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**INNOVATIONS AS A CATALYST FOR CHANGE IN HOSPITALITY****EDUCATION AND SUSTAINABLE DEVELOPMENT PRACTICES****ІННОВАЦІЇ ЯК КАТАЛІЗАТОР ЗМІН В ОСВІТІ ТА ПРАКТИЦІ СТАЛОГО РОЗВИТКУ ГОТЕЛЬНОГО БІЗНЕСУ****Budnyk N.V./ Будник Н.В.***d.t.s., Head of the Department of Food Technologies /**к.т.н., завідувач кафедри харчових технологій**ORCID: 0000-0003-2176-0650***Moroz S.E./ Мороз С.Е.***c.p.s., as.prof. / к.нед.н., доц.**ORCID: 0000-0001-7180-3060***Kalashnyk O.V./ Калашник О.В.***c.t.s., as.prof. / к.т.н., доц.**ORCID: 0000-0001-9281-2564**Poltava State Agrarian University, Poltava, Skovorody 1/3, 36003**Полтавський державний аграрний університет, Полтава, Сковороди 1/3, 36003*

**Abstract** The article examines the role of innovation as a catalyst for change in education and the practice of sustainable development within the hotel industry. It analyzes current trends in the implementation of environmentally oriented technologies, digital solutions, and new educational approaches that shape professionals' readiness to work under sustainability principles. The focus is placed on the need to create a lifelong learning ecosystem in which education, business, and communities interact to promote social, economic, and environmental responsibility.

The study demonstrates that the combination of innovative tools with the development of environmental awareness among personnel ensures the effectiveness of green practices in hotels. It is determined that under wartime challenges and digital transformation, the hospitality industry requires a rethinking of professional training content and management strategies. The article concludes that innovation not only facilitates the industry's adaptation to changing conditions but also sets new standards for sustainable development and competitiveness in the hotel business.

**Keywords:** innovations, sustainable development, hospitality industry, education, ecological culture, eco-management, digitalization, professional training, green approach, learning ecosystem.

**Introduction**

The modern hotel industry is going through a period of profound transformation caused by the simultaneous impact of technological innovations, military challenges, energy crises, and global climate change. Under these conditions, the search for new development models becomes particularly significant – models capable of ensuring not only economic stability but also social and environmental responsibility. Innovation plays a key role in this process. It is no longer merely a tool for improving efficiency but rather a catalyst for change in professional education, resource management, and the organization of internal processes within hospitality enterprises.



Ensuring the sustainable development of the hotel sector requires a deep rethinking of how specialists are trained – people who can operate effectively in complex environments and make decisions with a long-term perspective. Hospitality education should become a platform for shaping ecological awareness, eco-management skills, and an understanding of circular economy principles. At the same time, digitalization opens up opportunities to create interactive learning ecosystems that integrate theory with practice. Thus, the combination of innovative technologies, practical knowledge, and “green” values forms the foundation of a new paradigm for the sustainable development of the hotel industry in Ukraine.

### **Main Text**

Providing hospitality enterprises with practical knowledge and innovative tools to overcome the changing challenges of sustainable development has become a key factor in their long-term viability. In the current context of warfare, energy crises, digital transformation, and climate change, the hotel sector reflects broader social and economic processes.

Numerous scientific studies focus on how the hotel business can not only “survive” amid constant transformations but also ensure sustainable development while maintaining harmony between the economic, social, and environmental dimensions of its activity. In this regard, the industry’s ability not just to adapt to a volatile environment but to develop its own growth strategies based on efficiency, social responsibility, and ecological rationality is of crucial importance.

A content analysis of academic sources shows that much attention is given to the training of specialists in the hospitality sector. It is not simply about transferring theoretical knowledge but about creating a system capable of developing competencies that foster flexibility, innovation, and a critical understanding of sustainability principles. Addressing this issue requires rethinking not only the content of educational programs but also the methodological approaches to teaching and shaping the professional mindset of future experts. In this context, higher education in hospitality emerges as an instrument of transformation for the management paradigm of the industry – a shift from short-term profit orientation toward long-term strategies rooted



in social, economic, and environmental responsibility.

We tend to believe that, under constant challenges and limited resources, the hospitality industry must seek new ways of recovery and growth based on practical knowledge, adaptive experience, and technological solutions. The hospitality sector has always mirrored social dynamics. Yet today, war, energy crises, digitalization, and climate change deeply influence consumer behavior – from travel patterns to leisure choices and accommodation preferences [1]. In these conditions, equipping the hospitality sector with practical knowledge and innovative tools is vital, not only for modernizing the educational environment but also for transforming professional thinking.

At times, it feels as though we are falling behind, as chaos and wartime realities allow no respite. However, perhaps it is precisely this instability that creates a unique window of opportunity – a chance to reassess priorities and shape a new model for the development of the hospitality industry grounded in resilience and innovation.

Take the statistics, for instance: in 2025, the Ukrainian hotel market is already generating 215.53 million USD in revenue, with projected annual growth of 7.75% through 2030. Meanwhile, tourism-related taxes in the first quarter reached 799 million UAH – 27% more than before the war. These figures are more than just numbers; they signal that the industry is reviving. Yet without “green” practices, this growth could easily stall [2,3].

Given these circumstances, a reorientation of professional training for HoReCa specialists is essential. Educational programs in hotel management often rely on established standards, while the realities have already shifted. Today, it is necessary to introduce modules on eco-management, green innovations, carbon footprint management, ESG reporting, and circular economy principles. However, these topics should not remain purely theoretical – they must be “alive,” practical, and experience-based.

An effective approach here is to build the learning process on the “learning by doing” model. For example, during practical classes, students could develop their own micro-projects for local hotels. Such projects might include optimizing water usage,



introducing energy monitoring systems, or establishing partnerships with local producers. This activity-based approach helps students gain a tangible sense of reality. Educational practices like these foster a deeper awareness of the value of acquired knowledge, since young people can directly observe the results of their work and understand how their solutions can be implemented in real enterprises.

But are teachers ready for such a format? Many are still accustomed to lecture halls rather than to “the field” – and this inertia slows progress. Imagine, however, if such projects became the norm. According to [4], hotels that adopt green initiatives reduce their operating costs by up to 30%, and students could test these effects in practice [5].

We share the view of scholars who emphasize the importance of partnerships between education, business, and local communities in promoting sustainable practices in the hotel sector. On closer look, many hotels already strive to act ecologically, but they often lack analytical support and evidence-based recommendations. In this context, universities and research centers can serve as platforms for experience exchange, technology testing, and the creation of joint laboratories for implementing new energy-saving systems or sustainable materials. Even short-term pilot projects can have a substantial impact – if their results are translated into practical guidelines for the industry.

Take, for example, the collaboration between a hotel chain and the University of South Carolina, where joint efforts are focused on testing sustainability models, and the resulting data clearly demonstrate how such cooperation enhances business competitiveness [6]. Similar practices could well be implemented at the Poltava State Agrarian University. Yet it is important to remember that businesses often approach academic research with a degree of skepticism, expecting quick, practically applicable outcomes. Academic science, on the other hand, requires long-term analytical work and data accumulation. Therefore, effective partnership must strike a balance between scientific depth and operational value for enterprises.

The numbers are telling: in 2025, Ukraine is expected to add 1,400 new hotel rooms, primarily in the western regions – areas where such partnerships could



accelerate the green transformation of the sector [7].

Another crucial aspect is the introduction of innovative tools in the HoReCa industry. In the hospitality sector, this can be quite concrete: mobile applications for energy consumption monitoring, CRM systems with integrated ESG modules, or online platforms where hotels can benchmark their sustainability indicators against others. Artificial intelligence (AI) and big data are already being used to forecast resource use, optimize staff schedules, and reduce waste volumes. Implementing such solutions does not necessarily require major investments – the key is that managers understand how to use these tools and recognize their economic value. Studies indicate that the use of AI in hotels can reduce waste by up to 30% through real-time data analysis.

However, the effectiveness of these technologies largely depends on the qualification level of staff and the readiness of managers to integrate new tools into everyday operations. Practice shows that even the most innovative solutions can remain underused if employees lack proper training. For instance, in one Poltava hostel, the introduction of a mobile app for energy monitoring proved ineffective simply because staff lacked the necessary digital skills. A paradox emerges: the tool works, but people do not.

Another example: Marriott, through the use of AI, managed to reduce food waste by 25% across 53 hotels in the UK and Ireland in just six months [8]. This case underscores an important truth – technology alone does not guarantee success. What truly matters is the synergy between innovative tools and the human factor.

In contemporary academic discourse, considerable attention is devoted to the development of ecological culture within HoReCa enterprises. Without it, even the most advanced technologies risk remaining merely theoretical. Practical training sessions on energy-efficient behavior and internal leadership programs that encourage staff to participate in “green” initiatives can become a true driving force of change. It is essential that employees perceive environmental practices not as formal obligations but as genuine values – as part of their personal contribution to a shared outcome.

A vivid example of this occurs when a waiter recommends a local wine not just



because it is on the menu, but because they genuinely understand that doing so helps reduce transport emissions. The effectiveness of such approaches is supported by research from EHL Hospitality Business School, which shows that training programs can increase pro-environmental behavior by up to 40% [9]. However, a dilemma arises when teams are motivated solely by financial bonuses. In such cases, eco-friendly behavior becomes a short-term reaction to rewards rather than an internalized value or part of corporate culture. Once bonuses are reduced or removed, interest in “green” practices quickly fades, and previously implemented initiatives risk losing their impact.

To build a truly sustainable ecological culture, there must be a combination of material incentives and education, alongside employees’ personal identification with sustainability values and a sense of ownership and responsibility for the end result.

A growing body of research also focuses on the local features of tourist destinations. In many communities hosting hotels, there is a lack of knowledge about sustainability principles. Joint initiatives such as community cleanups, eco-fairs, or local recycling projects help foster mutual trust and shared responsibility among HoReCa establishments, residents, and guests. This kind of synergy enhances the tourist appeal of a region and strengthens the positive image of hospitality businesses.

In the Poltava region, local communities are actively developing agritourism based on local products – an approach that not only conserves resources but also preserves cultural traditions. A vivid illustration is the Opishnia Gastro-Ethno Festival “Borsch in a Clay Pot”, which brought together authentic recipes, pottery workshops, an eco-fair, and folk performances, creating a unique atmosphere of hospitality and regional heritage [10]. Guests were delighted, yet the event left behind a considerable amount of waste. This example demonstrates that achieving sustainable development is not a static concept but an ongoing, hands-on process that requires broader participation and effective coordination.

It is also important to highlight the role of state and municipal support in promoting sustainability in the hotel sector. Educational grants, tax incentives for implementing eco-technologies, and easier access to loans for environmental startups can significantly accelerate the industry’s movement toward a sustainable future.



However, the key factor is not the sheer number of such programs but their consistency, efficiency, and accessibility – especially for small and medium-sized enterprises, which form the backbone of Ukraine's hotel industry.

An example of an effective initiative is the GCIP Ukraine project, which provides grants for the implementation of green technologies in SMEs. In practice, this support truly helps companies improve their energy efficiency and competitiveness [11]. At the same time, there are significant obstacles: bureaucratic procedures often complicate access to resources, and not all potential participants know how to properly apply. This highlights the need to simplify administrative processes and raise business awareness about available support opportunities so that such initiatives can operate as efficiently as possible.

The analyzed trends in the development of the hotel sector show that effective provision of the industry with practical knowledge and innovative tools requires the creation of an ecosystem of continuous learning, in which education, economy, technology, and communities interact as organically interconnected components. Supporting such an ecosystem enables hotels not only to respond promptly to the challenges of sustainable development but also to develop their own standards of responsible practices that can serve as examples for other sectors of the economy.

However, one must also consider the realities: war, limited resources, and rapid changes in the tourism environment set different priorities for hospitality businesses. Nevertheless, especially in 2025, as tourism begins to recover, the green approach is no longer a luxury but a necessity. Without its implementation, there remains a high risk of repeating past mistakes, while the potential for sustainable development and competitive advantage remains underutilized.

## **Conclusions**

Summarizing the results of the conducted analysis, it can be stated that innovation serves as a key driver of transformation in the hotel business, determining its ability to adapt to contemporary challenges and develop on the principles of sustainability. The educational component plays a fundamental role in this process, as it is through professional training systems that a new generation of specialists is formed—those



capable of thinking strategically, acting in an environmentally responsible manner, and effectively applying digital tools in their daily practice.

The challenges of wartime conditions, energy crises, and climate change highlight the urgent need to create an integrated learning ecosystem, in which education, business, communities, and the state interact as a single organism. It is essential not only to modernize educational programs but also to cultivate an internal ecological culture within teams, support green leadership, and develop partnerships between universities and enterprises. Such interconnections make it possible to test new solutions, exchange experience, and introduce innovative practices directly into the production environment.

Thus, the transition toward a sustainable development model in the hotel business is possible only through the synergy of three components—knowledge, innovation, and values. In 2025, as Ukrainian tourism gradually recovers, the green approach is no longer a fashionable trend but a strategic necessity that will determine the competitiveness and long-term viability of the industry.

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**Анотація.** У статті розглянуто роль інновацій як катализатора змін в освіті та практиці сталого розвитку готельного бізнесу. Проаналізовано сучасні тенденції впровадження екологічно орієнтованих технологій, цифрових рішень та нових освітніх підходів, які формують професійну готовність фахівців до роботи в умовах сталості. Акцентовано увагу на необхідності створення екосистеми безперервного навчання, де освіта, бізнес і громади взаємодіють задля впровадження принципів соціальної, економічної та екологічної відповідальності. Показано, що поєднання інноваційних інструментів із розвитком екологічної культури персоналу забезпечує ефективність «зелених» практик у готелях. Визначено, що в умовах воєнних викликів і цифрової трансформації індустрія гостинності потребує переосмислення змісту професійної підготовки та управлінських стратегій. Зроблено висновок, що інновації не лише сприяють адаптації галузі до мінливих умов, а й формують нові стандарти сталого розвитку та конкурентоспроможності готельного бізнесу.

**Ключові слова** інновації, стабільний розвиток, готельний бізнес, освіта, екологічна культура, еко-менеджмент, цифровізація, підготовка фахівців, зелений підхід, екосистема навчання.