

# International Journal of Human Sciences Research

ISSN 2764-0558

vol. 5, n. 13, 2025

## ... ARTICLE 2

Acceptance date: 16/12/2025

### PERSPECTIVES FROM HIGHER EDUCATION AT THE AUTONOMOUS UNIVERSITY OF NAYARIT: TECHNOLOGICAL SKILLS AS A KEY FACTOR FOR EMPLOYABILITY IN TOURISM AND GASTRONOMY

**Sonia Yadira Tapia Ponce**

Autonomous University of Nayarit  
Tepic, Nayarit. Mexico

**Luis Augusto Guillén Rentería**

Autonomous University of Nayarit  
Tepic, Nayarit, Mexico

**José Ramón Olivo Estrada**

Autonomous University of Nayarit

**Marco Antonio Fernández Zepeda**

Autonomous University of Nayarit

**Fernando Oregel Rosales**

Autonomous University of Nayarit

**Juan Antonio Cabello Sandoval**

Autonomous University of Nayarit

**José Ventura Huerta González**

Autonomous University of Nayarit

**José Bernal Amaral**

Autonomous University of Nayarit

**Nayely Yaremi Borrayo González**

Autonomous University of Nayarit



All content published in this journal is licensed under the Creative Commons Attribution 4.0 International License (CC BY 4.0).

**Abstract:** This study shows that technological skills are a critical factor for the employability of students in the Tourism and Gastronomy degree program at the Autonomous University of Nayarit (UAN). With a focus on Microsoft Excel proficiency, it analyzes how these digital skills strengthen professional profiles and increase competitiveness in a tourism and gastronomy market undergoing digital transformation. An initial assessment showed that 70% of students felt insufficiently prepared for the technological challenges of their sector. In response, specialized workshops tailored to the needs of each area were designed and implemented. The results underscore the urgency of integrating digital training into the academic curriculum. The study concludes with a proposal for concrete strategies to maximize these skills, demonstrating their fundamental role in improving job opportunities and the strategic positioning of graduates in the sector.

**Keywords:** Technological skills, Excel, tourism, gastronomy, employability, higher education, digital transformation, process systematization

## INTRODUCTION

Nayarit is no longer just a promise; it is a fundamental pillar of Mexican tourism. This success is no coincidence, but the result of decades of strategic work that has successfully exploited the region's incredible natural and cultural wealth.

With more than 300 kilometers of coastline, the famous Riviera Nayarit has become a global benchmark, synonymous with quality and sustainability. But such spectacular growth brings with it an urgent need: to train the right people, profes-

sionals capable of taking the reins of this industry that is vital to our economy.

The Autonomous University of Nayarit (UAN): Where Talent is Born

In this constantly evolving scenario, the Autonomous University of Nayarit (UAN) stands out as the nerve center. Its bachelor's degrees in Tourism and Gastronomy are much more than just study programs; they are the strategic engines that inject the qualified human capital that the sector needs. It is at the UAN where the talent that drives and sustains the state's tourism excellence is forged.

The history of these programs is proof of the UAN's vision and adaptability:

- 1995: The Bachelor's Degree in Tourism is created. The UAN anticipated the tourism *boom*, just as the coast was beginning to awaken, laying the foundations for professional management.
- 2008: The Bachelor's Degree in Gastronomy arrives. It was a direct response to the growing appreciation of Nayarit cuisine ( ). Today, our gastronomy is a distinctive cultural attraction and an essential pillar of our identity.

In short, the UAN not only graduates professionals; it forges leaders and ambassadors who ensure that Nayarit remains a world-class destination with a sustainable future.

Always at the Forefront: Curricular Adaptation

UAN's bachelor's degrees have demonstrated a remarkable ability to adapt to the dynamics of the global market. Its curricula are continually transformed to

integrate emerging trends, with the 2017 reform being the most significant. With it, an approach based on competencies, sustainability, technology, and entrepreneurship was adopted (Carrillo-Pacheco et al., 2020). This guarantees a comprehensive education that responds to current challenges.

- **Tourism with a Holistic Vision:** The degree program combines business management and territorial planning with the enhancement of our heritage. Its educational model stands out for its solid integration of theory and practice in real-world scenarios, taking advantage of Nayarit's unparalleled strategic location (Ramírez-Partida et al., 2019).
- **Gastronomy, Roots, and Evolution:** The program focuses on revaluing our culinary heritage. It is a pioneer in the research of native ingredients and ancestral techniques, seeking a perfect balance between tradition and innovation. This work is crucial to safeguarding our gastronomic identity, turning it into a powerful differentiating attraction (González-Herrera & Palafox-Muñoz, 2021).

## The New Era: Challenges and Digital Skills

Despite these achievements, the UAN is aware that the tourism sector is undergoing constant and rapid transformation. The main challenges facing its graduates are:

1. **Digital Transformation:** Accelerated digitization requires professionals with advanced technological

skills. Students must master data analysis, digital marketing, marketing platforms, and the creation of immersive experiences.

2. **Comprehensive Sustainability:** Tourism growth generates pressures that demand sustainable management models. Training must equip future leaders to design projects with minimal ecological impact and maximum socio-economic benefit (Palafox-Muñoz & Martínez-Pérez, 2019).
3. **Internationalization:** The arrival of large international chains in Nayarit requires professionals with global skills, language proficiency, and knowledge of international service standards. The global vision of programs needs to be strengthened (Rodríguez-Antón et al., 2020).

### Technology: The Central Axis of the Future

Today, technology is not an option, but a consolidated reality in tourism and gastronomy (Buhalis, 2018). Digitization has redefined the way services are produced, marketed, and experienced, forcing educational institutions to act quickly.

Today's professionals must be fluent in specialized knowledge. Technological skills are no longer an extra; they are the determining factor for professional success and employability.

Employers are looking for hybrid profiles: people who combine hospitality and traditional culinary arts with advanced digital skills. Managing social media,

analyzing data for decision-making, designing digital experiences, or implementing *e-commerce* systems are common requirements. This forces the UAN to strategically and systematically integrate the development of technological skills into its programs (Molinillo & Japutra, 2023).

We are seeing the emergence of unprecedented and hybrid profiles (Garrido-Moreno et al., 2021): digital hospitality managers, immersive experience developers, and culinary data analysts (Law et al., 2019). The key to success for the UAN is to identify and actively respond to this evolution, ensuring that its graduates are at the forefront of a competitive and digitized labor market (Rodríguez-Antón et al., 2020).

## General Objectives

Analyze the implementation of tools to enhance the technological skills of students enrolled in the Bachelor's Degree in Tourism and Gastronomy Management and Innovation at the Autonomous University of Nayarit, through a theoretical-practical approach, in order to prepare them for the challenges of the contemporary job market.

## Specific

1. 1- Identify students' technological skills in order to detect areas for improvement, based on a needs assessment, with the aim of strengthening their professional profile and job competitiveness.
2. Implement specialized workshops focused on the use of tools such as Microsoft Excel, which respond to the specific demands of each area (Tourism and Gastronomy).

3. Propose concrete strategies to enhance technological skills, highlighting their fundamental role in providing graduates with bachelor's degrees in tourism and gastronomy with access to better job opportunities.

## Method

The methodology used corresponds to a mixed methodological approach with a descriptive and applied component, aimed at identifying needs and designing specific solutions. According to the following classification.

- Applied research, since the main objective was to address a specific need (training in technological tools).
- Descriptive methodology, due to the initial diagnosis that allowed the training needs to be identified.
- Participatory methodology, because the design of customized programs and specific courses was based on the needs of those involved.

The general approach is aligned with a qualitative-quantitative process:

Qualitative: because it allows for the identification of needs and the design of customized programs.

Quantitative: because it allows specific needs to be measured and the results of the initial diagnosis to be evaluated.

Accordingly, the methodology used was mixed, applied, descriptive, and participatory, with a focus on problem solving and practical training.

## Results

During the first phase of the project, various activities were carried out, such as training workshops and feedback sessions. Preliminary results indicate that, even though students have a basic knowledge of digital tools, there is a clear need for training in specific areas, such as digital marketing and data analysis.

Surveys were conducted with 50 students, revealing that 70% feel unprepared to use technological tools in their future careers. Based on these findings, an action plan is proposed that includes the integration of Excel courses at the basic and intermediate levels, covering topics necessary for the development of gastronomic templates.



**Figure 1.** Photograph of tourism and gastronomy students in the first basic-intermediate Excel workshop.

Source: Own elaboration



**Figure 2.** Photograph of gastronomy students in the first basic-intermediate Excel workshop.

Source: Own work.

At the beginning of the project, a work plan was developed consisting of workshops aimed at students, teachers, and administrators.

Students received training in basic and intermediate Excel skills, developing activities for cost control and creating food service templates.

For:

### Inventory Control:

- **Ingredient Stock:** These include tables for keeping track of the stock of each ingredient, with columns for entries, exits, and available balance.
- **Low Stock Alerts:** Some templates have formulas or conditional formats that warn when an ingredient is about to run out.
- **Suppliers:** These can include information about suppliers and prices to facilitate the replenishment of supplies.

### Cost Calculation:

- **Cost per Ingredient:** Allows you to calculate the cost of each ingredient based on the unit price and the quantity used.
- **Total Cost of Dish:** Automatically add up the costs of all ingredients to determine the total cost of preparing a dish.
- **Profit Margin:** Some templates include fields for setting a sale price and calculating the profit margin per dish.



## Automation and Customization:

- **Formulas and Macros:** Many templates use Excel formulas to automate calculations (sums, averages, percentages) and, in some cases, macros for more complex tasks such as report generation.

## Design and Organization:

- **Tables and Filters:** They use Excel tables with filters to organize and search for information quickly (for example, filtering dishes by type or main ingredient).
- **Multiple Sheets:** They are usually divided into different sheets within the same file (one for recipes, another for inventory, another for costs, etc.).

This is a necessary requirement due to the emphasis of their discipline.

The workshops for students were attended by students from the Bachelor's Degree in Computer Science.



**Figure 3.** Photograph of computer science students acting as trainers.

Source: Own elaboration

## Student perception of training courses

At the end of the Excel workshop, a survey was administered to participants to assess their perception of the quality, content, and methodology of the course, thus providing valuable feedback for future improvements. The academic programs that participated were: Gastronomy, Tourism, and Tourism Management and Innovation.

Student perception was important as it refers to the importance of training in relation to their future careers.

There was clear evidence of growing interest among students in acquiring training that will enable them to successfully integrate into the labor market. Today, job requirements have changed significantly compared to years ago, and technological advances are having a cross-cutting impact on all professional areas. This recognizes a high level of demand, as students, teachers, and educational institutions alike must constantly update their knowledge, thereby promoting the development of technological skills. Preparing students in these areas not only gives them a competitive advantage, but also ensures that they have the tools to face the challenges of the future.

Must constantly update their knowledge, thus promoting the development of technological skills. Preparing students in these areas not only gives them a competitive advantage, but also ensures that they have the tools to face the challenges of an increasingly dynamic and specialized work environment.

As a result, 100% of them expressed interest in attending workshops that would allow them to learn various digital tools.

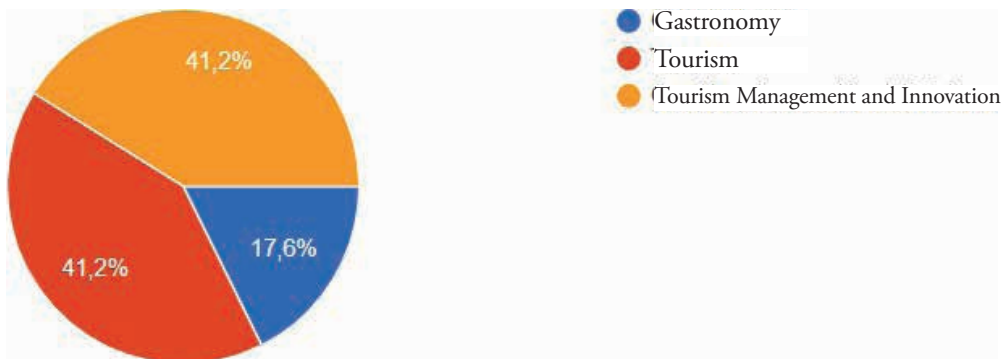


Figure 4. Graph showing student participation percentage by program

Source: Prepared by the author using Google forms.

¿Estaría usted interesado (a) en la impartición de otras herramientas digitales?

17 respuestas

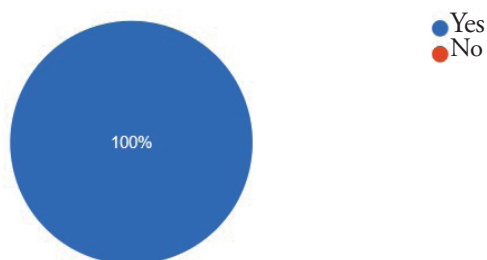
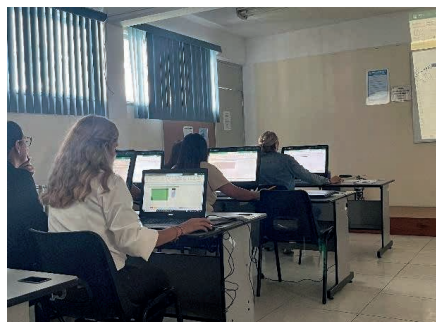


Figure 5. Graph showing the results of the question asked to students about their interest in learning how to use digital tools.

Source: Prepared by the authors using Google forms.

In a second phase of the project, teachers and administrators from the same academic unit were trained.



**Figures 6 and 7:** Teachers and administrators from the Academic Unit of Tourism and Gastronomy.

Source: Prepared by the author in the Excel workshop

Teachers must be proficient in the same tools they teach their students in order to convey not only theoretical concepts but also practical applications.

## Specific Excel applications in tourism and gastronomy

### For tourism teachers:

- Modeling tourism projections: They can teach you how to create models of hotel occupancy, seasonality, and market trends.
- Itinerary and package management: Ability to show how to structure, cost, and optimize tourism offers using spreadsheets.

- Real-world case studies: Ability to work with up-to-date industry data for classroom analysis.

### For culinary arts teachers:

- Cost control and profitability: They can teach how to calculate food costs, break-even points, and profit margins in culinary operations.
- Recipe standardization: Ability to teach how to create recipe books with accurate portion calculations and unit conversions.
- Menu planning: Demonstration of how to systematically organize seasonal menus considering ingredient availability and nutritional balance.

Excel training for tourism and culinary arts teachers is not a luxury but a necessity that bridges the gap between academic training and the real demands of the job market in these industries.

## Discussion Conclusion

Excel is an essential tool that can be used to control ingredient inventories, calculate dish costs, determine profit margins, and plan menus.

Students can learn to create spreadsheets to monitor a restaurant's stock and avoid waste.

In the tourism sector, this tool can be used to analyze data such as hotel occupancy rates, booking trends, and customer satisfaction through surveys processed in pivot tables and graphs.



Students can use these skills to design profitable tourist packages or forecast seasonal demand.

Excel skills promote abilities such as analytical thinking, organization, and problem solving, which are valued in any professional field.

The workshops implemented develop technological skills and abilities focused on solving problems related to gastronomy and tourism. It is necessary to consider implementing these tools in order to broaden the scope of work and improve the competitiveness of students in these areas.

## Future lines of research

One possible line of research is the analysis of the curriculum of the Bachelor's Degree in Tourism Management and Innovation at the Autonomous University of Nayarit. This analysis will be based on information provided by students who are about to graduate, as well as the perception of graduates in relation to the requirements of the companies where they work. In addition, the specific needs of companies in the gastronomy and tourism sector will be considered, with the aim of identifying areas of opportunity and strengthening the professional training of future graduates.

## References

- Buhalis, D., & Leung, R. (2018). Smart hospitality—Interconnectivity and interoperability towards an ecosystem. *International Journal of Hospitality Management*, 71, 41-50. <https://doi.org/10.1016/j.ijhm.2017.11.011>
- Carrillo-Pacheco, S. A., De Jesús, B., & Ochoa, A. D. C. (2020). Innovación y reestructuración curricular en programas de turismo y gastronomía: Un enfoque basado en competencias. *Revista de Educación Superior*, 49(196), 45-60.
- González-Herrera, B., & Palafox-Muñoz, A. (2021). Gastronomía y turismo: La revalorización de la cocina tradicional nayarita como atractivo diferenciador. *Revista Turismo*, 5(2), 125-140.
- Márquez González, A. R., & Ramírez Partida, H. R. (2019). Desigualdad y pobreza en los municipios del estado de Nayarit. Análisis desde el crecimiento económico (1990- 2010). *Espiral (Guadalajara)*, 27(77), 9-47.
- Rodríguez-Antón, J. M., Rueda-López, J. L., & Antón, M. S. (2020). La internacionalización del sector turístico: Un análisis de las competencias profesionales y la demanda laboral. *European Journal of Management and Business Economics*, 29(1), 54-68.
- Palafox-Muñoz, A., & Martínez-Pérez, M. G. (2019). Gobernanza turística y desarrollo sustentable: Desafíos para el sector en el Pacífico Mexicano. En A. Palafox-Muñoz & M. G. Martínez-Pérez (Coords.), *Retos y perspectivas del turismo sustentable en América Latina* (pp. 75-98). Editorial Competitive Press.
- Molinillo, S., & Japutra, A. (2023). Factors influencing the adoption of artificial intelligence in the hospitality industry: A meta-analysis. *International Journal of Hospitality Management*, 110, 103398. <https://doi.org/10.1016/j.ijhm.2022.103398>
- Rodríguez-Antón, J. M., Alonso-Almeida, M. M., Rubio-Andrada, L., & Celemín- Pedroche, M. S. (2020). The digitalization of the hospitality industry: A systematic literature review. *Tourism Review*, 76(3), 613-630. <https://doi.org/10.1108/TR-06-2019- 0274>