.0	0.0	0.0
Problem-solving skills	4.1	0.0	0.0	0.0
Efficient use of materials, technology, equipment and tools	5.5	0.0	0.0	0.0
Ability to work accurately and in compliance with standards	3.4	0.0	0.0	0.0
Organizational and planning skills	4.8	0.0	0.0	0.0
Any other skills	0.7	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0

Source: Pilot Establishment Skills Survey

While technical skills and ICT proficiency are commonly required across most occupations, the specific needs vary by role. For “truck drivers”, the focus is on specialized technical skills and numeracy, while “accounting professionals” need a blend of technical knowledge, communication, and numerical ability. “Public relations, sales, and marketing specialists” prioritize technical knowledge and communication skills, with a strong emphasis on strategic decision-making abilities. The relatively low mention of ICT skills gaps in some roles suggests that most individuals in these occupations are already digitally literate. (Table 10)

It becomes clear from the analyses that the reasons for unfilled vacancies vary significantly by occupation. For “truck drivers”, the challenges are primarily operational, emphasizing practical and technical expertise. For “accounting professionals”, the gaps are more specialized, focusing on technical knowledge, communication, and numerical skills. Across occupations, however, the lack of technical and ICT skills remains a common challenge, highlighting the need for skill development programs tailored to these areas. (Table 10)

3.2.6. Staff turnover

Staff turnover rates reveal distinct patterns across sectors and enterprise sizes, with significant variations in stability and retention challenges. Within freight rail transport, 41.3 per cent of enterprises reported no turnover over the past year, indicating a relatively stable workforce. A further 30.4 per cent experienced turnover rates of 0–10 per cent, and only 6.5 per cent reported rates as high as 25–33 per cent. This suggests that high staff turnover is rare in rail transport, likely due to the fairly specialized skills required and potentially greater job security. (Table 11)

In contrast, freight transport by road exhibits a more dynamic staff turnover. A majority (55.4 per cent) of enterprises reported turnover rates in the 0–10 per cent range, while a notable 25.0 per cent experienced rates of 10–25 per cent. Interestingly, 3.6 per cent reported turnover rates exceeding 50 per cent, highlighting retention challenges in a segment where employment may be less stable due to factors such as lower wages or demanding working conditions. (Table 11)

When examining both sectors, 55.6 per cent of enterprises reported turnover rates of 0–10 per cent, and 22.2 per cent fell into the 10–25 per cent category. However, a small fraction (11.1 per cent)

reported turnover in the 33–50 per cent range, pointing to localized challenges in specific enterprises. (Table 11)

Table 11. Estimated staff turnover during a year (Per cent %)

2.6. What is the estimated percentage of staff turnover during a year?							
	Per cent (%)						
Enterprise by economic activity	**None**	**0–10%**	**10–25%**	**25–33%**	**33–50%**	**50%**	**Total**
Freight transport by rail	41.3	30.4	21.7	6.5	0.0	0.0	100
Freight transport by road	12.5	55.4	25.0	3.6	0.0	3.6	100
Freight transport by rail and road	22.2	55.6	22.2	0.0	11.1	0.0	100
Total	25.0	44.6	23.2	4.5	0.9	1.8	100
Size of the enterprise	**None**	**0–10%**	**10–25%**	**25–33%**	**33–50%**	**50%**	**Total**
Large (250 persons and more)	0.0	50.0	33.3	16.7	0.0	0.0	100
Medium (100–249 persons)	20.0	40.0	30.0	10.0	0.0	0.0	100
Small (10–99 persons)	27.1	44.8	21.9	3.1	1.0	2.1	100
Total	25.0	44.6	23.2	4.5	0.9	1.8	100

Source: Pilot Establishment Skills Survey

By enterprise size, large enterprises (250+ employees) reported relatively low turnover, with half experiencing rates of 0–10 per cent, while 33.3 per cent faced turnover of 10–25 per cent. Only 16.7 per cent of large companies reported turnover as high as 25–33 per cent, indicating greater workforce stability compared to smaller firms. Medium-sized enterprises (100–249 employees) showed a similar pattern, with 40.0 per cent reporting turnover of 0–10 per cent and 30.0 per cent experiencing 10–25 per cent rates. Small enterprises (10–99 employees), however, showed the highest levels of turnover variability: 44.8 per cent reported 0–10 per cent rates, but 21.9 per cent fell into the 10–25 per cent category, and 2.1 per cent exceeded 50 per cent turnover, underscoring the challenges smaller firms face in retaining staff. (Table 11)

Overall, staff turnover is lower in freight rail transport and larger enterprises, while freight transport by road and smaller firms face higher variability and more significant retention challenges. These differences highlight the influence of factors such as sector-specific conditions, enterprise size, and job stability on workforce dynamics. (Table 11)

3.3. Skills used by the current workforce

Understanding the skills that are utilized by the current workforce provides valuable insight into the competencies that are driving labour productivity in the sub-sectors studied and highlight areas where further development may be required.

3.3.1. Proficiency of staff at the current job

Workforce proficiency varies significantly across enterprise sizes and sub-sectors studied. Large enterprises (250+ employees) report that 33.3 per cent of staff are fully proficient, with half (50 per cent) considered nearly proficient, while medium-sized enterprises (100–249 employees) show 30.0 per cent fully proficient and the rest (70 per cent) nearly proficient. Small enterprises (10–99 employees) report greater variability, with 36.5 per cent fully proficient, 39.6 per cent nearly proficient, and 22.9 per cent proficient "over a half" of the time. (Table 12)

By sector, freight rail transport demonstrates the highest staff proficiency levels, with 67.4 per cent of employees being fully proficient, compared to only 10.9 per cent in freight transport by road, where over 30 per cent are only semi-proficient. Overall, only 35.7 per cent of staff across all enterprises interviewed are fully proficient, highlighting the need for skill development in many roles. (Table 12)

Table 12. Proficiency of staff at the current job (Per cent %)

3.1. How many of your existing staff would you regard as being fully proficient at their current job?					
	Per centage share of businesses (%)				
Size of the enterprise	**All**	**Nearly all**	**Over a half**	**Some**	**Total**
Large (250 persons and more)	33.3	50.0	16.7	0.0	100
Medium (100–249 persons)	30.0	70.0	0.0	0.0	100
Small (10–99 persons)	36.5	39.6	22.9	1.0	100
Total	35.7	42.9	20.5	0.9	100
Enterprise by economic activity	**All**	**Nearly all**	**Over a half**	**Some**	**Total**
Freight transport by rail	67.4	28.3	4.3	0.0	100
Freight transport by road	10.9	56.4	30.9	1.8	100
Freight transport by rail and road	27.3	36.4	36.4	0.0	100
Total	35.7	42.9	20.5	0.9	100

Source: Pilot Establishment Skills Survey

3.3.2. Skills gaps of current staff by occupation mentioned

The analysis of skill gaps across occupations[12], based on Table 13, sheds light on the most reported deficiencies by businesses for occupations where staff are not fully proficient.

Among specialists, financial professionals were found to have a significant gap in organizational and planning skills (40 percent), which is essential for effective management and strategic decision-making. This was followed by a lack of proficiency in the ability to calculate, read, and use figures and tables (20 percent), which is a fundamental skill in financial analysis.

For specialists in public relations, sales, and marketing, ICT skills emerged as the most pressing need (11.4 percent), underscoring the importance of digital literacy in today's labour market. Additionally, there were notable gaps in decision-making, negotiation, and communication skills (ranging from 5.7 to 8.6 percent), further highlighting areas where VET programs could focus on enhancing soft skills to complement technical competencies. (Table 13)

For legal professionals, businesses reported evenly distributed gaps in technical skills, ICT skills, and leadership skills, with each category affecting 6.7 percent of respondents. In the case of technicians in physical and technical sciences, there was a notable deficiency in understanding written documents (100 percent of respondents), highlighting the need for VET to strengthen literacy and comprehension skills alongside technical training. For other technicians businesses reported smaller but still significant gaps in technical skills, ICT skills, and leadership skills (each at 6.7 percent), which point to the need for comprehensive VET curricula that balance technical proficiency with leadership and digital skills to adapt to evolving technologies. Auxiliary professional staff working in purchasing and sales faced a substantial gap in organizational and planning skills (15 percent), which is essential for effective

[12] These occupations were highlighted by the businesses interviewed.

inventory and supply chain management. Commercial service agents and office workers were reported with notable deficiencies in ICT skills (11.1 percent and 8.3 percent, respectively), along with organizational skills and reading comprehension. (Table 13)

For technical and manual occupations businesses also reported significant gaps, particularly in numeracy and technical skills. Shapers, welders, and rollers showed deficiencies in technical skills and the ability to calculate, read, and use figures and tables (50 percent each), which are essential for precise work in manufacturing and construction. Similarly, for locksmiths and repairmen businesses reported a complete lack of numeracy skills (100 percent), underscoring a critical need for foundational numeracy training within VET programs. Electrical workers and locomotive drivers also showed significant gaps in technical knowledge and specific technical skills (50 percent and 100 percent, respectively), suggesting that VET curricula need to focus on specialized technical competencies for these roles. (Table 13)

For drivers of trucks, buses, and trolleybuses, ICT skills were identified as a major gap (34 percent), which is increasingly important for route planning, navigation, and vehicle maintenance in the digital age. Smaller gaps were also identified in technical knowledge and problem-solving skills (each at 2.1 percent), pointing to areas where VET programs could introduce digital tools and technologies to improve operational efficiency and safety. (Table 13)

Table 13. Most reported skill gaps across occupations highlighted by businesses (Per cent %)

3.2. For those staff who are not fully proficient, could you highlight the skills that were lacking?			
Code	**Occupation**	**Key Skills Lacking**	**Per cent (%)**
241	Specialists - Financial Professionals	Organizational and Planning Skills	40.0
		Ability to Calculate, Read, and Use Figures and Tables	20.0
243	Specialists - Public Relations, Sales, and Marketing	ICT Skills	11.4
		Decision-Making Skills	8.6
		Negotiation Skills	5.7
		Communication Skills	5.7
261	Specialists - Professionals in the Field of Law	Technical Skills	6.7
		ICT Skills	6.7
		Leadership Skills	6.7
311	Technicians - Physical and Technical Sciences (1)	Understanding Written Documents	100
312	Technicians - Physical and Technical Sciences (2)	Technical Skills	6.7
		ICT Skills	6.7
		Leadership Skills	6.7
332	Auxiliary Professional Staff - Purchasing and Sales	Organizational and Planning Skills	15
		Technical Skills	5.0
		ICT Skills	5.0
		Negotiation Skills	5.0
333	Commercial Service Agents	ICT Skills	11.1
		Decision-Making Skills	5.6
		Problem-Solving Skills	5.6
		Communication Skills	5.6
411	Office Workers of a Wide Profile	ICT Skills	8.3
		Organizational Skills	8.3
		Reading Skills	8.3
		Ability to Calculate, Read, and Use Figures and Tables	8.3
432	Employees Engaged in Accounting for Materials and Transport	Organizational and Planning Skills	10.7
		ICT Skills	7.1
		Decision-Making Skills	7.1
721	Shapers, Welders, Roller's men, and Related Workers	Technical Skills	50.0
		Ability to Calculate, Read, and Use Figures and Tables	50.0
723	Locksmiths and Repairmen	Ability to Calculate, Read, and Use Figures and Tables	100.0
741	Electrical Workers	Technical Skills	50.0
		Technical Knowledge	50.0
831	Locomotive Drivers and Related Workers	Technical Skills	100
833	Drivers of Trucks, Buses, and Trolleybuses	ICT Skills	34.0
		Ability to Calculate, Read, and Use Figures and Tables	2.1
		Problem-Solving Skills	2.1
		Technical Skills	2.1

Source: Pilot Establishment Skills Survey. Note: The percentages represent the frequency with which each key skill was identified as lacking within each occupation. [1] These occupations were highlighted by the businesses interviewed. The total does not add up to 100 per cent as only the most significant skill gaps are listed in the Table, and other gaps may not be included.

To bridge these skill gaps, Kazakhstan's education and training system should not only focus on the development of technical expertise but also needs to enhance digital literacy and strengthen foundational skills to ensure that workers are well-equipped to meet the evolving competency demands of occupations.

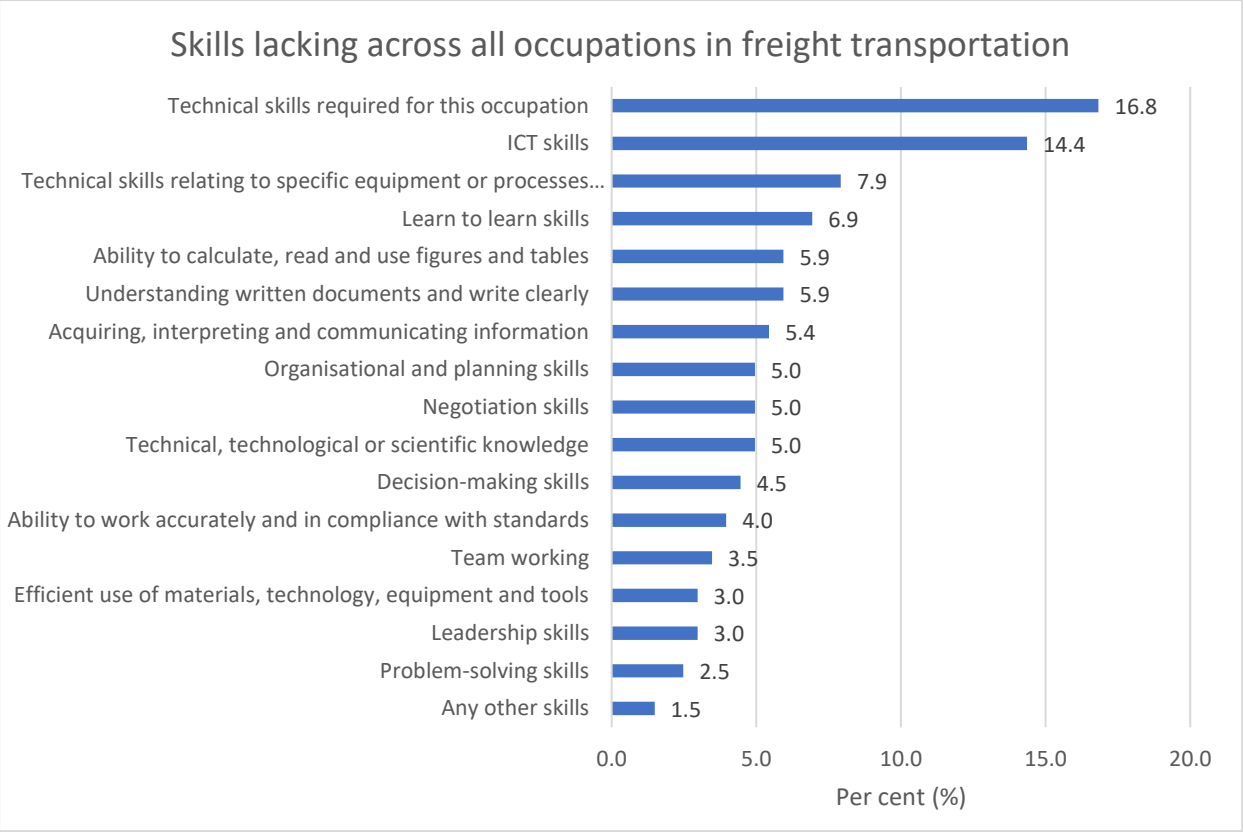
Targeted education and training initiatives, designed in consultation with businesses, will be essential in addressing these gaps and improving overall workforce competency to cater for the freight transportation sector.

3.3.3. Most pronounced skills gaps of current staff (aggregated)

Figure 1 visualizes the most pronounced skill gaps reported in freight transportation. It reveals that the most reported gaps are technical skills required for the occupation (16.8 percent) followed by ICT skills (14.4 percent) and technical skills related to specific equipment or processes used in the establishment (7.9 per cent). These findings indicate significant lack of both: core technical abilities and digital competencies. (Figure 1)

There is also a need for "learn-to-learn" skills (6.9 percent). In a workforce context, "learn-to-learn" skills are essential for individuals to continually acquire new knowledge, stay updated with technological advances, and adapt to evolving job demands. (Figure 1)

Figure 1. Skills lacking across all occupations in freight transportation (Per cent %)



Source: Pilot Establishment Skills Survey

Additionally, gaps in basic skills such as understanding written documents (5.9 percent) and the ability to calculate, read, and use figures and tables (5.9 percent) highlight a need for stronger foundational

literacy and numeracy. Leadership and management-related gaps are also notable, with leadership skills (3.0 percent) and decision-making skills (4.5 percent) showing moderate shortages. (Figure 1)

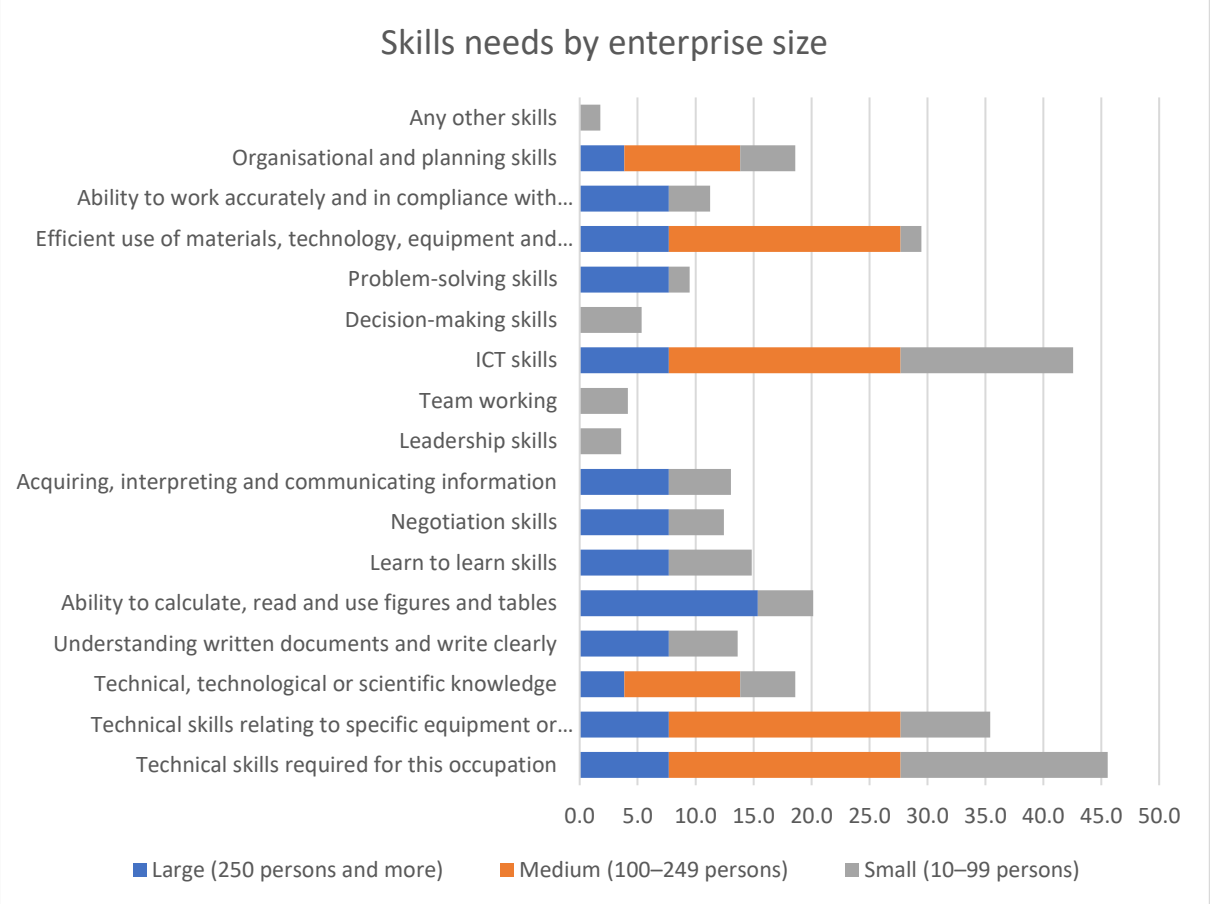
Acquiring, interpreting, and communicating information is also an issue (5.4 percent), underscoring the importance of adaptability and effective communication in the sector. Finally, shortcomings in organizational and planning skills (5.0 percent) and the efficient use of materials, technology, equipment, and tools (3.0 percent) point to operational inefficiencies and a need for better resource management. (Figure 1)

The analyses highlight a broad need for enhancing technical capabilities, ICT proficiency, and foundational skills across various roles in road and rail freight transportation.

3.3.4. Skills gaps of current staff by enterprise size

Figure 2 highlights the skill needs of staff reported by businesses of different sizes. Overall, the skill priorities differ notably by business size.

Figure 2. Skill gaps of staff by enterprise size (Per cent %)



Source: Pilot Establishment Skills Survey

Large enterprises (250+ employees) demonstrate a relatively even distribution of skill requirements, with the ability to calculate, read, and use figures and tables standing out at 15.4 per cent. Other notable needs include technical skills tied to specific equipment or processes, learning to learn, ICT skills, and adherence to standards, all reported at 7.7 per cent. Interestingly, leadership, team working,

and decision-making skills are not mentioned, reflecting a focus on technical and operational expertise rather than managerial or interpersonal skills. (Figure 2)

Medium-sized businesses (100–249 employees) emphasize a narrower set of priorities. Key skills include technical knowledge, skills related to specific equipment or processes, and ICT competencies, each accounting for 20 per cent of their reported needs. Organizational and planning skills also appear, though at a lower 10 per cent. Many other skills, such as leadership or problem-solving, are absent from their reports, suggesting that these companies concentrate on specialized technical abilities to address their operational requirements. (Figure 2)

Small businesses (10–99 employees) present a more diverse profile of skill needs. Technical skills related to equipment or processes are the most significant at 17.9 per cent, followed by ICT skills at 14.9 per cent. Other skills, including problem-solving, teamwork, and organizational planning, are present but with smaller shares. This broad range points to the flexibility and multitasking often required in smaller enterprises, where employees are likely expected to fulfill multiple roles. (Figure 2)

3.3.5. Mitigation measures to address skills gaps

Businesses are actively addressing skill gaps through internal measures, particularly by investing in further training for their employees, which is the most common strategy across all enterprise sizes and sectors (52.6 per cent). This reliance on in-house training underscores a significant gap in the ability of the education and vocational education and training (VET) system to supply adequately skilled workers to meet business needs. (Table 14)

Small enterprises (10–99 employees) particularly highlight the limitations of the current education and VET system. While 52.3 per cent of businesses provide training themselves, a notable 15.4 per cent take no action, likely due to resource constraints, and 18.5 per cent resort to other unspecified measures. Medium-sized enterprises (100–249 employees) show a similar dependency on internal training (37.5 per cent), with some diversifying their efforts through changes in work locations (12.5 per cent) or additional strategies (37.5 per cent). Large enterprises (250 or more employees), with greater resources at their disposal, rely exclusively on internal training (100 per cent), suggesting that even they cannot rely on external training systems. (Table 14)

From a sectoral perspective, the freight transport by rail sector, prioritizes additional training (where 81.0 per cent) indicating a stronger or more immediate need to address skill deficiencies of staff. In the freight transport by road sub-sector only 40.8 per cent of businesses provided further training. Businesses operating across both sectors also show significant reliance on further training (50.0 per cent) with a notable 33.3 per cent resorting to other measures and increased hiring (16.7 per cent). (Table 14)

These findings suggest that most businesses, regardless of size and sub-sector, are compensating for gaps in the education and VET system. The heavy reliance on internal training, even among large enterprises, highlights not only the inefficiencies but also the significant time and financial costs businesses incur to fill these gaps. This points to the urgent need for closer alignment between VET programs and sector demands to better equip the workforce with the skills required, thereby reducing the burden on businesses and improving overall productivity.

Table 14. Measures undertaken by businesses to mitigate skill gaps (Per cent %)

3.3. What is being done to overcome the problem of skills gaps?								
	Per cent (%)							
	Hiring has increased	**Further training has been provided**	**Other strategies have been used to promote learning**	**Work location within the company has been changed**	**No special measures have been taken**	**Influence has been used on (providers of) education in order to ensure the inflow of newcomers**	**Other measures**	**Total**
Size of the enterprise								
Large (250 persons and more)	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100
Medium (100–249 persons)	12.5	37.5	0.0	12.5	0.0	0.0	37.5	100
Small (10–99 persons)	9.2	52.3	1.5	1.5	15.4	1.5	18.5	100
Total	9.2	52.6	1.3	2.6	13.2	1.3	19.7	100
Enterprise by economic activity								
Freight transport by rail	9.5	81.0	0.0	4.8	4.8	0.0	0.0	100
Freight transport by road	8.2	40.8	2.0	2.0	18.4	2.0	26.5	100
Freight transport by rail and road	16.7	50.0	0.0	0.0	0.0	0.0	33.3	100
Total	9.2	52.6	1.3	2.6	13.2	1.3	19.7	100

Source: Pilot Establishment Skills Survey

3.4. Workforce development[13]

Workforce development is closely tied to the overall investment of a nation's education and training system, including vocational education and training (VET), in equipping individuals with the skills employers require. Ideally, education systems should ensure individuals are job-ready, minimizing the need for businesses to spend time and resources on additional training.

3.4.1. Training activity in enterprises

The Pilot ESS data shows that enterprises reported significant training activity in most occupational groups, indicating that the current education and vocational training systems may not be sufficiently preparing the workforce for the specific, job-related skills that employers need. While the education and VET programs offer foundational knowledge, the high rates of additional training provided by

[13] Workforce development refers to strategies, programs, and activities aimed at improving the skills, capabilities, and readiness of the workforce to meet current and future labor market demands.

businesses suggest a gap between the skills taught in formal education and those required in the workplace. (Table 15)

For instance, "Drivers and machine operators", with the highest training participation at 88.4 per cent, likely require specialized training related to safety, machinery operation, and regulatory compliance, areas that may not be fully covered in standard VET programs. Similarly, the 68.8 per cent of "Craft and related trades workers" undergoing further training, points to the need for regular updates in technical skills, which may not be sufficiently addressed during their initial training. Similarly, the 63.2 per cent participation among "Managers" suggests that leadership and strategic management skills are areas where continuous development is crucial and may not be fully integrated into education and VET programs. (Table 15)

These findings underscore the need for a closer alignment between the education and VET systems and businesses in freight transport, ensuring that workers are better equipped with the specific skills required, reducing the reliance on costly and time-consuming additional training.

Table 15. Employees that participated in any training courses organized within or outside of the workplace by major occupational group (Per cent %)

4.1. During the past 12 months, have your employees participated in any training courses organized within or outside of the workplace and financed in whole or in part by the enterprise?		
Major occupations	Yes	Per cent (%) of employees (on average) who took part in professional training of enterprises
1. Managers	61	63.2
2. Professionals	36	51.5
3. Technicians and associate professionals	3	56.5
4. Clerical support workers	8	39.6
5. Service and sale workers	9	60.2
6. Craft and related trades workers	4	68.8
7. Drivers and machine operators	37	88.4
8. Elementary occupations	4	44.0

Source: Pilot Establishment Skills Survey. Source: Pilot Establishment Skills Survey. Note: The percentages in Table 16 do not sum up to 100 per cent because they represent the average proportion of employees within each occupational group who participated in professional training courses, rather than the distribution of all employees who did or did not participate in training. The values indicate the share of employees who took part in training as a percentage of the total employees in the respective occupational category and economic activity, averaged across the enterprises surveyed. This method focuses solely on the training participation rate among employees and excludes non-participation percentages from the calculation.

The analysis of Table 16 reveals notable differences in employee training participation across subsectors of freight transport, rail, road, and combined rail and road, highlighting variations in training priorities and needs.

In Freight transport by rail, "Drivers and machine operators" had the highest training participation rate at 100 per cent, indicating that safety and operational skills are a top priority in this sub-sector. "Craft and related trades workers" had a participation rate of 85 per cent, and "Technicians and associate professionals" followed with a strong participation rate of 56.5 per cent, demonstrating the emphasis on specialized and technical skills development. "Clerical support workers" had the lowest training

participation at 39.6 per cent, suggesting that additional training needs are less pronounced for administrative roles. (Table 16)

In Freight transport by road, "Drivers and machine operators" again had the highest training participation rate at 87.7 per cent, underscoring the critical need for operational and safety training. "Managers" had a high participation rate of 74.6 per cent, indicating significant needs for leadership and strategic training. "Professionals" followed with 66.3 per cent, reflecting the importance of specialized skill development in this sub-sector. "Service and sales workers" had a relatively lower participation rate of 27.3 per cent, suggesting that training is either less needed or not prioritized for this group in the road freight sub-sector. (Table 16)

Table 16. Employees participated in any training courses organized within or outside of the workplace by economic activity (Per cent %)

4.1. During the past 12 months, have your employees participated in any training courses organized within or outside of the workplace and financed in whole or in part by the enterprise?					
		Per cent (%)			
		Freight transport by rail	Freight transport by road	Freight transport by rail and road	Total
1.Managers	Yes	28	26	7	61
	%, average	48.1	74.6	82.0	63.2
2. Professionals	Yes	22	10	4	36
	%, average	31.9	66.3	100.0	51.5
3. Technicians and associate professionals	Yes	3			3
	%, average	56.5			56.5
4. Clerical support workers	Yes	8			8
	%, average	39.6			39.6
5. Service and sale workers	Yes	3	3	3	9
	%, average	53.3	27.3	100.0	60.2
6. Craft and related trades workers	Yes	2	2		4
	%, average	85.0	52.5		68.8
7. Drivers and machine operators	Yes	3	34		37
	%, average	100.0	87.7		88.4
8. Elementary occupations	Yes	4			4
	%, average	44.0			44.0

Source: Pilot Establishment Skills Survey. Note: The percentages in Table 16 do not sum up to 100 per cent because they represent the average proportion of employees within each occupational group who participated in professional training courses, rather than the distribution of all employees who did or did not participate in training. The values indicate the share of employees who took part in training as a percentage of the total employees in the respective occupational category and economic activity, averaged across the enterprises surveyed. This method focuses solely on the training participation rate among employees and excludes non-participation percentages from the calculation.

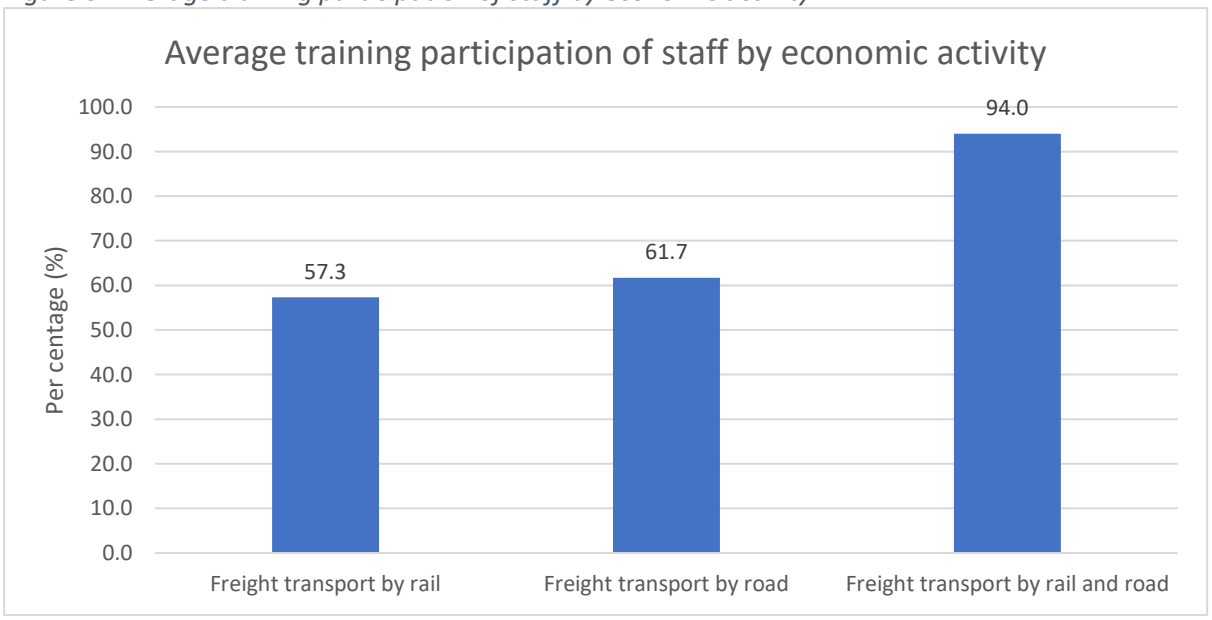
In Freight transport by rail and road, the highest participation rates were observed among "Professionals" and "Service and sales workers", both at 100 per cent. This indicates a strong focus on skill development in customer-facing and specialized roles within the combined sector. (Table 16)

It is interesting to note that across all sectors," Drivers and machine operators" consistently had the highest training participation rates, reflecting the importance of specialized skills in driving and machine operating roles, skills that do not seem to be adequately addressed by the current education and VET system.

The aggregated training participation data from the Pilot ESS shows that enterprises in combined freight transport by rail and road required the highest training investments (94.0 per cent on average), compared to 61.7 per cent on average for road transport and 57.3 per cent on average for rail transport. This indicates that enterprises operating across multiple transport modes face greater skill development challenges, likely due to the complexity of their operations and the diverse skill sets required. (Figure 3)

Although the average training investments differ, all subsectors show substantial enterprise-led training efforts, underscoring the widespread reliance on in-house skill development to bridge gaps left by the broader education and training system. Occupations with particularly high training needs include "drivers and machine operators" and "craft and related trades workers" in combined rail and road transport. (Figure 3)

Figure 3. Average training participation of staff by economic activity



Source: Pilot Establishment Skills Survey

3.4.2. Type of training provided in enterprises

The analysis of Table 17 reveals notable differences in the types of training financed by companies, based on size and transport subsector.

For large enterprises (250+ employees), "Occupational health and safety" training is the most commonly financed area, with 66.7 per cent of companies investing in it. The nature of work in large businesses often involves higher-stakes activities, advanced machinery, and potentially hazardous environments, making safety training essential to ensure compliance and prevent incidents. In medium-sized enterprises (100–249 employees), "Occupational health and safety" remains the top priority, with 57.1 per cent of companies financing this type of training, though to a slightly lesser extent than in large enterprises. Small enterprises (10–99 employees), on the other hand, allocate the

most resources to "Training in new technology/new product or service", with 23 per cent of companies investing in this area. This suggests that smaller companies are focusing on adapting to new trends and technologies to remain competitive, even though their overall training budgets may be smaller. (Table 17)

When analyzing by transport subsector, the highest percentage of training participation is seen in freight transport by road, where training in new technology/new product or service is prioritized by 62.5 per cent of companies. This indicates that innovation and the adoption of new technologies are crucial in the road transport sector, possibly due to the introduction of new vehicles or advancements in logistics systems.

In freight transport by rail, occupational health and safety is the most financed area, with 46.9 per cent of companies investing in it, reflecting the critical focus on safety in this sector.

Finally, in freight transport by rail and road, training in new technology/new product or service is also a significant priority, with 62.5 per cent of companies allocating resources to this area, signalling the combined sector's strong focus on technological development. (Table 17)

The training emphasis on health, safety, and technological innovation in the freight transport sector suggests that companies are aligning their training priorities with operational needs and sector demands. (Table 17)

Table 17. Employees' participated in training courses organized within or outside of the workplace, by type of training provided

4.2. In which areas did your company finance the training?							
Type of training financed	**Large (250 persons and more)**	**Medium (100–249 persons)**	**Small (10–99 persons)**	**Freight transport by rail**	**Freight trans-port by road**	**Freight trans-port by rail and road**	**Total**
Induction training	16.7	14.3	5.4	12.5	4.3	0.0	6.9
Occupational health and safety	66.7	57.1	32.4	46.9	31.9	25.0	36.8
Compliance with regulatory requirements, customer requirements or quality system requirements	0.0	14.3	10.8	3.1	17.0	0.0	10.3
IT training	0.0	0.0	5.4	0.0	8.5	0.0	4.6
Management and administration	0.0	0.0	4.1	6.3	2.1	0.0	3.4
Training in new technology/new product or service	0.0	0.0	23.0	15.6	14.9	62.5	19.5
Environmental protection	0.0	14.3	1.4	0.0	4.3	0.0	2.3
Accounting and finance	16.7	0.0	14.9	15.6	14.9	0.0	13.8
Any other types	0.0	0.0	2.7	0.0	2.1	12.5	2.3
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Source: Pilot Establishment Skills Survey

3.5. Anticipated hiring demand for labour

Understanding anticipated hiring demand is essential for workforce planning and skills development. It offers a quantitative perspective on predicted labour market needs, helping to identify the number of workers required in specific sectors or occupations. By analysing these trends, training providers can better align program capacities with industry demands, ensuring a sufficient supply of skilled workers to meet future labour market requirements.

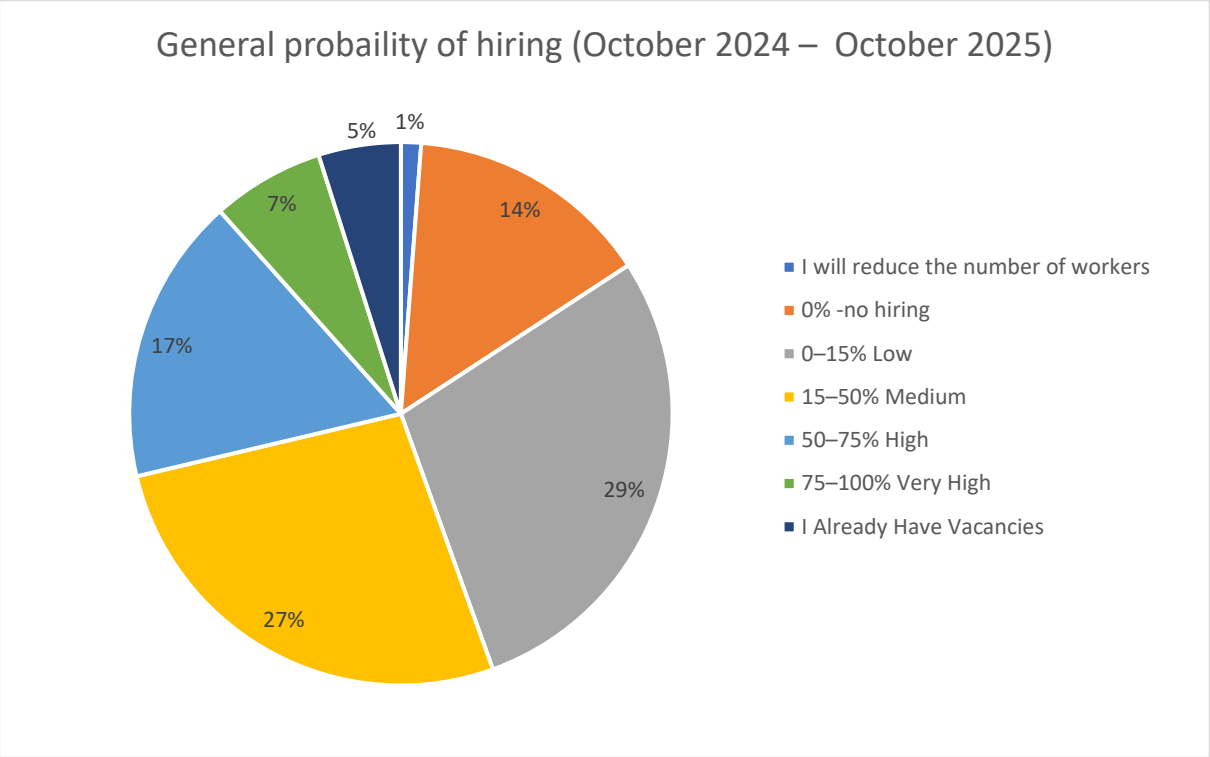
3.5.1. General probability of hiring

The Pilot ESS data reveals cautious hiring intentions in freight transport, with many businesses showing limited plans to expand their workforce. Specifically, 1.2 per cent of businesses plan to reduce their workforce, potentially due to cost reduction or efficiency improvements linked to technological advancements or structural changes. A larger portion, 14.6 per cent, reported no plans to hire at all, suggesting a phase of consolidation in the sector, possibly driven by increasing automation and digitalization. Additionally, 28.7 per cent of businesses indicated a low probability of hiring (0–15 per cent), which may reflect economic uncertainty or challenges, especially among smaller businesses. (Figure 4)

On the other hand, 26.8 per cent of businesses projected a medium probability of hiring (15–50 per cent), while 17.1 per cent indicated a high likelihood (50–75 per cent) of hiring, pointing to some optimism for growth, particularly in operational and technical roles like drivers or maintenance staff, which remain crucial for day-to-day operations. Only 6.7 per cent of businesses reported a very high probability of hiring (75–100 per cent), emphasizing that staffing needs are likely concentrated in critical areas rather than across the freight transport sector. Furthermore, 4.9 per cent of businesses reported having vacancies, indicating immediate hiring needs in response to operational demands or high turnover. (Figure 4)

These findings suggest that the freight transport sector is hesitant to hire broadly, focusing instead on filling essential vacancies to maintain operational efficiency. The limited hiring growth, combined with the drive to reduce workforce numbers, highlights the sector's emphasis on technological advancements and cost optimization, with a potential shift toward a reduced reliance on manpower. Consequently, training investments must strike a balance between meeting quantity and quality demands in the evolving sector. (Figure 4)

Figure 4. General hiring demand in rail and road freight transportation



Source: Pilot Establishment Skills Survey

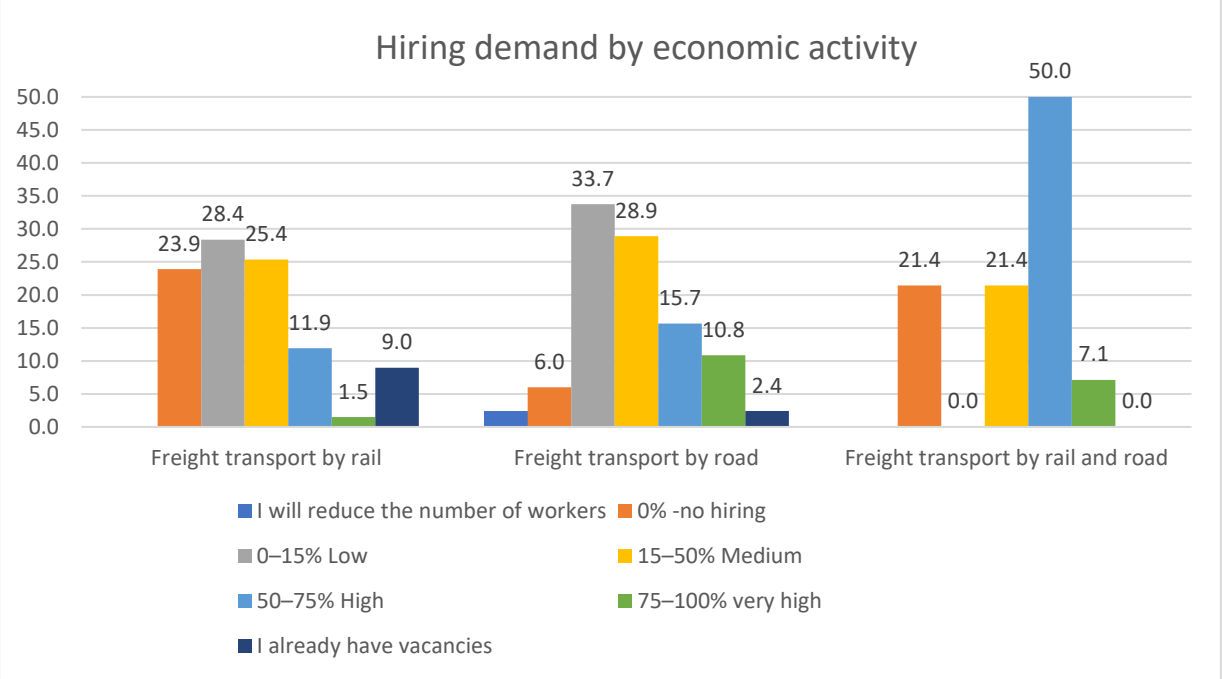
3.5.2. Probability of hiring by economic activity

When looking at the hiring plans across different transport sub-sectors in Kazakhstan, freight transport by rail, road, and combined rail and road, the data reflects varying levels of hiring activity or even workforce reduction. (Figure 5)

For the rail freight sub-sector, no companies report plans to reduce their workforce. However, a significant portion of companies, 23.9 per cent, indicate no hiring activity, while 28.4 per cent exhibit low hiring activity. Medium and high hiring levels are close, with 25.4 per cent of companies categorized as medium and 11.9 per cent as high. Only 1.5 per cent of rail companies fall into the "very high" hiring category, and 9.0 per cent already report existing vacancies. This distribution reflects very moderate hiring trends, with a balance of low-to-medium hiring activity and limited workforce reductions. (Figure 5)

In contrast, the road freight sub-sector shows a more dynamic hiring environment. While 2.4 per cent of companies plan workforce reductions, a smaller proportion of companies (6.0 per cent) report no hiring activity compared to the rail freight sub-sector. Medium hiring activity is the most common, involving 33.7 per cent of companies, followed by high activity at 28.9 per cent and very high activity at 15.7 per cent. Notably, 10.8 per cent of road companies already have vacancies, reflecting the sub-sector's heightened demand for selected positions and higher staff turnover. (Figure 5)

Figure 5. General probability of hiring in rail and road freight transportation, October 2024 – October 2025 (Per cent %)



Source: Pilot Establishment Skills Survey

For combined rail and road freight transport companies, no workforce reductions are planned, but hiring activity exhibits a unique distribution. About 21.4 per cent of these companies report either no hiring or low hiring activity, while none indicate medium activity. High hiring activity is reported by 21.4 per cent of the businesses interviewed, and 50.0 per cent are in the very high category. Interestingly, 7.1 per cent of these businesses already have vacancies. This indicates strong hiring demand in the combined sector, likely due to its operational complexity and broader business scope. (Figure 5)

The analysis highlights, hiring plans across Kazakhstan's freight transport sub-sectors show varied trends, with rail freight exhibiting moderate hiring activity and no workforce reductions, road freight showing more dynamic hiring, and combined rail and road freight demonstrating strong demand, particularly for highly-skill positions, with significant vacancies.

3.5.3. Probability of hiring by major occupations

The hiring demand across occupations also varies significantly, with certain roles experiencing exceptionally high recruitment probabilities. The highest hiring demand is observed for “The First Heads of Institutions, Organizations, and Enterprises”, with 100 per cent of respondents reporting a very high likelihood (75–100 per cent) of hiring within the next 12 months. This underscores the critical need for leadership roles to support strategic decision-making during restructuring and modernization processes.

Similarly, “Specialists/Professionals in the Field of Engineering” (Excluding Electrical) and “Electrical Engineers” also demonstrated strong demand, with 100 per cent of respondents indicating hiring needs. For electrical engineers, this demand was already reflected in existing vacancies, pointing to immediate demand in this area. (Table 18)

Table 18. Probability of hiring new employees, by occupation

5.1. Considering the situation of your business today, how high is the probability of hiring new employees in the coming 12 months?			
CODE	Occupation	Probability of Hiring New Employees in the Coming 12 Months	Per cent (%)
121	The First Heads of Institutions, Organizations, and Enterprises	75–100% Very High	100
214	Specialists/Professionals in the Field of Engineering (Excluding Electrical)	15–50% Medium	100
215	Electrical Engineers	I Already Have Vacancies	100
237	Other Specialists/Professionals in the Field of Education	75–100% Very High	100
241	Specialists/Financial Professionals	0% -no hiring	12.5
		0–15% Low	37.5
		15–50% Medium	12.5
		50–75% High	12.5
		75–100% Very High	12.5
		I Already Have Vacancies	12.5
242	Specialists/Professionals in the Field of Administration	0–15% Low	100
243	Specialists/Professionals in Public Relations, Sales, and Marketing	0–15% Low	15
		15–50% Medium	35
		50–75% High	35
		75–100% Very High	10
		I Already Have Vacancies	5
261	Specialists/Professionals in the Field of Law	15–50% Medium	50
		I Already Have Vacancies	50
263	Specialists/Professionals in the Humanitarian Sphere and Religion	0–15% Low	100
311	Technicians in the Field of Physical and Technical Sciences (1)	0–15% Low	100
312	Technicians in the Field of Physical and Technical Sciences (2)	15–50% Medium	50
		I Already Have Vacancies	50.0
332	Auxiliary Professional Staff for the Purchase and Sale of Goods	0–15% Low	16.7
		15–50% Medium	25.0
		50–75% High	58.3
333	Commercial Service Agents	0–15% Low	25.0
		15–50% Medium	33.3
		50–75% High	16.7
		75–100% Very High	16.7
		I Already Have Vacancies	8.3
411	Office Workers of a Wide Profile	15–50% Medium	100
432	Employees Engaged in Accounting for Materials and Transportation	0% -no hiring	6.7
		0–15% Low	40.0
		15–50% Medium	20.0
		50–75% High	33.3
711	Builders/Installers and Workers of Related Occupations	50–75% High	100
721	Shapers, Welders, Roller's men and Related Workers	0% -no hiring	20.0
		0–15% Low	20.0
		15–50% Medium	60.0
723	Locksmiths and Repairmen	0% -no hiring	25.0
		0–15% Low	50.0
		50–75% High	25.0

741	Electrical Workers	15–50% Medium	100
754	Other Workers in Industry, Construction, Transportation and Related Occupations	15–50% Medium	100
810	Supervisors (Foremen) Over Operators of Industrial Stationary Equipment	0–15% Low	100
831	Locomotive Drivers and Related Workers	75–100% Very High	33.3
		I Already Have Vacancies	66.7
833	Drivers of Trucks, Buses, and Trolleybuses	0% -no hiring	3.1
		0–15% Low	37.5
		15–50% Medium	37.5
		50–75% High	9.4
		75–100% Very High	12.5
834	Drivers of Mobile Equipment	0–15% Low	50
		15–50% Medium	50
	General Without Occupational Specification	I will reduce the number of workers	5.9
		0% -no hiring	5.9
		0–15% Low	29.4
		15–50% Medium	8.8
	Total	I will reduce the number of workers	1.2
		0% -no hiring	14.6
		0–15% Low	28.7
		15–50% Medium	26.8
		50–75% High	17.1
		75–100% Very High	6.7
		I Already Have Vacancies	4.9

Source: Pilot Establishment Skills Survey

Other occupations with notable hiring demand include “Builders/Installers” and “Workers of Related Occupations”, with 100 per cent of businesses reporting a high probability (50–75 per cent) of recruitment. Additionally, “Locomotive Drivers and Related Workers” demonstrated significant demand, with 66.7 per cent of respondents reporting current vacancies and 33.3 per cent indicating a very high probability of hiring. (Table 18)

The lowest hiring demand was reported for “Specialists/Financial Professionals”, where 50 per cent of respondents indicated low or no likelihood of hiring (0–15 per cent), reflecting reduced demand for these roles in the current business climate. Similarly, “Supervisors Over Operators of Industrial Stationary Equipment” and “Technicians in the Humanitarian Sphere and Religion “showed 100 per cent low probability (0–15 per cent) of recruitment, indicating limited operational reliance on these positions. (Table 18)

This data underscores a clear prioritization of hiring for roles critical to operational efficiency in the sector.

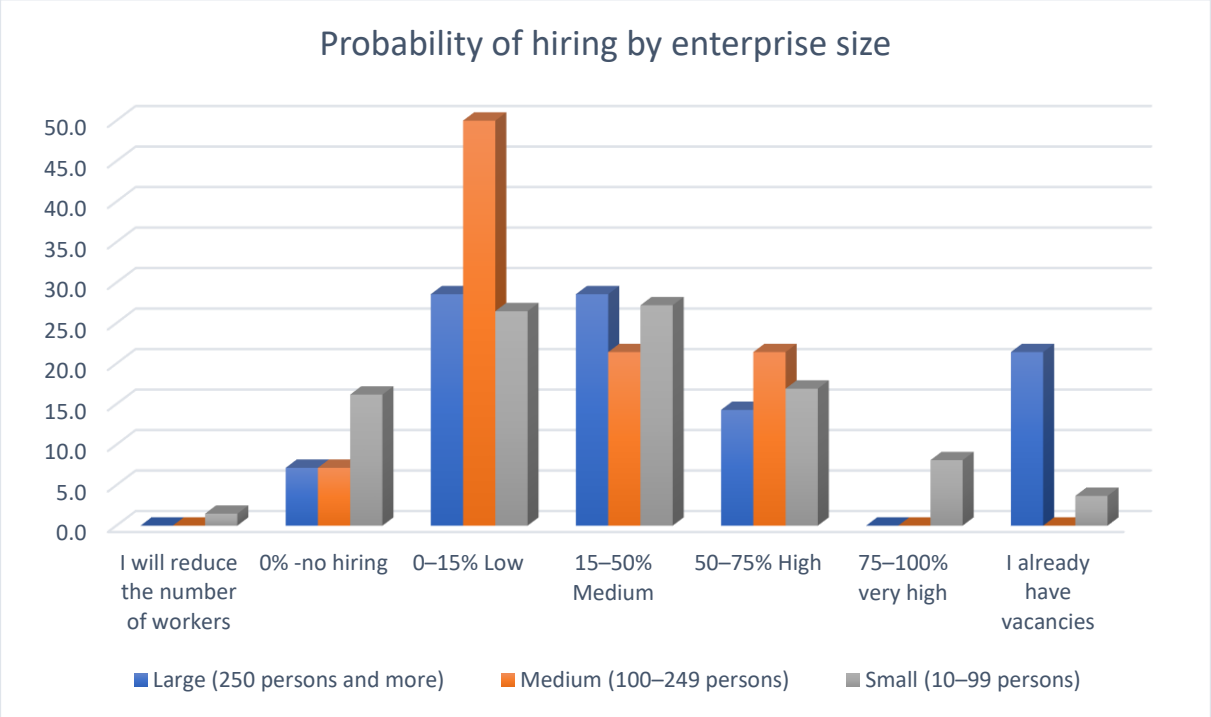
3.5.4. Probability of hiring by enterprise size

Figure 6 illustrates the probability of hiring new employees in the next 12 months, categorized by company size.

Among large enterprises (250+ employees), no firms indicated plans to reduce their workforce, and none reported existing vacancies. A small percentage (7.1 per cent) predicted no hiring at all. The majority of large businesses expressed medium (28.6 per cent) or high (28.6 per cent) probability of hiring, with 14.3 per cent indicating a very high likelihood.

Medium-sized companies (100–249 employees) also showed no plans for workforce reduction or reported existing vacancies. However, a higher percentage (50 per cent) indicated a low probability of hiring, with 21.4 per cent each reporting medium and very high probabilities of hiring. (Figure 6)

Figure 6. Probability of hiring by enterprise size (October 2024 – October 2025)



Source: Pilot Establishment Skills Survey

In small enterprises (10–99 employees), 1.5 per cent anticipated workforce reductions, and 16.2 per cent reported no plans to hire. Most small businesses expressed medium (26.5 per cent) or high (27.2 per cent) probability of hiring, with 16.9 per cent indicating a very high likelihood. Notably, 8.1 per cent of small firms already reported having vacancies, and 3.7 per cent did not classify their hiring intentions. (Figure 6)

From the analysis it becomes clear that hiring demand varies significantly by company size, with larger firms emphasizing steady growth, medium-sized enterprises adopting a more measured approach, and small businesses navigating a mix of workforce adjustments and urgent hiring needs.

3.6. Business strategy and structure

The business strategy and structure of enterprises in the road and rail freight transport sectors are critical to their competitiveness, workforce retention, and operational efficiency. An integral component of any business strategy is the payment and benefits structure, which influences an enterprise's ability to attract and retain skilled workers. This section examines how the companies interviewed perceive their compensation and social benefits packages relative to their competitors in

the sector, providing insight into the alignment of pay and benefits strategies with labour market dynamics and workforce expectations.

3.6.1. Enterprises' perceptions of the competitiveness of pay and benefits for different worker categories

Enterprises expressed varying levels of confidence in the competitiveness of their pay and benefits across different worker categories. White-collar workers typically hold professional, managerial, or administrative roles that are often office-based and require specialized skills or higher education. In contrast, blue-collar workers perform manual or technical labour, often in industrial, construction, or transportation settings, and their roles usually emphasize physical tasks over formal education.

For white-collar skilled workers, 44.4 per cent of businesses rated their compensation as "better" (5), while an equal proportion assessed it as "above average" (4). Only 11.1 per cent considered their packages "average" (3), reflecting strong confidence in their ability to attract and retain skilled professionals. However, white-collar semi-skilled workers, received more mixed evaluations. While 42.9 per cent rated their pay and benefits as "above average" (4) and 38.1 per cent as "better" (5), 18.1 per cent viewed them as "average" (3), and 1 per cent rated them "below average" (2). This indicates a slightly lower level of confidence in the competitiveness of pay for semi-skilled roles.

Table 19. Perceptional ranking of payment and social benefits when compared to competitors

6.1. Compared to other employers in the same sector, would you say that the pay and benefits you offer are better, worse or about the same? Please grade in a scale from 1 (worse) to 5 (better)				
Ranking: 1 (worse) to 5 (better)	**White collar skilled**	**White collar semi-skilled**	**Blue collar skilled**	**Blue collar semi-skilled**
1	0.0	0.0	0.0	0.0
2	0.0	1.0	1.3	1.4
3	11.1	18.1	9.7	19.4
4	44.4	42.9	53.2	43.5
5	44.4	38.1	35.7	35.7
Total	**100**	**100**	**100**	**100**

Source: Pilot Establishment Skills Survey

Also, blue-collar skilled workers fared similarly to their white-collar skilled counterparts, with 53.2 per cent of enterprises rating their pay as "above average" (4) and 35.7 per cent as "better" (5). Only 9.7 per cent considered the offerings "average" (3), and 1.3 per cent rated them as "below average" (2). In contrast, blue-collar semi-skilled workers were evaluated less positively. Although 43.5 per cent of enterprises rated their pay and benefits as "above average" (4) and 35.7 per cent as "better" (5), 19.4 per cent viewed them as "average" (3), and 1.4 per cent rated them as "below average" (2). This suggests room for improvement in compensating semi-skilled blue-collar workers.

In becomes clear from the analysis that skilled workers (both white-collar and blue-collar), received stronger ratings for pay and benefits competitiveness compared to their semi-skilled counterparts. This disparity likely reflects enterprises' focus on attracting and retaining highly skilled workers, who are critical to operational success, while managing costs for semi-skilled roles. Additionally, the

relatively lower ratings for semi-skilled workers may be influenced by an oversupply of unskilled labour in the transport sector.

3.6.2. Human resource practices

Freight transportation companies interviewed employ a variety of human resource practices to manage their workforce, tailored to the distinct needs of white- and blue-collar workers. The most common HR approach is adapting job descriptions and tasks to align with employees' preferences and abilities, reported by 41.8 per cent of enterprises for white-collar workers and for 48.5 per cent of blue-collar workers. (Table 20)

Flexible working hours are a less common practice, offered by only 15.9 per cent of enterprises for white-collar employees and 12.6 per cent for blue-collar staff, likely due to operational constraints like strict delivery schedules. Participatory practices, such as involving employees in assessing output quality or collaborating in management discussions, are rare, implemented in fewer than 8 per cent of enterprises for either group. (Table 20)

Table 20. Human Resource practices in freight transportation companies (Per cent %)

6.2. Which, if any, of these arrangements are available in your workplace?		
	Per cent (%)	
	White collar	**Blue collar**
Job descriptions and tasks adapted to employees' preferences and abilities	41.8	48.5
Flexible working hours	15.9	12.6
Involvement in the assessment of the quality of output (e.g. quality circles, total quality management)	3.6	2.9
Joint management and employee working groups to discuss product and process development and quality issues	6.8	7.8
Incentive programmes related to performance (e.g. performance-related pay, merit bonus)	24.5	24.3
Other (please specify)	7.4	3.9
Total	**100**	**100**

Source: Pilot Establishment Skills Survey

Incentive programs, including performance-based pay, are applied by approximately a quarter of companies for both white- and blue-collar workers, demonstrating a shared emphasis on incentivizing productivity. Other practices are minimal, with fewer than 8 per cent of enterprises reporting additional initiatives. (Table 20)

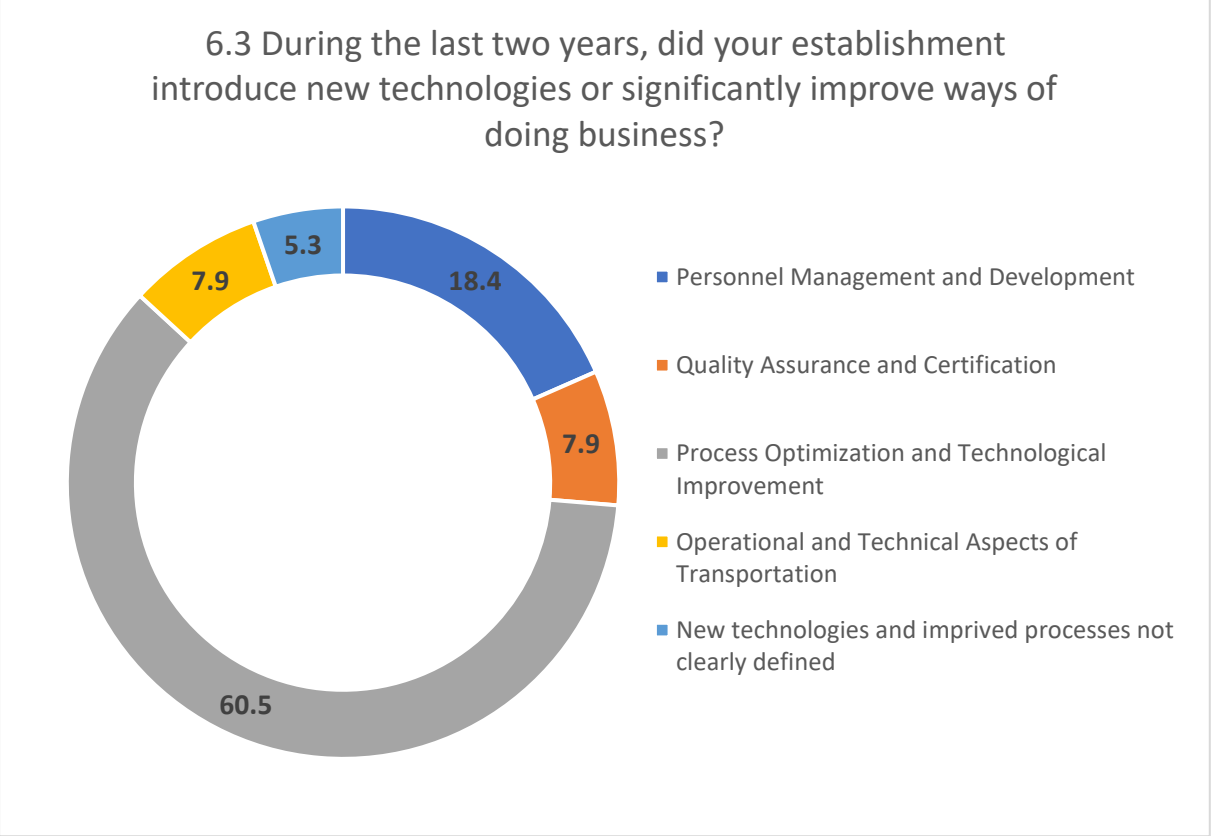
These findings suggest that while some tailored HR practices, such as role adaptation and performance incentives, are relatively common, participatory approaches and flexible hours remain underutilized. Expanding these practices were possible could enhance engagement and efficiency, particularly in addressing the diverse needs of different worker categories. (Table 20)

3.6.3. New technologies and business improvements

Figure 7 highlights the types of advancements freight transport establishments implemented over the past two years, focusing on the introduction of new technologies or significant process improvements.

The most prominent area of innovation was "Process Optimization and Technological Improvement", reported by 60.5 per cent of establishments interviewed. This reflects the sector's priority to streamline operations and adopt new technologies to enhance efficiency, which is crucial in maintaining competitiveness in the logistics and transportation industry.

Figure 7. New technologies and business improvements during the last two years (October 2022 – October 2024)



Source: Pilot Establishment Skills Survey

Improvements in "Personnel Management and Development" were noted by 18.4 per cent of establishments, indicating a significant focus on workforce development, such as training, recruitment strategies, or employee engagement practices. These efforts may be aligned with the broader goal of attracting and retaining talent. (Figure 7)

"Quality Assurance and Certification" and "Operational and Technical Aspects of Transportation" were each prioritized by 7.9 per cent of establishments. These areas include measures to ensure service reliability, compliance with standards, and operational upgrades, albeit less frequently than process optimization. Finally, 5.3 per cent of establishments introduced "new technologies and improved processes that were not clearly defined", reflecting a smaller segment of innovations that may be exploratory or tailored to specific business needs. (Figure 7)

The analysis highlights that process optimization, and technological advancements are the primary focus areas for most businesses interviewed, reflecting broader trends of digitalization and automation in the transport sector. Investments in personnel management and operational improvements are secondary, with quality assurance initiatives receiving less emphasis. This prioritization underscores

the sector's recognition of technology as essential for maintaining competitiveness and meeting the demands of modern freight transport. (Figure 7)

This focus aligns with global transformations in rail and road freight, emphasizing operational efficiency and technological adoption to deliver faster, more reliable, and cost-effective services. Technologies such as automation, AI, and data analytics are becoming critical for enhancing competitiveness, especially as Kazakhstan plays a pivotal role in transit between China and Europe.

This shift carries significant workforce implications. The growing reliance on technology is likely to reduce demand for traditional manual roles, particularly in road and rail operations, while increasing the need for workers skilled in managing advanced systems. Reskilling and upskilling will be vital to prepare the workforce for these technological demands.

Businesses may also face difficulties in attracting and retaining young talent, who are often drawn to high-tech industries, highlighting the need for strategic workforce development. As the freight transport sector evolves, digital and technical skills will become increasingly important for engaging with automation, data management, and advanced logistics systems. This transition from labour-intensive to technology-driven specialized roles highlights the need to align the education and vocational education and training (VET) system to meet emerging demands, while also creating income opportunities and support mechanisms for those unable to transition into new roles.

4. Findings interpretation and stakeholder impact

4.1. Interpretation of key findings

This section interprets the findings from Chapter 3 in relation to the analytical objectives outlined in Section 1.2. These objectives provide a framework for evaluating the recruitment challenges, workforce proficiency, and emerging skill needs in Kazakhstan's road and rail freight transport sectors.

Objective 1: Analyze the factors contributing to recruitment difficulties in the rail and road freight transportation sector

The freight transport sector in Kazakhstan is undergoing a significant structural transformation, resulting in rapidly evolving employment patterns that, in turn, drive shifting skills needs and contribute to recruitment difficulties.

In the rail sector, the shift towards greater outsourcing and reliance on foreign labour highlights a strategic focus on efficiency and long-term growth. In contrast, the road transport sector is adapting to operational and market changes by increasingly employing part-time workers, reflecting a shift towards flexible employment models to meet fluctuating demands and improve cost efficiency.

Recruitment dynamics also differ across enterprise sizes. Larger enterprises prioritize steady growth, leveraging formal recruitment channels to address skill shortages, while medium-sized enterprises adopt a measured approach due to resource limitations. Small businesses, which dominate the sector (86 per cent of enterprises), rely heavily on informal hiring and face a mix of recruitment challenges, often constrained by their limited financial resources, lack of access to skilled labour pools, and inability to offer competitive wages and benefits compared to larger enterprises.

Overall, anticipated hiring demand across the sector remains low in terms of quantity, reflecting a shift toward automation, digitalization, and optimization rather than workforce expansion. However, the demand for higher-quality labour remains high, driven by the need for specialized skills, including those

related to advanced technologies. This trend underscores the need for a focus on upskilling and reskilling to meet emerging skills requirements and overcome recruitment challenges.

Rail freight companies report persistent demand for operational and generalist roles, focusing on enhancing efficiency to maintain competitiveness. Meanwhile, road freight employers face challenges in attracting drivers, with issues such as uncertain work hours and low wages acting as barriers. Across both sectors, recruitment challenges are exacerbated by gaps in ICT proficiency, technical expertise, and foundational skills essential for navigating the increasing digitalization and automation of supply chains.

Overall, these findings highlight a sector in transition, where recruitment challenges arise not only from labour shortages in specific occupations but also from rapidly shifting employment patterns towards more specialized technical roles. These changes are driven by technological advancements and evolving operational business strategies. Addressing these challenges requires tailored workforce development strategies that focus on both the quantity and quality of labour needed to support the sector's shift towards a more technology-driven market segment.

Objective 2: Assess the proficiency levels of existing staff and identify critical skills gaps to improve overall sector performance and competitiveness

Proficiency levels across the freight transport sector are alarmingly low, with only 35.7 percent of employees classified as fully proficient. Rail freight workers demonstrate comparatively higher proficiency levels (67.4 percent), owing to the sector's structured training initiatives and focus on efficiency. Conversely, the road freight sector shows significant gaps, with over 30 percent of employees only semi-proficient, emphasizing the pressing need for targeted skill development programs.

Key skills gaps vary by occupation. Financial professionals and marketing specialists struggle with deficits in organizational, numerical, and ICT competencies. Manual workers, such as locksmiths, report critical gaps in technical and numeracy skills, while drivers face increasing demands for ICT proficiency (34 percent) in response to digitalized logistics systems.

Large enterprises often focus on specialized technical skills, while SMEs require employees with diverse skill sets to meet multitasking demands. Addressing these skills gaps is crucial to enhancing workforce productivity and bolstering sector competitiveness in increasingly digitalized supply chains. Effective training interventions will require collaboration between enterprises, vocational education providers, and policymakers to develop tailored skilling, upskilling and reskilling strategies that can address these deficiencies.

Objective 3: Evaluate the emerging skills and occupations needed by employers and determine future training requirements

The freight transport sector in Kazakhstan is undergoing a significant transformation driven by digitalization, automation, and evolving operational strategies. This transformation is reshaping workforce demands and creating new priorities for skills and occupations. Emerging roles, such as commercial service agents and financial professionals, highlight the increasing importance of managing digital platforms and optimizing supply chain processes. These trends reflect a sector-wide shift towards diversification and specialization to remain competitive and cost-efficient, with businesses striving to balance workforce demands with technological investments.

Rail freight demonstrates a continued focus on generalist and technical roles aligned with long-term strategies for efficiency and productivity. Conversely, road freight faces an urgent need for operational roles capable of adapting to rapid technological and market changes, including drivers, where shortages remain a pressing issue. Supervisory positions are also increasingly critical in combined rail-and-road operations, reflecting the need for coordination and leadership in integrated logistics.

Emerging skill requirements extend beyond technical and ICT proficiencies but also include foundational capabilities such as numeracy and problem-solving, alongside soft skills like leadership and learn-to-learn abilities. These are essential for navigating complex, technology-driven environments and ensuring continuous process optimization. However, SMEs, which dominate the sector, face challenges in meeting these evolving demands. Resource constraints often limit their ability to invest in comprehensive training, pushing them to rely on solutions that may fall short in terms of addressing the sector's emerging needs.

To effectively meet future training requirements, education and vocational education and training (VET) programs must align with these emerging trends. Further, training initiatives should emphasize not only the quality and relevance of skilled workers but also the quantity of staff needed to cater for sector-specific demands. Accessible pathways for reskilling and upskilling are vital, especially for SMEs, to alleviate the burden of internal training and to facilitate the sector's broader structural transformation.

4.2. Implications of findings for relevant stakeholders

The findings from the Pilot Establishment Skills Survey (ESS) underscore several key implications for stakeholders in Kazakhstan’s freight transport sector. First, there is a critical need to prioritize the development of specialized workers to ensure competitiveness in the evolving market. As digitalization and automation reshape the sector, workers will need a combination of technical, cognitive (including foundational skills), and non-cognitive skills to meet these new demands.

Technical skills are essential for managing advanced technologies, while ICT skills are needed to navigate and optimize digital platforms and systems. Cognitive skills, including foundational skills like literacy and numeracy, will remain critical for understanding and applying new information. Additionally, problem-solving and critical thinking abilities will be crucial for addressing complex challenges. Non-cognitive skills, such as adaptability, communication, and teamwork, will be essential to foster innovation and collaboration in an increasingly technology-driven environment.

Additionally, stakeholders must invest in training and lifelong learning opportunities, particularly for those in smaller businesses that may lack access to these resources, to ensure even sector development.

The growing technological advancements necessitate not just the adoption of new technologies but also to rapidly changing organizational business practices that build on workforce resilience and mobility. An adoptive approach will help mitigate the socioeconomic impacts of technological disruptions and ensure that workers are supported throughout the transformation.

Furthermore, the shift towards smaller and micro-businesses in the sector emphasizes the importance of flexible employment structures. Stakeholders must develop innovative employment strategies that address these changes and reduce potential labour market instability. Strategic, long-term investments

in skills development and workforce planning will be essential for stakeholders to meet the evolving needs of the sector and ensure its continued growth and sustainability

5. Recommendations

5.1. Policy recommendations

Kazakhstan's transport sector is currently navigating rapid and multifaceted changes. Technological advancements and market transformations are altering the labour market structure, driving changes in both the number of workers needed and the specific skills they must possess. These shifts highlight the urgency of implementing a proactive, coordinated response to ensure that education and training systems, particularly vocational education and training (VET) programs, remain aligned with these evolving labour market needs.

1. To respond effectively to these challenges, policymakers and stakeholders must recognize the critical role of skills anticipation tools, such as the Establishment Skills Survey (ESS). The ESS, especially when built on a representative sample, offers valuable insights into business and employment trends, technological shifts, and skills gaps. These insights enable policymakers to address training needs in a targeted manner, aligned with labour market dynamics. By leveraging market evidence collected with such tools and adopting strategic policy interventions, Kazakhstan can ensure that VET programs and other workforce development initiatives are well-positioned to meet sector demands.

2. The continuous development and updating of VET curricula to reflect both the current and future needs of the sector will be vital in the context of ongoing technological and economic transformations. As the freight transport sector becomes increasingly reliant on modern technologies, such as digital logistics platforms and AI-driven tools, the demand for specialized technical skills with integrated ICT knowledge will continue to grow.

3. However, it is equally important to emphasize foundational cognitive skills, such as literacy, numeracy, and communication. These basic cognitive skills form the foundation for acquiring more specialized technical knowledge and ensure that workers can effectively adapt to technological advancements and operational changes in the freight transport sector.

4. Additionally, non-cognitive skills must also be prioritized in the curriculum updates and workforce training initiatives. These include problem-solving, adaptability, teamwork, leadership, communication, and the ability to "learn to learn" that are essential for navigating the transport sector's fast-changing technological and market demands.

5. Further, policymakers must prioritize upskilling and reskilling initiatives to ensure that the current workforce can adapt to technological advancements. Further, integrating business knowledge into upskilling and reskilling initiatives equips workers with a comprehensive understanding of market dynamics, operational strategies, and entrepreneurial skills, enhancing workers labour market adaptability and competitiveness. These lifelong learning opportunities should also be integrated into the National Qualifications Framework (NQF) to ensure they are standardized and accessible to all workers across the sector. Collaboration between the Ministry of Labour, the Ministry of Transport, KazLogistics and sector associations as well as workers will be critical to ensure that these programs are designed to meet the evolving needs of the freight transport sector.

6. A dedicated and proactive transport Sector Skills Council (SSC) is essential to facilitate the development of tailored training curricula, competency standards, and career pathways. This council will help bridge the gap between the needs of businesses and the skills offered by educational institutions by ensuring that VET programs are closely aligned with sector demands. It will also be instrumental in identifying emerging skills needs and developing targeted strategies to address these gaps, particularly in specialized roles that are critical to the sector's growth.

7. Policymakers must also address the increasing training burden on businesses, particularly smaller enterprises that struggle to provide training necessary to fill skill gaps. To ease this burden, it is important to foster public-private partnerships (PPP's) and business to business (B2B) exchange to connect businesses, educational institutions and training providers. PPP's and B2B partnerships play a vital role in reducing training costs by enabling businesses to pool resources, share expertise, and co-develop tailored training programs. Such collaborations foster economies of scale, enhance access to sector-specific knowledge, and ensure that training aligns closely with market needs, ultimately benefiting both employers and employees. These partnerships will help distribute the responsibility for workforce development and ensure that all businesses are provided with cost effective opportunities to invest in training.

8. Additionally, introducing financial incentives, such as tax credits or subsidies, may help to alleviate the financial pressures, especially for small businesses, associated with workforce development and encourage enterprises to upskill and reskill their workforce.

9. Addressing workforce shortages actively and timely is another critical policy recommendation. Shortages are particularly acute in roles such as "truck drivers" and other "specialized roles". Policymakers could support businesses in attracting workers by creating clear training and career pathways for individuals to enter these trades. Improving working conditions, including setting fair wages, reducing working hours, and implementing strong workplace safety measures, will be essential for making driver and specialized technical sector jobs more attractive and improving worker retention.

10. The rise of platform economy jobs in logistics and delivery services presents both opportunities and challenges. Policymakers should develop strategies to support platform workers by providing them with access to portable training programs, professional certifications as well as social protection coverage that are tied to the worker rather than the employer or platform. These measures would enhance long-term employability and career progression, contributing to a more stable and skilled workforce within the transport sector.

11. Furthermore, the growing emphasis on sustainability in the freight transport sector demands that policymakers focus on green technologies and logistics practices. As the sector transitions towards more sustainable practices, there will be increasing demand for workers with specialized knowledge required to support these changes, such as AI based route optimization, implementing zero-waste supply chain initiatives and methods to reduce fuel consumption.

12. Strategic workforce planning must also integrate flexible employment models and worker mobility to address the effects of technological change and structural shifts. These strategies

should place a strong emphasis on equity and inclusivity to support workers transitioning into new roles, ensuring fairness in employment opportunities.

These policy actions will not only support the competitiveness and long-term growth of the freight transport sector but will also contribute to its sustainability as part of the broader national economy.

5.2. Practical suggestions for stakeholders

For Businesses

Businesses in the transport sector, particularly small and medium-sized enterprises (SMEs), need to develop practical strategies to address workforce skill gaps. One effective approach is forming cross-sector training initiatives, where businesses pool resources to deliver training programs that focus on common skill deficiencies, including technical expertise, ICT proficiency, and soft skills like problem-solving and leadership. This will help reduce the training burden on individual companies and ensure workers receive necessary training.

Additionally, businesses should explore the use of online learning platforms to offer flexible training opportunities. Digital platforms can provide workers with courses on digital logistics and other key skills without requiring them to take extended time off. This approach will also allow businesses to address upskilling and reskilling needs at a larger scale while maintaining operational continuity.

Mentorship programs can also be a valuable strategy, particularly for large enterprises with established training programs. By mentoring workers in smaller businesses, large enterprises can facilitate the transfer of knowledge and best practices to smaller organizations. Moreover, businesses should consider offering more flexible work arrangements, particularly for long-haul transport workers, to improve job satisfaction and reduce turnover.

For the Ministry of Transport

The Ministry of Transport plays a key role in aligning workforce development initiatives with the transport sector's evolving needs. To support this, the Ministry should collaborate with other ministries, such as the Ministry of Education and Ministry of Labour, to establish a coordinated, sector-specific strategy for skills development. This collaboration could lead to the development of incentive programs for businesses that invest in employee training, such as tax credits or subsidies for companies that offer upskilling and reskilling opportunities.

The Ministry of Transport should also work to integrate transport-specific qualifications into the National Qualifications Framework (NQF) to provide a clear career path for workers in the sector. This will help align VET programs with industry demands, ensuring that curricula remain relevant and address both technical and soft skill needs. Moreover, the Ministry should advocate for the expansion of transport-specific training programs within educational institutions and provide funding for programs that prepare workers for emerging roles, such as those in automated driving systems, digital logistics, and sustainable practices.

For the Ministry of Labour

The Ministry of Labour should focus on creating policies that support both the upskilling and reskilling of the existing workforce and the attraction of new workers to the sector. The Ministry of Labour should also prioritize regulatory reforms that improve working conditions in the transport sector, such as setting minimum standards for wages and working hours. This is especially critical for improving the

attractiveness of roles in road freight transport, where recruitment challenges persist due to difficult working conditions. Additionally, the Ministry should focus on integrating platform economy workers into the mainstream workforce by providing access to benefits and ensuring fair compensation. Regulations that promote stable and long-term career development opportunities within the transport sector will help attract younger generations and improve overall job satisfaction.

The existing Sector Skills Council under the National Agency for Professional Qualifications under the Workforce Development Centre, operating within the Ministry of Labour, should be empowered to take a proactive leadership role in addressing skills gaps within the transport sector. This Council should prioritize strategic coordination with the Ministry of Transport and KazLogistics to ensure that insights from workforce trends and employer needs inform policy responses and training initiatives. A key task for the Council will be facilitating continuous skills analysis through the regular application of the Establishment Skills Survey (ESS) to identify emerging skill shortages, technological transitions, and recruitment trends across the sector.

For educational and VET institutions

Educational institutions and VET providers must take proactive steps to adapt their curricula to the needs of the transport sector. They should work closely with sector stakeholders to provide internships, apprenticeships, and placements that give students hands-on experience and exposure to real-world challenges. These partnerships will also help institutions stay up to date with technological developments and trends.

Moreover, educational institutions should offer flexible learning options, such as modular courses that allow workers to gain specific, targeted skills without the need for long-term commitments. Short, specialized courses on topics like supply chain management, and green technologies will be critical for workers needing to reskill and adapt to industry changes.

Institutions should also integrate soft skills training into technical curricula, focusing on problem-solving, leadership, and communication to ensure graduates are equipped with both the technical and interpersonal skills required in the modern transport sector.

KazLogistics and associations

KazLogistics and its sector associations should facilitate collaboration between businesses, educational institutions, and government bodies. By organizing networking events, workshops, and forums, associations can help businesses identify training needs and connect with training providers. These events can also be used to share best practices and offer solutions to common workforce challenges.

KazLogistics and associations should also advocate for professional certifications that recognize competencies in emerging areas, such as digital logistics, automated driving systems, and sustainability practices. Certification programs will help workers demonstrate their skills and enhance their career mobility. In addition, associations can create online platforms for information sharing, providing access to case studies, training materials, and sector insights. These platforms can help businesses stay informed about the latest trends and innovations in the sector, ensuring they remain competitive in a rapidly evolving market.

For the Ministry of Education

The Ministry of Education plays a critical role in ensuring that VET programs are aligned with the transport sector's needs. This can be achieved through the regular updating of curricula to reflect technological advancements and emerging trends in the industry. It is essential that the Ministry of Education works in partnership with the Ministry of Transport, Ministry of Labour, and industry associations to ensure that VET programs are relevant and that they provide students with both technical and soft skills.

The Ministry should also promote dual-training models, where students can combine classroom learning with on-the-job training. This approach will bridge the gap between theoretical knowledge and practical skills, better preparing students for the workforce. Furthermore, expanding and diversifying VET options, including online and part-time courses, will help workers gain the skills they need without having to leave their jobs.

Further to strengthen workforce development in the freight transport sector, a collaboration between the Ministry of Labour, the Ministry of Transport, and KazLogistics must be institutionalized through ongoing engagement and shared investment in the ESS. While the Ministry of Education should not be directly involved in the ESS, it should utilize the survey results to inform the design and adaptation of education and training programs. This approach will ensure that findings translate into targeted strategies for vocational education and training (VET), skills development, and workforce adaptability, supporting the sector's changing demands.

It becomes clear from the analysis of this report that the tackling of workforce development in the transport sector requires a coherent and joint approach. Practical steps must be taken by all stakeholders to build a skilled and resilient workforce in Kazakhstan's transport sector.

Resources

European Training Foundation. 2019.The future of work and skills in ETF partner countries. Available at: ttphs://www.etf.europa.eu/sites/default/files/2019-07/Future%20of%20work%20and%20skills_Issues%20paper.pdf

European Training Foundation. 2027. Developing and running an establishment skills survey - Guide to anticipating and matching skills and jobs Vol. 5. Available at https://www.etf.europa.eu/en/publications-and-resources/publications/developing-and-running-establishment-skills-survey-guide

European Training Foundation. 2012. Skills Anticipation and Matching Systems. in Transition and Developing Countries. Available at: https://www.etf.europa.eu/sites/default/files/m/84E964F6CBD16532C1257AAD0038EC27_Skills%20matching%20systems.pdf

Heckman, J. J., Stixrud, J., & Urzúa, S. 2006. The Effects of Cognitive and Noncognitive Abilities on Labour Market Outcomes and Social Behavior. Journal of Labour Economics, 24(3), 411-482.

International Trade Administration. 2022. Kazakhstan – Country Commercial Guide Transport and Logistics. Available at: https://www.trade.gov/country-commercial-guides/kazakhstan-transport-and-logistics

Kazakhstan Bureau of National Statistics. Labour and Income. Available at: https://stat.gov.kz/en/industries/labor-and-income/stat-wags/publications/190193/

Laajaj,Rachid; Macours,Karen. 2017. Measuring skills in developing countries (English). Policy Research working paper. Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/775311488980295780/Measuring-skills-in-developing-countries

Rail Journal Kazakhstan. 2023. Available at: https://www.railjournal.com/freight/freight-traffic-sets-new-records-in-kazakhstan/

World Bank. 2019. World Development Report 2019: The Changing Nature of Work: Main Report (English) Available at: https://documents.worldbank.org/en/publication/documents-reports/documentdetail/816281518818814423/main-report