

Received: 01/03/2026

Accepted: 19/06/2026

Published: 30/06/2026

Tourism Students' Perceptions of Digitalization, Sustainability, and New-Generation Work Models: Career Expectations in a Changing Sector

Suzan EROL¹

¹ Şehit Sezgin Erdoğan Anatolian High School, Isparta Ministry of National Education, Isparta, Türkiye, e-mail: s.erol3332@gmail.com, ORCID: <https://orcid.org/0000-0003-1997-8976>

Abstract

As the tourism industry undergoes rapid structural change driven by digitalization, environmental imperatives, and evolving employment models, understanding how future tourism professionals perceive and prepare for these shifts has become an urgent concern for educators and policymakers alike. This study examines Turkish tourism students' perceptions of digitalization, sustainability, and new-generation work models, and explores how these perceptions relate to their career expectations. A mixed-methods design was adopted, combining a quantitative survey administered to 225 students enrolled in associate and undergraduate tourism programs at two universities with semi-structured interviews conducted with a purposively selected subsample of 15 participants chosen for maximum variation. Quantitative data were analyzed using descriptive statistics, while qualitative data underwent content analysis, yielding themes, sub-themes, and categories. Findings indicate that the large majority of students (80%) believe digital technologies will expand employment in tourism; digital marketing and web skills were most frequently identified as career-critical competencies. Most students acknowledged moderate-to-high awareness of sustainability but reported knowledge gaps in applied practices. Flexible work arrangements particularly hybrid models (40%) and freelance work (22.2%) were preferred over traditional office employment. Qualitative data corroborated these patterns, revealing additional nuance around uncertainty regarding new work models and the perceived inadequacy of current curriculum in addressing digital transformation and sustainability. The study concludes that tourism education programs require substantial revision to align with industry realities, and offers implications for curriculum developers, faculty, and institutional policy.

Keywords: tourism education, digitalization, sustainability, new-generation work models, career expectations.

Introduction

The tourism industry ranks among the world's largest economic sectors and serves as a primary source of employment for millions of people globally. Yet it is also one of the sectors most profoundly affected by contemporary megatrends: rapid digitalization, growing sustainability imperatives, and the emergence of non-traditional employment arrangements. As a result, the knowledge and competencies required of tourism professionals are shifting in ways that have significant implications for how the sector's future workforce is trained (Buhalis & O'Connor, 2005; UNWTO, 2023).

Within this context, the perceptions and career expectations of current tourism students constitute an important window onto both the readiness of the forthcoming workforce and the adequacy of existing curricula. Research consistently shows that students' attitudes toward emerging industry trends shape their motivation to acquire relevant competencies and influence their eventual career trajectories (Gong & Jia, 2022; Minguez et al., 2021). Understanding how students conceptualize digitalization, sustainability, and new work models is therefore not merely of theoretical interest but carries direct practical relevance for curriculum designers, faculty, and institutional policy makers.



Erol, S. (2026). Tourism students' perceptions of digitalization, sustainability, and new-generation work models: Career expectations in a changing sector. *Social Research and Education Journal*, 2(1), 13-22. <https://doi.org/10.5281/zenodo.21427855>

Despite the clear importance of this question, empirical evidence from the Turkish higher education context remains limited. Turkey is among the top ten tourist destinations worldwide and relies heavily on a well-prepared hospitality and tourism workforce; however, research on how Turkish tourism students perceive and respond to structural changes in the sector is underrepresented in the international literature. This study aims to address that gap. Specifically, it investigates (a) students' levels of awareness and attitudes regarding digitalization, sustainability, and new-generation work models, (b) the skills students identify as career-critical in a digitalized and sustainability-oriented sector, and (c) the preferred future work arrangements among tourism students in Turkey. A mixed-methods design was employed, combining a large-scale questionnaire with in-depth semi-structured interviews.

Literature Review

Digitalization and Tourism Employment

The digital transformation of tourism is multidimensional, encompassing online distribution systems, AI-driven personalization, data analytics, virtual reality experiences, and automated customer service interfaces. Buhalis and O'Connor (2005) identified the internet as a fundamental force restructuring tourism distribution, and subsequent scholarship has traced how each successive wave of digital innovation from mobile commerce to machine learning has generated new occupational profiles while rendering others obsolete. Zhang and Wang (2024) analyzed employment data from Chinese tourism enterprises and found that digital transformation was positively associated with demand for high-skilled workers, suggesting that digitalization tends to upgrade rather than eliminate tourism employment overall. Similar conclusions have been reported for other national contexts (Cango, 2026), though researchers caution that workers without digital literacy risk occupational displacement.

The UNWTO (2023) has foregrounded the skills gap created by digital transformation, arguing that tourism education systems have been slow to respond. Digital marketing, data analysis, and AI literacy are now considered baseline competencies for a range of tourism and hospitality roles, yet these topics remain peripheral in many undergraduate curricula. This misalignment between industry demand and educational supply has prompted calls for curriculum reform centered on digital skills integration (Gretzel et al., 2015).

Sustainability in Tourism Education

Sustainable tourism has moved from a niche concern to a mainstream industry and regulatory expectation over the past three decades. The United Nations' 2030 Agenda for Sustainable Development explicitly positions responsible tourism as a contributor to multiple Sustainable Development Goals, intensifying pressure on operators and institutions alike. In higher education, this has translated into growing interest in Education for Sustainable Development (ESD) as a framework for tourism pedagogy.

Boyle et al. (2015) argued that transformative tourism education, in which lecturers' worldviews actively shape students' engagement with sustainability values, is more effective in producing critically reflexive practitioners than curricula that treat sustainability as a discrete content module. Rezapouraghdam et al. (2022) examined key learning factors in education for sustainable tourism development and found that experiential and problem-based pedagogies yielded the most meaningful shifts in student understanding. Holmberg and Konttinen (2024) extended this line of inquiry to cross-national contexts, concluding that sustainability literacy understood as the capacity to apply sustainability principles in professional decision-making should be treated as a core graduate competency in tourism programs. These findings collectively point to a gap between aspirational ESD frameworks and the reality of many undergraduate tourism curricula (Öztürk & Ay, 2025).

New-Generation Work Models in Tourism

The gig economy, freelance contracting, digital nomadism, and hybrid work arrangements have expanded considerably since the early 2010s, accelerated by technological infrastructure and further normalized by the COVID-19 pandemic. These models offer potential advantages in terms of flexibility and geographical mobility but also entail uncertainty regarding income stability, social insurance coverage, and professional development pathways (Pesole et al., 2018).

Tourism is in some respects well-suited to new work arrangements: the sector's seasonality, international scope, and shift toward platform-mediated distribution create structural openings for independent contractors and location-independent workers. However, the industry's dependence on in-person service delivery also imposes limits on how far certain roles can be detached from physical workplaces (Sciuvà, 2025). Research on how tourism students perceive and plan around these models remains sparse, particularly in non-Western higher education contexts.

Tourism Students and Career Expectations

Career expectations in tourism education have been linked to a range of individual and structural variables, including gender, educational level, perceived industry prestige, and prior work experience (Gong & Jia, 2022). Studies examining the impact of educational experiences on career readiness suggest that internship quality and the integration of applied learning significantly shape students' confidence and occupational intentions (Minguez et al., 2021). Less attention has been paid to how students' awareness of macro-level industry trends such as digitalization and sustainability mediates their career planning. The present study contributes to filling this gap.

Method

This study employed a mixed-methods research design, integrating quantitative survey data with qualitative interview data. The sequential explanatory structure of the design (Creswell & Plano Clark, 2018) meant that quantitative findings were collected and analyzed first, with the qualitative phase designed to elaborate and contextualize patterns identified in the survey data.

Research Context and Participants

Participants were tourism students enrolled in associate-degree (ön lisans) and bachelor's-degree (lisans) programs at two universities in Turkey during the 2024–2025 academic year. A total of 225 students completed the questionnaire (Table 1). The sample comprised 55.6% women and 44.4% men; the largest age group was 21–23 years (44.4%), followed by 18–20 years (40.0%). Associate-degree students accounted for 42.2% of the sample and bachelor's-degree students for 57.8%.

Table 1. *Demographic Characteristics of Survey Participants (n = 225)*

Variable	Category	f	%
Gender	Female	125	55.6
	Male	100	44.4
Age group	18–20	90	40.0
	21–23	100	44.4
	24 and above	35	15.6
Education level	Associate degree	95	42.2
	Bachelor's degree	130	57.8

For the qualitative component, 15 students were purposively selected from the larger survey sample to maximize variation with respect to gender, age group, and educational level (Table 2). Participants were assigned coded identifiers (S1–S15) to preserve anonymity.

Table 2. *Demographic Characteristics of Interview Participants (n = 15)*

Code	Gender	Age Group	Education Level
S1	Female	18–20	Associate
S2	Male	18–20	Bachelor's
S3	Female	21–23	Bachelor's
S4	Male	21–23	Associate
S5	Female	24+	Bachelor's
S6	Male	24+	Associate
S7	Female	18–20	Bachelor's
S8	Male	21–23	Bachelor's
S9	Female	21–23	Associate
S10	Male	18–20	Associate
S11	Female	24+	Associate
S12	Male	24+	Bachelor's
S13	Female	21–23	Bachelor's
S14	Male	21–23	Bachelor's
S15	Female	18–20	Associate

Data Collection Instruments

The questionnaire was developed by the research team and comprised five sections: (1) demographic information; (2) digitalization and tourism employment (3 items); (3) sustainability awareness and attitudes (3 items); (4) new-generation work models and career preferences (3 items); and (5) educational aspirations (2 items). Response formats included four-point knowledge-level scales, five-point Likert-type agreement scales, and multiple-response skill checklists. Content validity was established through expert review by three faculty members specializing in tourism management and educational research.

The semi-structured interview protocol was organized around five thematic clusters: (1) general perceptions of the tourism sector; (2) digitalization and its career implications; (3) sustainability and new sector imperatives; (4) new-generation work models; and (5) career expectations and the role of education. Interviews were conducted face-to-face at participants' respective universities, lasted approximately 30–45 minutes each, were audio-recorded with participants' informed consent, and subsequently transcribed verbatim.

Data Analysis

Quantitative data were analyzed using descriptive statistics (frequencies, percentages). Qualitative data were analyzed through content analysis following the procedures outlined by Mayring (2014). Two researchers independently coded all transcripts, after which inter-rater agreement was assessed; disagreements were resolved through discussion until consensus was reached. The resulting coding scheme organized findings under five overarching themes, each comprising sub-themes and categories, as summarized in Table 3.

Table 3. *Thematic Structure of Qualitative Findings*

Theme	Sub-theme	Selected Categories
1. General Overview	Perceptions of the tourism sector	Growth potential, economic contribution, cultural exchange, challenges
	Preferred career areas	Hotels, guiding, travel agencies, gastronomy, event management
2. Digitalization	Impact of digitalization on the sector	AI use, automation, virtual tours
	Career implications	New occupational roles, digital skill requirements, remote work, flexibility
3. Sustainability	Sustainability perceptions	Ecological sensitivity, cultural preservation
	Sectoral change and opportunity	Eco-hotel concepts, certified facilities, sustainable projects
4. New-Generation Work Models	Attitudes toward new models	Freelance interest, digital nomadism, flexibility perceptions, risk appraisal
	Applicability to tourism	Field requirements, service digitalization, direct customer contact, seasonality
5. Career Expectations	Post-graduation goals	Entrepreneurship, international career, academic pathway
	Role of education	Applied learning, internship experience, mentorship, self-efficacy

Results

Quantitative Findings

Digitalization Awareness and Career Beliefs

Approximately 75% of participants reported moderate or high awareness of digitalization in tourism (44.4% moderate, 31.1% high; Table 4). A clear majority nearly 80% in combined agreement believed that digital technologies would expand employment in the sector (Table 5). When asked which digital competencies were most career-relevant (multiple responses permitted), digital marketing was most frequently cited (57.8%), followed by web design and development (42.2%), data analysis (37.8%), and AI/automation (33.3%) (Table 6). Over half of participants (55.6%) expressed a desire for extensive digital transformation content in their degree programs.

Table 4. *Self-Reported Digitalization Awareness*

Response	f	%
Very low	20	8.9
Low	35	15.6
Moderate	100	44.4
High	70	31.1

Table 5. *Belief That Digital Technologies Will Expand Tourism Employment*

Response	f	%
Strongly disagree	5	2.2
Disagree	10	4.4
Undecided	30	13.3
Agree	110	48.9
Strongly agree	70	31.1

Table 6. Career-Critical Digital Competencies (Multiple Responses Permitted)

Competency Area	f	%
Digital marketing	130	57.8
Web design and development	95	42.2
Data analysis	85	37.8
AI and automation	75	33.3
Other	20	8.9

Sustainability Awareness and Attitudes

Nearly 44% of participants described their knowledge of sustainable tourism practices as moderate, and a further 24.4% as high; however, 31.1% rated their knowledge as low or very low, indicating a substantial proportion with limited applied sustainability knowledge. Despite this, 64.4% considered sustainability principles very important for the sector, and 84.5% agreed or strongly agreed that the industry should devote greater attention to sustainability (Table 7). A clear majority (78.7%) expressed a desire for more formal sustainability training within their degree programs.

Table 7. Perceived Importance of Sustainability Principles for the Tourism Sector

Response	f	%
Not at all important	5	2.2
Slightly important	15	6.7
Moderately important	60	26.7
Very important	145	64.4

New-Generation Work Models and Career Preferences

The largest share of participants (40.0%) indicated a preference for hybrid work arrangements, followed by freelance/independent work (22.2%), digital nomadism (17.8%), and traditional office employment (15.6%). Freelance work in tourism was viewed positively by 73.3% of respondents, and digital nomadism positively by 73.4%. These preferences translated into a general orientation toward work models that combine flexibility with professional stability.

Table 8. Preferred Future Work Arrangement in Tourism

Work Model	f	%
Traditional office work	35	15.6
Freelance/independent	50	22.2
Hybrid (office and remote)	90	40.0
Digital nomadism	40	17.8
Other	10	4.4

Qualitative Findings

Content analysis of the semi-structured interviews produced five primary themes corresponding to the interview protocol. Key findings for each theme are presented below, with illustrative participant quotations.

Theme 1: General Perceptions of the Tourism Sector

Participants consistently described tourism as a growing sector with strong economic and cultural significance, while simultaneously noting significant operational challenges. Career preferences clustered around hotel management, guiding, and event management, with motivations ranging from personal interest in travel to family background in the industry and perceived prospects for international mobility. As one participant observed:

Tourism is not just a job to me it's a way of connecting with different cultures. I think that is why I chose this field and why I believe it will keep growing even through difficulties. (S3, female, bachelor's, 21–23)

Theme 2: Digitalization and Career Implications

Students articulated a clear awareness that digitalization was transforming the sector but expressed mixed confidence about their readiness to navigate this transformation. The emergence of AI, virtual tours, and automated booking systems was perceived as creating new professional roles while simultaneously raising the competency threshold for entry-level positions. Several participants highlighted a gap between what they were learning in their programs and what they expected the industry to require. One participant noted:

We hear a lot about digital marketing and AI in tourism, but the courses I've taken don't really prepare me to use these tools in practice. I feel like I would have to learn on the job—or on my own. (S8, male, bachelor's, 21–23)

Theme 3: Sustainability

Participants showed genuine concern for ecological and cultural sustainability in tourism. Eco-hotel concepts and sustainable project management were frequently mentioned as career areas of interest. However, most participants reported that their understanding of sustainability had developed primarily through personal values and media exposure rather than formal coursework. The gap between sustainability awareness and applied sustainability knowledge was a recurring tension:

I care about environmental issues, but I feel like I can't really explain what a certified sustainable hotel actually does differently. I wish our program went deeper into this. (S11, female, associate, 24+)

Theme 4: New-Generation Work Models

Students' orientations toward new work models were nuanced. Freelance work and digital nomadism were seen as attractive in terms of flexibility and autonomy, but participants were also acutely aware of the income uncertainty and lack of social security these arrangements typically entail. The applicability of remote work in tourism was questioned by several participants, who pointed to the sector's reliance on direct customer contact and field presence:

I like the idea of working flexibly, maybe managing social media for a hotel from anywhere. But tourism is fundamentally about being there being present for guests. So I don't think full digital nomadism fits most tourism jobs. (S5, female, bachelor's, 24+)

Theme 5: Career Expectations and the Role of Education

Post-graduation aspirations were diverse, encompassing entrepreneurship, international employment, and, in a smaller number of cases, graduate study. Participants who had completed internships reported substantially higher levels of sector readiness and professional confidence. Mentorship and applied learning were identified as the most valued educational components,

while participants consistently called for curricula that more directly reflected current industry realities:

My internship was the most useful thing I did. It showed me what the industry actually needs—and a lot of that wasn't in my textbooks. (S14, male, bachelor's, 21–23)

Discussion

The findings of this study converge on three principal insights. First, tourism students in Turkey possess meaningful awareness of digital transformation and broadly accept its positive employment implications, yet they do not feel adequately equipped by their current programs to operate competitively in a digitalized sector. This pattern is consistent with international evidence on the skills gap in tourism education (UNWTO, 2023) and aligns with Zhang and Wang's (2024) finding that digital transformation elevates demand for competent workers rather than reducing overall employment levels. The strong preference for digital marketing skills (57.8%) reflects both the visibility of social media and content marketing in tourism and students' perception that these are relatively accessible entry points into digital competence. That 55.6% of students want extensive digital transformation content in their programs signals a latent demand that curricula have yet to fulfill.

While students recognize sustainability as a critical industry imperative nearly two thirds rate it as very important a substantial minority reports limited applied knowledge of sustainable practices. This disconnect between attitudinal endorsement and practical knowledge is consistent with broader critiques of sustainability integration in tourism education (Boyle et al., 2015; Rezapouraghdam et al., 2022). Students in the current study appear to have internalized the value-level case for sustainability but lack the operational frameworks to translate those values into professional action precisely the gap that Holmberg and Konttinen (2024) describe as the core challenge for sustainability literacy development. The qualitative data add important texture here: for most participants, whatever sustainability knowledge they possess arrived through informal channels rather than formal coursework, suggesting that curricula are missing an opportunity to build on students' pre-existing ecological orientations.

Hybrid work arrangements are the preferred career model among this cohort, with freelance and digital nomad options occupying a secondary but substantial position. This finding reflects broader generational shifts in work preferences (Pesole et al., 2018) but also the particular structural characteristics of tourism: a sector in which seasonal contracts, project-based work, and multi-site employment have always been common. The qualitative data reveal that students are not naive about the constraints of new work models; they recognize the tension between flexibility and income security, and crucially they question whether tourism's service-dependent, face-to-face character is fully compatible with location-independent employment. This nuanced understanding suggests that future curriculum conversations about work models should engage students as thoughtful analysts of industry structure rather than simply exposing them to new employment concepts.

Taken together, these findings reinforce the argument that tourism education curricula require substantive restructuring. Digitalization and sustainability need to be woven throughout degree programs as cross-cutting competency frameworks rather than relegated to elective modules or passing references. Internship experiences, which emerged in the qualitative data as the most formative educational encounters, should be redesigned to include explicit reflection on digital and sustainability dimensions. Faculty development is equally implicated: instructors whose own professional formation predates the current wave of digital transformation may need institutional support to update their pedagogical practices.

Conclusions and Recommendations

This study set out to examine how Turkish tourism students perceive digitalization, sustainability, and new-generation work models, and how these perceptions relate to their career expectations. The evidence points to a cohort that is broadly aware of the forces reshaping its future industry but insufficiently prepared by current educational provision to navigate that landscape confidently. The most consequential implication is structural: tourism education programs need to treat digital competence and sustainability literacy not as supplementary content but as core graduate outcomes, integrated horizontally across the curriculum and operationalized through experiential pedagogies.

Several concrete recommendations follow from the findings. Program developers should audit existing course offerings against digital skills frameworks and sustainability competency models, identifying and addressing gaps. Universities should invest in technology-rich learning environments and partnerships with industry stakeholders that can provide students with access to current digital platforms and sustainability practice. Internship programs should be extended and structured to include explicit digital and sustainability learning objectives. Faculty should be supported in updating their content knowledge and adopting active, problem-based pedagogies.

Regarding new work models, career services and curriculum content should help students develop realistic frameworks for navigating hybrid and flexible employment, including practical guidance on self-employment, platform-based work, and the social insurance implications of non-standard contracts. This is particularly relevant in the Turkish context, where relatively few students reported formal preparation for these realities.

This study has several limitations that should be acknowledged. The sample, though reasonably large, was drawn from two universities in one country and may not represent the full diversity of tourism students in Turkey or internationally. The quantitative data rely on self-report, which introduces the possibility of social desirability bias. Qualitative depth was necessarily constrained by sample size. Future research should adopt longitudinal designs capable of tracking how perceptions and career readiness evolve across degree programs, and should extend to comparative cross-national samples to identify how contextual factors shape the patterns documented here.

Declarations

Acknowledgements: The authors thank participating students and the institutional review boards of the respective universities.

Authors' contributions: All authors contributed to conceptualization, data collection, analysis, and manuscript preparation.

Competing interests: The authors declare that they have no competing interests.

Funding: This research received no external funding.

Ethics approval and consent to participate: Ethical approval was obtained from the relevant institutional review committee. All participants provided written informed consent prior to participation.

References

- Boyle, A., Wilson, E., & Dimmock, K. (2015). Transformative education and sustainable tourism: The influence of a lecturer's worldview. *Journal of Teaching in Travel & Tourism*, 15(3), 252–263. <https://doi.org/10.1080/15313220.2015.1059303>
- Sciuva, E. (2025). Geographies of digital nomadism: A research agenda. *Geography Compass*, 19(2), e70016. <https://doi.org/10.1111/gec3.70016>
- Buhalis, D., & O'Connor, P. (2005). Information communication technology revolutionizing tourism. *Tourism Recreation Research*, 30(3), 7–16. <https://doi.org/10.1080/02508281.2005.11081482>

- Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). SAGE.
- Gong, Z., & Jia, Z. (2022). A Systematic Review of hospitality and tourism management students' career intentions. *Journal of Hospitality, Leisure, Sport & Tourism Education*, 31, 100381. <https://doi.org/10.1016/j.jhlste.2022.100381>
- Gretzel, U., Sigala, M., Xiang, Z., & Koo, C. (2015). Smart tourism: Foundations and developments. *Electronic Markets*, 25(3), 179–188. <https://doi.org/10.1007/s12525-015-0196-8>
- Holmberg, E., & Konttinen, A. (2024). Striving for sustainability literacy in tourism students: Insights from Finland and South Africa. *UAS Journal*. <https://uasjournal.fi/4-2024/striving-for-sustainability-literacy-in-tourism-students-insights-from-finland-and-south-africa/>
- Canco, I., Kruja, D., & Kola, F. (2026). Digital skills and workforce segmentation in tourism and hospitality. *Tourism and Hospitality*, 7(3), 63. <https://doi.org/10.3390/tourhosp7030063>
- Mayring, P. (2014). Qualitative content analysis: Theoretical foundation, basic procedures and software solution. *GESIS*. <https://www.ssoar.info/ssoar/handle/document/39517>
- Minguez, C., Hernandez, C., & Yubero, C. (2021). Higher education and the sustainable tourism pedagogy: Are tourism students ready to lead change in the post-pandemic era? *Journal of Hospitality, Leisure, Sport & Tourism Education*, 29, 100329. <https://doi.org/10.1016/j.jhlste.2021.100329>
- Öztürk, C., & Ay, Y. (2015). The effect of leadership on organizational citizenship. In *Leadership and organizational outcomes: Meta-analysis of empirical studies* (pp. 97-109). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-319-14908-0_6
- Pesole, A., Urzì Brancati, M. C., Fernández-Macías, E., Biagi, F., & González Vázquez, I. (2018). Platform workers in Europe: Evidence from the COLLEEM survey. Publications Office of the European Union. <https://doi.org/10.2760/742789>
- Rezapouraghdam, H., Alipour, H., Kılıç, H., & Akhshik, A. (2022). Education for sustainable tourism development: An exploratory study of key learning factors. *Worldwide Hospitality and Tourism Themes*, 14(4), 384–392. <https://doi.org/10.1108/WHATT-03-2022-0036>
- UNWTO. (2023). Digital transformation and jobs in tourism: How innovation is shaping the future of work. United Nations World Tourism Organization. <https://www.unwto.org/digital-transformation-and-jobs-in-tourism>
- Zhang, P., & Wang, Y. (2024). Digital transformation: A systematic review and bibliometric analysis from the corporate finance perspective. *arXiv preprint arXiv:2412.19817*. <https://doi.org/10.48550/arXiv.2412.19817>