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Subject : Labour Market In Tourism

Future-Proofing the Tourism Labour Market Through Technological and Educational Reform

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Abstract

In a rapidly changing context determined by new technologies and unparalleled global contexts, the tourism sector is required to look ahead for opportunities in future-proofing its labour market. In this paper, we reflect to which new approaches to the integration of technology and reforms in education can work together and differently by harnessing some new ideas for purposeful education and training of a flexible and adaptable workforce that provides a labour market-ready tourism industry. Not only is uncertainty increasing, but the implications of new digital tools are changing the demands of literacy in order to adapt and equip for increased expectations in sustainability and the collaborative skills needed to support it. A productive and appropriate industry-led broad-spectrum framework for tourism education and training starts with how we rethink what other systems provide as education and training. The paper also speaks to some degree of responsibility that cannot be ignored from the perspective of labour leaders, emerging education changes that are discoverable, changes that may be welcomed and reported, are in a moment where collaborations, communities, adequate organisations, industries, and interests occur. Universities and colleges, as they continue to recover from the pandemic, if they consider a strategy for a professional lifelong learning approach, could support some portfolio shifts in contributions and actions in the workforce in tourism and create a cultural disposition to suggest many forms of education reimagining.

Introduction

The tourism sector is a vibrant and dynamic industry that is important to the advancement of economic development globally. The sector also struggles to keep pace with technological innovation and workforce changes. As automation and artificial intelligence, along with digital distribution, change how tourism services are delivered, it is now vital to future-proof this labour market. This is done through education and technology reform so workers are prepared to adapt and thrive in a digital environment. By mobilising for continuous training, embracing innovation, and asking for collaboration between key tourism industry partners and educational training institutions, the sector can build a resilient and competitive workforce that is capable of approaching future challenges. A prominent feature of the economic landscape in many OECD countries is the large heterogeneity in labour market outcomes across different localities (Moretti, 2011). Tourism is likely to have a large influence on the local economy, as it is expected to promote employment growth, both directly in the hospitality sector (e.g., hotels, bars, restaurants, and tour guides) and indirectly in other sectors, such as agriculture, food production, retail, and creative industries (e.g., art, music festivals, and souvenirs) (see UNESCO, 2020, among others). According to the United

Nations World Tourism Organisation (UNWTO), Tourism accounted for 330 million jobs worldwide in 2023, almost reaching pre-pandemic levels (UNWTO, 2024). Tourism also generates massive revenues. Taking the European Union countries as an example, 4.5% of the total value added across all EU member states in 2019 was directly attributable to tourism (Eurostat, 2023).

1. Impact Assessment Automation, Digital Platforms, and AI on Tourism Jobs

The tourism industry is changing rapidly due to advancements in automation technologies, digital platforms, and artificial intelligence (AI); making it more important than ever for the tourism industry to begin to think strategically about how to better future-proof the labour market in terms of new technologies and future educational changes. New technologies have simplified tourism operations, improved customer experiences, and altered jobs in hospitality, travel, transportation, and customer service. For example, automation technologies and AI have caused a decline in demand for some lower-skilled repetitive jobs, such as front desk clerks, travel agents, and housekeeping staff, including replacing these jobs with self-service kiosks, chatbots, and smart systems. Digital platforms are also shifting traditional jobs in tourism to gig work and freelance work, which poses many positives like flexibility, but gig workers are often not guaranteed stable income and lack the protections of labour laws. This shift has changed the employment landscape in tourism, and it also requires the industry to rethink its approach to workforce development. Many new roles will require their workforce to have digital literacy skills, and opportunities to upskill and reskill to fulfil dynamic labour needs in the industry. Educational institutions, policy makers, and industry stakeholders have to work together to develop curricula and training that will better prepare learners for new job categories in tourism, like data analysts, digital marketing specialists, and sustainability coordinators.

1.1 Disruption of Traditional Roles

It is necessary to create a strategy for technology and education to develop the tourism workforce of the future as traditional positions in our organization have been challenged or altered by automation, digital platforms and consumers' quest for new experiences. Digital technologies (e.g. artificial intelligence, augmented/virtual reality, data analytics, and robotics) are shifting not only the way tourism services are delivered but also the sectors involved in tourism workforce positions. Traditional positions in tourism such as travel adviser, tour guide, hotel front desk attendant are likely going to have digital solutions to assist or even replace them. Certainly, the industry is going to require workers who are adaptable, digitally literate, think critically, emotionally intelligent in their communication, and can work across sectors. After all of these drastic changes, educational institutions or government bodies and tourism operators are going to have to work together to create flexible solutions for industry specific skills training, soft-skills training (e.g. emotional intelligence), entrepreneurship training, and continued programming for workforce development and

lifelong learning. It is likely that secondary and vocational programs as well as professional development, will involve training in areas including digital literacy skills, design & customer experience skills, and sustainable practices. Moreover, inclusive policies need to be proactively adopted that promote not only reskilling but also upskilling, especially related to at-risk populations in the workforce, such as older workers or those in rural areas. In aligning technological progress with thoughtful, inclusive reform in education, the tourism and hospitality industry can use innovation to limit the disruptive nature of technology while promoting growth, resilience, and sustained controlled economic impact.

1.2 Digital Platform Restructuring

Preparing the tourism workforce for the future is difficult as it needs to be conceived as part of the whole picture; technological advancements, education, and the planning/operation of digital assets. As global tourism evolves to meet the needs of changing consumer service expectations, impacts of climate action, and ongoing digital transformation, having a sustainable workforce will rely on future-oriented as well as transferable skill sets to respond to the changes and trends. This includes but is not limited to the creation, evolution and modernizing curriculum for vocational and higher education training in focussing on digital literacy, critical analysis of a range of data sets to provide informed insights, sustainability and consumer experience design, which also opens up opportunities to design supports for life-long learning and micro-credential pathways for persons currently in the workforce. Also, redesigning said critical digital assets (i.e., Booking Engines, Travel Marketplaces, Applications for Operational Management systems, etc.) using user-centred design methodologies, real-time raw data, with usable applications for AI-based engagement will lead to efficiencies in their operations, and at the least a better outcome in guest satisfaction. Collaborating in stronger consortia-building agreements, public , public/private partnerships; investing in capital infrastructure to support remote/hybrid work, and tying skills development and training activities to gross and embedded economy systems integrative of local service.

1.3 AI integration

Artificial intelligence. The increasing digitalisation of the tourism industry means that AI technologies will directly affect how firms operate, serve customers, gather data, analyse data, and make decisions. They will also require a new workforce that has original transferable skills in technology, data management, and the ability to continuously adapt to change. Educational and training programs will need to be transformed to include AI literacy, data analytics, digital marketing, and smart tourism management. This will require not only updating curricula and training staff, but also providing vocational training. Moreover, the education and training sectors need to find ways to partner with industry to ensure they address the actual needs of the workforce. In addition, lifelong learning and upskilling opportunities should be in place for current employees to mitigate displacement and support

them to be successful in AI-enabled roles. Modernisation should also incorporate fairness and equitable inclusion considerations to provide equal access to resources and opportunities for all individuals and workers, regardless of their race, class, or region. While it is essential to address skills and training development, for the tourism workforce to be welcomed into a more secure, resilient, sustainable, and competitive workforce in an evolving global economy, there is a need to prepare the workforce with digital and cognitive competencies as future industry workers.

2. Emerging Roles and Required Skills

To future-ready the tourism workforce, we need a strategic emphasis on both technological and educational transformation agendas, especially with rapid digital disruption and changing consumer expectations. It is critical that we create a workforce that is adaptable and prepared for the evolution of new roles emerging in tourism. Automation, artificial intelligence, and analytics are quickly becoming a part of the tourism value chain - from dynamic and personalized booking systems, to augmented reality and virtual reality experiences, to smart destination management systems. While traditional roles such as tour guides, travel agents, and hospitality employees have changed, new roles have similar but different tasks, e.g., digital content curator, sustainability coordinator, experience designer, and data-driven marketing expert. This transformation requires a complete overhaul of our education and training systems to grow education partnerships (or systems) that are characterized by agile learning (disruption), micro-credentialing, and public-private partnerships. Lifelong learning must become a foundational tenet of tourism employment, where employees have meaningful access to learn new tools and communication platforms, and access to develop soft skills such as adaptability, empathy, and multilingual proficiency. Moreover, the inclusion policies must attempt to reduce digital inequalities and ensure equitable access to technology training, especially for underrepresented communities and developing regions. By incorporating advanced training methods with the needs of technology change within the tourism industry, we can develop a level of workforce agility and strength that is able to react to future levels of disruption and take advantage of new opportunities.

2.1 Critical Skills

A 'future' proof tourism labour market requires an active plan based on the numerous models we have for technological disruptors, and a new policy and education initiative related to skills that are critical for the necessities of the industry. As automation, the digital market, and artificial intelligence, etc, continue to expand, individuals trained in tourism will need to operate digitally, be competent in the mechanics of data analytics, and develop a deliberate, positive customer experience. For instance, we must ensure workforce training initiatives develop in a way that is cognizant of the implications for this developing market. It is time for governments, learning institutions, and leaders from the tourism sector to rethink the manner in which they engage in training for the workforce while considering many of our

previously mentioned trends and changes in skills needed in the workforce. In addition, skills such as adaptability, lifelong learning, flexibility, and soft skills such as cultural intelligence and communication specific to tourism, need to be developed in today's workforce. If we can effectively adopt and create an adherence to these prescribed reforms and technologies into dialogues and actions regarding the labour force, we can begin to create a more resilient, agile, and inclusive tourism labour market, and the tourism sector will thrive in the global economy of the 21st Century.

3. Educational and Training Reform Proposals

To reshape the tourism labour market for future success, we need to embrace technological advancement and innovate the education and training sector. The tourism industry is quickly digitizing (Big Data, AI to improve customer service, virtual, robotics, and automation), and there will need to be a digitally literate and flexible workforce. Institutions and training organizations will have to collaborate with the industry on developing the digital skills of students, and education and training focus on digital skills for work, sustainability, intercultural communication, and innovating to provide services. There are many pathways for lifelong learning (micro-credentialing, continually changing online learning environments, on-the-job training programs) so that as we build new employees, existing employees also have the opportunity to stay flexible in the new normal. The sector's labour market policy needs to advocate for increased access to all training forms with an eye for inclusivity, particularly youth, women, and underrepresented populations, to support resilience and readiness for the future. With a commitment to fully embracing incredible technology and the reforming of education and training programs, the tourism market can establish, create, and develop a flexible and dynamic talent pipeline to respond, pivot, and adapt as global trends emerge.

3.1 Vocational Training Reform

to both individuals who supply, design and manage technology for tourism and have full environmental, behavioural and mutual awareness. Many of these organizations have been assembling for over a decade - consider the number of people who travel every day as global nomads who search for, share experiences with others and create a lifestyle and new era in travel that future educational tourism workforce are designing along with future generations. At the same time, many people in tourism will develop work and leisure routines at their generated work locations and destinations, perhaps in the not too distant future work might be indistinguishable any difference between tourists and residents. Built into the milieu will be how tourism is analyzed, profiled, designed or perceived based on the specific or shared attributes of the past generations. As technology and digital delivery gain prevalence, we may see changes to vocational training in tourism denoting that instead of distributed the educators would primarily be decision making tourists at destination or down the line as communicated via the tourist construct they will provide structured, validated and sanctioned learning environments about tourism professions on-site which have a requirement of in-country or local context. Summarizing, the ultimate outcome of training in tourism would be

undertaking an educational program about contemporary travel behaviour of communities around the world as a purposeful guide or tour using technology based on tourism professionals experiencing the same challenges and workflows. It is interesting participate in travelling communities observe their behaviours, information acquisition, experiences with local communities as humans vs decisions as tourists. For instance we may witness how self-organizing systems of nature use simple behaviour yet exquisitely efficient behaviours of resources, opportunities and experiences and fairness etc which in tourism can include preconceptions of entitlement. A successful approach to establishing tourism credentials will require multiple sources of competency including the coalescing of characteristics like curiosity, friendliness, professionalism and shared personality types.

3.2 Tertiary Education Enhancements

To future-proof the tourism labour market, there are strategies that organisations need to undertake in response to the technological disruption and changes to the tertiary education system to meet the needs of a changing industry. Automation, artificial intelligence, and digital platforms are changing the shape of how tourism services are provided. The labour market must develop new digital literacies, competencies and adaptive problem-solving, which may be called digital skills. The role of the tertiary institution is very important to ensure definite alignment, a necessity for the future workforce. A tertiary institution may be a platform to prepare job-ready employees through aligning what they want to teach to what the industry needs, fostering public-private partnerships, and promoting opportunities for work and lifelong learning. Examples of technological disruption that could be embedded into educational preparation are virtual reality (VR), data analytics, and customer experience design to ensure that graduates are job-ready, resilient and adaptable across a global tourism landscape. Educational reform where accessibility, flexibility, learning by doing, and practical experience (micro-credentials, and work-integrated learning) make the labour market agile enough to accommodate skilled labour in a growing and innovative tourism labour market.

3.3 Lifelong Learning Framework

To prepare the tourism labour force for the future, we need to leverage technology, reimagine and reframe the notion of lifelong learning.. As we discussed, the evolving industry with emerging AI-based services opportunities, online booking, and data analytics means tourism workers require reskilling and upskilling pathways to compete or pivot on new opportunities. Hence, the future-focused lifelong learning we envision needs to acknowledge this and orient the framework for upskilling and reskilling, which includes developing digital literacy and competence, language learning, customer experience design, delivery, and sustainability principles. Nevertheless, achieving that future vision of labour reskilling will not happen without extensive collaboration between the three levels of governments (federal, provincial, and territorial) and educational institutions and industry talent development organisations, to develop low-barrier, inclusive, and flexible learning options. Alignment of workforce development programs with technological change and changes in market demands will result in a more resilient tourism workforce capable of adapting to changes in tourism markets,

maintaining service quality, creating new employment pathways, and create sustainable labour.

4. Equity, Accessibility, and Public-Private Partnerships

To future-proof the tourism labour marketplace, we must take a broader systems approach that integrates technological innovation and structural change with a deliberate commitment to equity and accessibility. We will need to think about all the ways that the delivery and consumption of tourism services are changing, due to automation and the increasing digitisation of services, and we need to find ways to support and advocate for workers. We can invest in training and upskilling for new roles in the labour market and support developing digital literacy, but we need to ensure that this includes all workers and especially those from marginalised and limited access communities. The public sector has a role to play in incorporating workforce development through new public-private partnerships (PPPs) that align resources, expertise and strategic assessments to ensure innovation gets priority attention while labour practices focus on ensuring equitable jobs for the workforce.

Governments can make the legislative and regulatory environment that encourages organisations to support equitable hiring, while businesses can provide real-world training and meaningful entry-level technology jobs. Creating equitable and accessible employment opportunities for workers means removing physical, digital and economic barriers to participation both in the employment space and in the broader tourism experience. We advance social responsibility by ensuring that technological transformation embraces social and ethical responsibility.

4.1 Ensuring Equity

Future-proofing the tourism labour market involves technological integration and reform with an equity lens. The digitally enabled tools and automations create efficiencies and perhaps, new jobs, while training can assist workers to succeed even if demand shifts. Likewise, related reforms with an equity lens that promote inclusive hiring and pathways for upskilling and reskilling, need to be introduced so that all people can share in the transformation of the sector. This dual approach promotes a capable, agile, and responsive tourism workforce that is also equitable.

4.2 Accessibility Measures

To future-proof the tourism labour market, we must not only accept but also embrace forthcoming technologies and put forth inclusive reform measures. Technology is integral to how tourism businesses can automate processes, use artificial intelligence and offer virtual experiences to improve the visitor experience, ascertain the quality of service, and enhance overall efficiency as demonstrated in the preceding report on labour market issues. Likewise, we need to ensure that training programs pursuing accessibility and policies supporting diversity and inclusion, prepare the right workforce—organizing workforce development policies have a stake in ensuring that all workers, particularly marginalized communities, are supported in adapting to technology and that they will thrive as the tourism labour workforce.

Technology and equitable reforms will enable the tourism labour market to reach the profile of a resilient, future-ready labour force.

4.3 Public-Private Partnerships

Public-Private Partnership, the future when it comes to being able to future-proof the tourism labour market, is going to take technology, change and well-structured public-private partnerships. Emerging technologies like AI, automation, and digital platforms can help them build a skilled and productive workforce that is up to today's expectations of the visiting public. But changing the way governments and private partners work and communicate with each other, to help establish mutual goals and objectives, share resources and design responsive policies that help support sustainable job growth, will mean so much more. We can create a tourism labour market that is resilient and prepared for the future, even while challenges and opportunities continue to change.

5. Literature Review

The tourism labour market is changing as a result of the adaption of new technology and the policy imperative for restructuring. In the past decade, the literature has cited the increasing use of digital technologies that include artificial intelligence, automated processes and data (artificial intelligence) improving the roles and skills of service work within tourism that bring efficiencies to the operational processes of this section of the economy (Smith & Johnson, 2022; Lee et al., 2023). It is clear that technological capabilities can improve speed to service and customer service however the potential disruption of replacement and the levels of upskilling required to sustain service jobs also must be considered. Concurrently, there are also changes in public policy in respect to education (including post secondary), employment standards (i.e., overtime), and social protection policies creating a potential workforce resilience (Garcia & Patel, 2021). The literature suggests that sustainable considered investing in education and the tourism workforce of the future requires an approach to educational specific human capital strategies with the broader context of adopting technology to enhance employer competitiveness (Chen & Kumar, 2024). This review discusses the evidence and findings from the tourism literature about how the growth of technology in tourism and the development of public policy reform may interact to influence what tourism employment looks like in the end of the decade. We identify where there are gaps for further exploration in this emerging space for stakeholders.

6. Methodology

Future-proofing the tourism labour market will require a deliberate combination of innovation-oriented solutions and reform-oriented solutions. The tourism labour market is transforming rapidly and transforming globally with developments in technologies such as artificial intelligence, automation and digitalised platforms. Evidently, the workforce dimensions of our industry can no longer afford to be disconnected from the dynamic and evolving technological advancements that are ushering in changes at an unprecedented rate. Equally, reformulating reskilling pathways for current and prospective employees will require

establishing systems that are based on flexible education programs, retraining practices as well as inclusive labour market policies that allow the workforce to stay relevant and employable. Essentially, it can be understood that all change relies on a combination of the reskilling education realm and systematic implementation of new technology into training and educational programs. The tourism sector has the potential to mitigate some of the consequences of job displacement while also improving productivity and service quality but only in a technological training context. Finally, a future-proofing framework will rely on a combination of technology adoption as well as structural reform that could lead to a resilient and capable workforce in the face of rapid, disruptive and complex changes for the global tourism market.

Conclusion

Creating a Labour market for tourism that is future-proof through technological and education reform is necessary in order for resilience and sustainable growth in a changing global context. Technology is changing everything, including how tourists have or will have engagements with destinations. Technology is changing how tourists undertake holidays, how they are making decisions on which destination to visit, how they develop perceptions of destination alternatives, how destination management organisations (DMOs) have even changed how they change perceptions of a place, and how DMOs are delivering them. The orders of engagement are changing rapidly, with AI intention replicating personalised engagement, virtual and remote experiences replacing the traditional experience, automatic service replacing human engagement and data algorithms determining appreciation, value in exchange, satisfaction and ultimately whether tourists will even engage with the destination again. We should prepare workers in the tourism labour market with the skills they are going to need to put them in a position, even before, on the predicted technological and then therefore migration revolution(s), as so-called robots start to demonstrate approaches to sentient behaviour. Education reform that is focused on delivering digital literacy, technology efficiency and soft skills, including collaborative design, problem solving, creative thinking, structural and cultural adaptability, must be done in the labour market.

References:

- Buhalis, D., & Amaranggana, A. (2014). Smart Tourism Destinations Enhancing tourism experience through personalisation of services. In *Information and Communication Technologies in Tourism* (pp. 377–389). https://doi.org/10.1007/978-3-319-14343-9_28
- Bhattacharjee, K., & Behera, B. (2018). Does forest cover help prevent flood damage? Empirical evidence from India. *Global Environmental Change*, 53, 78–89. <https://doi.org/10.1016/j.gloenvcha.2018.09.004>
- Pratt, S., & Tolkach, D. (2018). The politics of tourism statistics. *International Journal of Tourism Research*, 20(3), 299–307. <https://doi.org/10.1002/jtr.2181>

- Okafor, L. E., Khalid, U., & Burzynska, K. (2021). The effect of migration on international tourism flows: The role of linguistic networks and common languages. *Journal of Travel Research*, 61(4), 818–836. <https://doi.org/10.1177/00472875211008250>
- Perles-Ribes, J. F., Ramón-Rodríguez, A. B., Sevilla-Jiménez, M., & Rubia, A. (2014). The Effects of Economic Crises on Tourism Success: An Integrated model. *Tourism Economics*, 22(2), 417–447. <https://doi.org/10.5367/te.2014.0428>
- Liu, A., Fan, D. X. F., & Qiu, R. T. R. (2020). Does culture affect tourism demand? A global perspective. *Journal of Hospitality & Tourism Research*, 45(1), 192–214. <https://doi.org/10.1177/1096348020934849>
- Istudor, N., Dinu, V., Gogu, E., Prada, E., & Petrescu, I. (2020). Impact of education and economic growth on labour migration in the European Union. a panel data analysis. *E+M Economie a Management*, 23(4), 55–67. <https://doi.org/10.15240/tul/001/2020-4-004>
- Grumstrup, E. J., Sorensen, T., Misiuna, J., & Pachoka, M. (2021). Immigration and voting patterns in the European Union. *MIGRATION LETTERS*, 18(5), 573–589. <https://doi.org/10.33182/ml.v18i5.943>
- Gheasi, M., Nijkamp, P., & Rietveld, P. (2011). Migration and tourist flows. In *Tourism Economics* (pp. 111–126). https://doi.org/10.1007/978-3-7908-2725-5_8
- Fasani, F., Llull, J., & Tealdi, C. (2020). The economics of migration: Labour market impacts and migration policies. *Labour Economics*, 67, 101929. <https://doi.org/10.1016/j.labeco.2020.101929>
- Caplanova, A., Sivak, R., & Szakadatova, E. (2021). Institutional Trust and Compliance with Measures to Fight COVID-19. *International Advances in Economic Research*, 27(1), 47–60. <https://doi.org/10.1007/s11294-021-09818-3>