

Towards Effective Human Capital Development for the Logistics Industry

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Abstract—In its effort towards diversifying its economy and generate new jobs, the logistics industry has been identified as a key contributor to economic diversification. The Logistics Strategy of Oman highlighted that the country has the opportunity to generate about OMR 14 billion over the next two decades from logistics-related activities which would contribute approximately 12% to the GDP. The report also stated that Oman is expected to generate about 80,000 logistics-related jobs by the end of the decade and 300,000 jobs by 2040. One of the key objectives of logistics strategy is to support the development of human capital that is indispensable to the long-term growth of the logistics industry. However, according to the same report, there is currently a huge gap between the education skills required by the logistics industry and those which are available in the market. This skills gap poses a genuine threat to economic growth and affects the competitive ability of the logistics industry. Therefore, the development of human capital to match the forecasted and planned growth of the Oman logistics industry becomes critical in realizing the aspirations set out in the logistics strategy. The paper discusses the projections of manpower requirements as per the logistics strategy. Key human capital development challenges and possibilities with regards to Logistics industry are also discussed. The paper closes with some conclusions and recommendations relative to future research.

Index Terms—Logistics, supply chain, human capital, nationalisation, skills gap.

I. INTRODUCTION

The Council of Logistics Management defines logistics as “The process of planning, implementing and controlling the efficient flow and storage of goods, services and related information from point of origin to point of consumption for the purpose of conforming to customer requirements.” The logistics sector in Oman consists of the following key functions transportation, freight, warehousing and value-added logistics services.

In order to diversify its economy and reduce its reliance on oil and gas, the government of Oman highlighted logistics as key contributor to economic diversification.

The Sultanate of Oman Logistics Strategy 2040 [1] is a blueprint designed to transform Oman into a world top 10 logistics hub by 2040. The strategy outlines plan to enhance the contribution of logistic sector to GDP. The sector is expected to generate over 300,000 jobs and contribute 12% of overall GDP by 2040. The sector maintained an average

growth rate of 7% between 2012 and 2014, faster than the average growth rate in GDP or non-oil GDP (see Fig. 1).

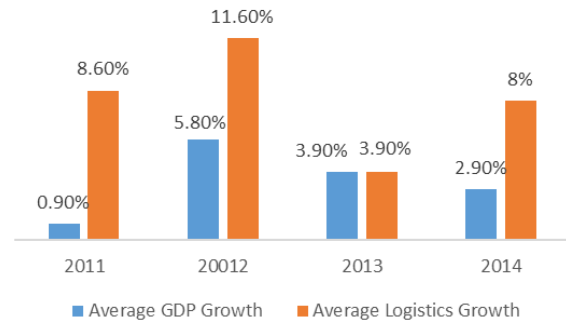


Fig. 1. Average GDP growth vs average logistics growth.

The logistics sector in Oman generated 8.81 Billion market revenue and contributed 4.9% to the GDP in 2015 [2]. Compared to the Gulf Cooperation Council (GCC) region, Oman’s logistics market share was around 12% in 2015 (See Fig. 2 and Fig. 3) [3].

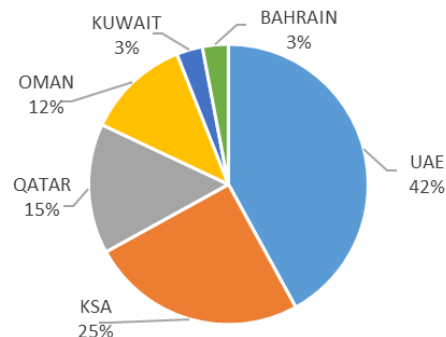


Fig. 2. Country-wise logistics market share 2015.

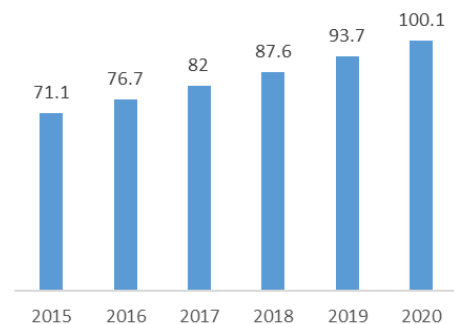


Fig. 3. GCC Logistics Market Share (US\$).

Creation of adequate employment opportunities is one of the key objectives of the logistics strategy. However, it was found that there is currently a considerable gap between the education skills required by the logistics industry and those which are available in the market [1], [4].

The country is currently facing a double challenge: limited

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supply of qualified logistics personnel on one hand and on the other it suffers from high levels of youth unemployment. If not addressed, this poses a genuine threat to economic growth and affects the competitive ability of the logistics industry.

Despite its importance and its impact on the economy and nationalisation efforts of the government, this topic remains understudied and insufficiently researched. This paper attempts to review and discuss the logistics labour market in Oman. The growing requirement of trained and skilled manpower in the sector are discussed. A review of the logistics skills gap and skills shortages in Oman, the challenges they pose together with opportunities and possibilities in the logistics sector are presented. Identification of key areas for future research is also highlighted.

The study utilised relevant data obtained from various ministries and government agencies, including the Ministry of Higher Education, the National Centre for Statistics and Information and Public Authority of Manpower Register. In addition to the National Program for Enhancing Economic Diversification report and online resources, some insights were also drawn from the author’s experience as a consultant and a participant as a researcher in various research groups in the logistics industry in Oman.

II. LOGISTICS LABOUR MARKET OVERVIEW IN OMAN

The Oman National Centre of Statistics [5] estimates that there are approximately 4.4 million people living in Oman, out of which the expatriate population accounted for 46 per cent of the total population. Being a labour importing country, the structure of the Oman labour workforce is composed of expatriates (1.8 million) who work mainly in the private sector. Whereas the locals prefer (238,688) to work mostly in the public sector as depicted in Fig. 4 and Fig. 5 respectively [5]. As Oman is facing public sector absorption issues, most employment growth for nationals has to come from the private sector in the long term.

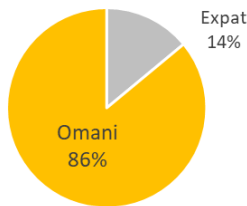


Fig. 4. Public Sector (2016).

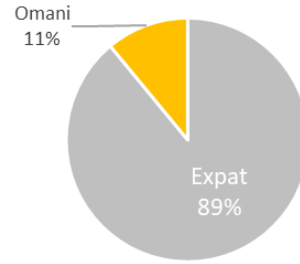


Fig. 5. Private Sector (2016).

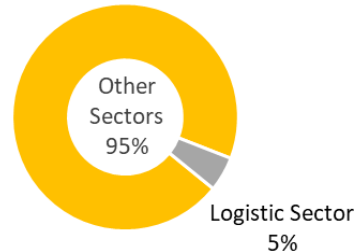


Fig. 6. Private Sector workforce (2016).



Fig. 7. Logistics Sector workforce (2016).

The size of Oman’s logistics workforce in 2014 is less than 40,000 [1]. This constitutes around 5 per cent of the total workforce in the private sector as shown in Fig. 6. Only 20 per cent of the logistics workforce are locals as shown Fig. 7.

III. CHALLENGES AND ISSUES

As per the National Program for Enhancing Economic Diversification [4], the logistics sector is expected to achieve a growth of 5% annually during the 2016 to 2020 period. Logistics related jobs are projected to rise to more than 300,000 by 2040. The projections of manpower requirements are summarised in Table I. It should be noted that more than 80 per cent of projected jobs (258,370 out of 315,678 jobs) are suitable for secondary education level or below (see Fig. 8). It is worth mentioning that more than 88 percent of the expatriate workforce have secondary education level or below as shown in Fig. 9. This means, if this issue is not addressed, the majority of anticipated growth positions in the logistics sector would be filled by expatriates.

TABLE I: THE NUMBER OF JOBS REQUIRED BY SKILLS REQUIREMENT AND OCCUPATIONAL PROFILE

Logistics job Function	Qualification Level	2014	2020	2030	2040
CEO, Top Level Management	MSc	242	554	1,572	2,561
Managers (eg. Customer manager, operation manager, Terminal Manager) Engineers, Accountants, Communications, Marketing.	BSc	1,440	3,294	9,354	15,237
Supervisory Level, IT Instrument Technician, Freight Scheduler, Import / Export Officer.	Diploma	3,734	8,542	24,256	39,510
Crane Driver, Equipment Operators, IT technicians, Customs Broker.	Skilled	5,230	11,965	33,974	55,339
Driver, order pickers, PRO, Office Assistants, Security Supervisors.	Semi-Skilled	11,348	25,961	73,716	120,075
Cleaners, Packers, Lashers, Poerters.	Unskilled	7,840	17,936	50,928	82,956
	Total	29,834	68,253	193,799	315,678

Add to this challenge, the logistics sector does not attract youngsters where 75% of Omani job seekers are under 30 [6].

An estimated 44,000 people per year are expected to join the national workforce between the years 2016-2020 with a total

of 222,000 enrolled. A study conducted by the National Centre for Statistics and Information [5] found that 71 per cent of higher education students and 92 per cent of job seekers prefer public sector. According to the survey, stability, job security, good salary and various financial incentives are main factors pulling young Omanis to the government sector.

When asked about the reasons that motivate them not to seek employment in the private sector, respondents cited low salaries and benefits, work pressure and job insecurity [7]. Furthermore, young professionals associate the word “logistics” with unpleasant warehouse environments and trucks. Hence, increasing the participation of nationals on the private labour market especially in the logistics sector will be a crucial challenge especially for the nationalisation policy.

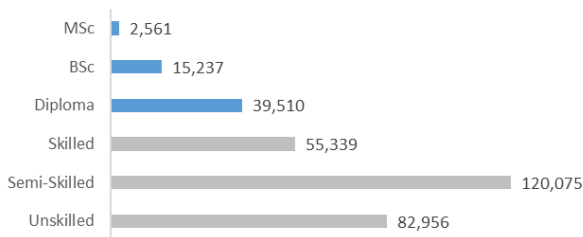


Fig. 8. Number of logistics jobs that may be created in 2040.

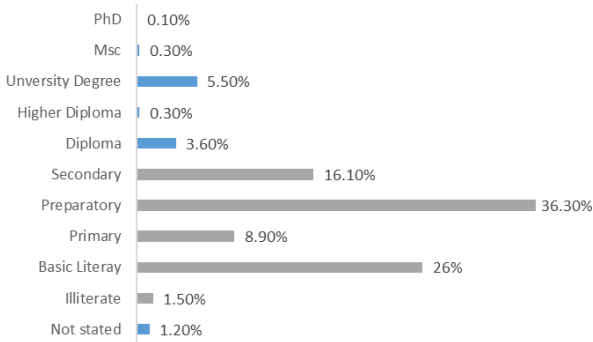


Fig. 9. Expatriate Workforce in the private sector by level of education (2013).

In a recent study [8], it was confirmed that it is increasingly clear that Oman’s maritime and logistics industries are lacking in a sufficiently qualified and skilled national workforce. It was pointed out that logistics companies preferred to employ non-nationals of Oman because they were better trained.

A review of the literature revealed that the poor image of the sector and skills shortages are not unique to Oman, but rather are global. The logistics sector worldwide suffers from low prestige and status of operational logistics personnel in many cultures. It offers low salary levels compared to other sectors, leading to an inferior position in the “war for talent”. Logistics companies in Oman and elsewhere are not only competing with each other but also with other sectors to attract young people into the industry [9].

Numerous research and business reports have identified similar outcomes within Asia and elsewhere including Europe and North America. For example, in a report entitled, Skill gaps in the Indian Logistics Sector [10], the lack of availability of a qualified workforce is likely to be a key obstacle in the growth of the logistics sector in India. Majority of the manpower available in the Indian logistics sector lacks critical domain skills. The gaps in skills required are at all

levels, from senior and middle management to the operational level [11], [12].

The situation is similar in other emerging markets. In South Africa, the shortage of skills is frequently cited as one of the key features inhibiting growth in the country’s economy [13]. It was reported that due to a lack of needed skills, including managerial, professional and technical skills, viable economic opportunities cannot be productively tapped [14].

While in China the huge talent demand and supply gap is not eased by the large number of young graduates entering the workforce every year due to the mismatch between new graduates’ capabilities and the talent needs in the market as reported by Nankervis [15].

Similarly, in a report entitled, Talent is not enough - Closing the skills gap [16], hospitality, logistics and manufacturing in Canada are experiencing a skilled worker shortage on two levels; (1) Shortage of workers: There are not enough workers to satisfy the demand in these sectors, specifically a shortage of qualified managers and supervisors for core staff functions. And (2) Inadequate skills: Those who are entering the workforce often do not come with the skills required to be successful in their roles. For logistics companies of all sizes, finding employees with the needed skills tops the list [17].

In a recent study [18], it was reported that many sectors of the U.K economy are experiencing skills shortages and logistics has been particularly affected.

Based on the author’s participation in the discussion in various forums and logistics-related focus group in Oman, major challenges in terms of human capital include:

- Shortage of appropriately skilled workforce.
- Lack of appropriate education/training programmes.
- Poor career image of the logistics sector.
- Inability of the private sector to offer attractive wages.
- High rate of expatriate workforce in occupations that require limited skills.
- No established career path within the sector.

Similar challenges were identified by The National Program for Enhancing Economic Diversification various workshops in other sectors including tourism, manufacturing, fisheries and mining. In addition to these challenges, the inability to establish small or medium enterprises and a lack of strong private sector coordination in employment leads to inconsistencies in labour-related employment practices [4].

IV. OPPORTUNITIES AND POSSIBILITIES

Below are some suggestions in order to face the challenges discussed above. Some of the suggestion has been also identified by TANFEED [4].

A. Developing Human Capital through Formal Education

To help fill shortage of skilled graduates and develop a workforce to take up the ambitious target of 300,000 jobs set by SOLS 2040, universities and colleges in Oman have recently introduced various educational options related to the field of logistics. It should be noted that the outcome of these courses have not been fully assessed yet. However, in a recent study [8] which targeted 116 student graduates from

logistics-related programmes in the International Maritime College, it was found that over 91% of these graduates were employed, implying that only less than 10% of the logistics graduates were unemployed. It was also found that 45.83% of respondents secured employment immediately after graduating and another 18.75% of the graduates took less than a year to be employed. Although the results of the study cannot be generalised, increasing number of universities and postgraduate programmes focusing on logistics-related topics will certainly help fill the skills gap. An inventory of the main academic programs offered by universities and colleges in Oman is shown in Table II.

TABLE II: ACADEMIC PROGRAMS AND DEGREES OFFERED BY UNIVERSITIES AND COLLEGES IN OMAN

Academic Programs	Academic and Training Provider	Starting Year
BSc. Operation Management	Sultan Qaboos University	1994
BSc. Logistics and Transport management	International Maritime College Oman in partnership with STC group, The Netherlands.	2005
BSc in Logistics Management	German University of Technology in Oman in partnership with RWTH Aachen University Germany.	2014
BSc in Transport and Logistics Management	Modern College of Business & Science in partnership with the University of Missouri, St. Louis (USA).	2015
BSc Logistics with Supply Chain Management	Muscat University in partnership with Aston University.	2017
MSc Logistics and Supply Chain Management	Muscat University in partnership with Cranfield University.	
BSc. (Hons) in Logistics Management	Middle East College in partnership with NHTV Breda University of Applied Sciences, the Netherlands.	2018

There is significant room for improvement for educational institutions to meet the industry needs. It was observed that existing training programmes are too general and mostly theoretical; they do not target specific needs of the sector, such as technical skills in freight, documentation, regulatory and legal. Therefore, there is a significant need for coordination across sector stakeholders [1].

Dr Zainab noted that as the number of logistics higher education programmes is growing in Oman standardisation is essential to ensure quality control. Standardization needs to be intentional, agreed and clearly communicated to avoid confusing students, labour market and society. Standardising logistics higher education will enable professionalization of the learning and performance benchmarking. It will also narrow the gap between the dynamic market requirements and higher education outputs [19].

She argued that the main challenge of standardizing logistics higher education in Oman is unavailability of job classification index, and absence of national occupational standards. Furthermore, based on Oman Standard Classification of Education Framework, Logistics is mentioned as a subject under the detailed field of purchasing. This prejudiced classification has narrowed the holistic view of logistics as broad field of study.

Another important area that need to be look at is how to identify and quantify gaps in education and training so that resources can be channelled towards bridging the gap and developing relevant logistics skills.

B. Using Technology to Bridge the Gap and Reduce Overreliance on Expatriate Workforce

Emerging technology trends such as automation and digitalisation will bring about disruptive changes to the logistics sector. Some of the industry’s most labour intensive processes are on the way to being fully or partially automated, from warehousing to last-mile delivery [20]. This innovation includes big data, digitalisation, the automation of warehousing activities, Radio-frequency identification (RFID) and Real time location systems (RTLS). These changes present both new challenge and new growth opportunities. Such technologies can improve several processes across the supply chain, as well as the reduction of costs related to labour, improvement in inventories and management of transport channels as well as an improvement on customer service [21].

However, technology not only can improve productivity, but it can also reduce the total demand for labour. Some companies are already using technology to help address skills shortages [20].

These technological changes are also having a major impact on skills requirements in the logistics sector. It was reported that many of the jobs that will be generated over the next two decades do not exist today; yet most of the workforce of those years is already in education and training [22]. The increasing use of warehouse management systems and temperature controlled warehousing are resulting in a need for skilled warehouse staff and new professional roles.

There is clearly a need to further explore and understand the existing and emerging technologies that have impact on skills requirements within the logistics sector. And how to leverage the existing technologies to address the skills shortages.

Companies in Oman are positioned to start adopting innovative technologies to gain a competitive edge. Increasing the use of innovative technologies for the low-value processes might help reduce Oman’s overreliance on expatriate workforce.

C. Developing the Workforce through on-the-Job Training

According to EY Survey [23], only 30% of employers in Oman GCC offer work experience or internship programs to students. As the bulk of logistics and maritime jobs are vocational in nature, the educational programs should be both “academically rigorous” and “vocationally-oriented”. Employers in the logistics industry can help by:

- Provide internships and mentorship programs for students.
- Take an active role in curriculum development in their area of expertise.
- Participate in academic and vocational institutions advisory boards.
- Upskilling their workforce.

Logistics professionals participating in various focus groups agreed that they gained their knowledge and sharpened their skills mainly on the job.

D. Increasing Awareness about Careers in Logistics

According to EY Survey [23], only 13% of students have sufficient access to information about jobs and career paths in their areas of interest. The rest reported that they relied heavily on friends and family for advice about careers and information about specific jobs. The survey also showed that only 43% of students in Oman feel they know what qualifications they need to work in their preferred industry.

As the logistics programmes as relatively new in the country, the percentage is much lower when it comes to information about career in logistics. Employers, and future and current employees, are not clear as to where to look for training and information about career opportunities [24].

Educating young people about employment opportunities in the logistics is as important as developing the human capital. Limited access to information about careers prevents graduates from seeking opportunities in the sector.

Best practices for increasing awareness include [23], [24] and [25]:

- Outreach in high schools.
- Encouraging promotion of the sector among high school guidance counsellors and other influence agents such as parents and peers.
- Articulating the opportunities available and clearly defining the career path.
- Engaging alumni of logistics-related programmes to promote employment opportunities and to encourage employers to develop field placements and entry-level job opportunities.

The government can play the role of facilitator. It can help in:

- Collecting and disseminating data related to the job market, future trends and emerging skills, thinking forward-type of research. This can be done in collaboration with Research Centre, Employers, Professional Bodies and Education Providers.
- Aligning and updating policies and regulations with job market needs.
- Speeding up certification and accreditation of new courses.
- Providing financial incentives for training & apprenticeships.
- Developing Skills for Logistics Framework (Technical Skills and Competencies).
- Clarify career pathways with relevant stakeholders.

It is worth noting that the government has already established Oman Global Logistics (ASYAD) as part of its initiative to transform the country into an international logistics hub. As a part of ASYAD, Oman Logistics Centre (OLC) has recently created various committees, namely, occupational standards development committee, workforce projection working group, industry awareness working group and sectoral committee. The main mission of these committees is to tackle some of the challenges highlighted in this paper.

V. RESEARCH PRIORITIES FOR OMAN

It is important to look at and explore some issues that

require further research to find suitable solutions for human capital development in Oman. Here are few research topics that needs to be addressed:

- Skills requirements for logistics professionals.
- The impact of technology (automation, digitalisation etc.) on training, education and labour market in the logistics sector.
- The impact of workforce nationalisation on the competitiveness of the logistics sector.

R&D working group under ASYAD, Oman's logistics group, is currently working to identify and prioritise research areas for the logistics sector. It should be noted that the author is a member of this R&D group.

VI. CONCLUSION

This paper presented an overview about the labour market in the logistics sector in Oman. It looked at main causes of the logistics skills gap and skills shortage and reluctance of youngsters to work in the private sector. From a review of the literature, it was found that poor image of the sector and skills shortages are not unique to Oman, but rather are global. However, being a labour importing country, the structure of the Oman labour workforce in the private sector is composed of 89 per cent expatriates and 11 per cent of nationals. The nationals prefer to work in the public sector because of better job security, higher salaries, and shorter working hours. As Oman is facing public sector absorption issues, most employment growth for the locals has to come from the private sector in the long term. This increasing reliance on foreign labour, if left unchecked, could hamper the implementation of the logistics strategy. The paper identified a range of best practices in the promotion of logistics and human capital development for key stakeholders in the sector. Key areas for future research such as the impact of technology (automation, digitalisation etc.) on training, education and labour market in the logistics sector and the impact of workforce nationalisation on the competitiveness of the logistics sector in Oman, were also proposed.

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