

Almanach

Aktuálne otázky svetovej ekonomiky a politiky

Vedecký časopis
Ročník XXI.
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TYPES OF AI TOOLS IN HOTEL CRM AND THEIR USE ACROSS REGIONS AND INDUSTRIES¹

TYPY AI NÁSTROJŮ V HOTELOVÝCH CRM SYSTÉMECH A JEJICH VYUŽITÍ V REGIONECH A ODVĚTVÍCH

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Abstract: Abstract: The article aims to assess the extent of implementation of artificial intelligence (AI) tools and types of AI tools in the accommodations and hospitality industry, focusing on the Czech Republic and impact introduction. The objective is pursued through a structured review of the literature published between 2019 and 2025, complemented by analyses of third-party surveys and official statistics from Eurostat and the Czech Statistical Office. Statistical data is subjected to comparative analysis across geographical areas and subsectors. The article synthesizes fragmented evidence and addresses two research questions concerning geographical and sectoral differences. The main findings indicate that the Czech Republic lags behind the EU-27 in the adoption of AI tools, and notable cross-sector disparities persist, with uneven implementation. Hotel enterprises use AI primarily for text and voice generation, data analysis, and travel-agency booking processes. Overall, the evidence suggests that AI generates benefits for businesses; however, its use must remain attuned to customer satisfaction. AI tools are currently expanding the range and quality of services, but do not replace the human factor in the hotel industry.

Keywords: Tourism, AI, Chatbot, Voicebot, Sector

JEL: L83, M31, O33

Abstrakt: Článek si klade za cíl posoudit rozsah implementace nástrojů umělé inteligence (AI) a specifikovat jejich typy v ubytovacím a hotelovém průmyslu se zaměřením na Českou republiku a identifikovat jejich dopady. Cíl je realizován prostřednictvím analýzy strukturovaného přehledu literatury publikované v letech 2019 až 2025, doplněného analýzami průzkumů třetích stran a oficiálními statistikami Eurostat a Českého statistického úřadu. Statistická data jsou podrobena komparační analýze napříč geografickými oblastmi a subsektory. Článek syntetizuje dílčí poznatky a řeší dvě výzkumné otázky týkající se geografických a odvětvových rozdílů. Hlavní zjištění naznačují, že Česká republika zaostává v zavádění nástrojů AI za EU-27 a rovněž přetrvávají značné mezisektorové rozdíly spojené s nerovnoměrnou implementací. Hotelové podniky používají AI primárně pro generování textu a hlasu, analýzu dat a procesy rezervací přes cestovní kanceláře. Celkově důkazy naznačují, že AI podnikům přináší výhody, její používání však musí být zaměřeno na spokojenost zákazníků. Nástroje AI v současné době rozšiřují nabídku a kvalitu služeb, ale nenahrazují lidský faktor v hotelnictví.

Klíčová slova: Cestovní ruch, AI, Chatbot, Voicebot, Odvětví

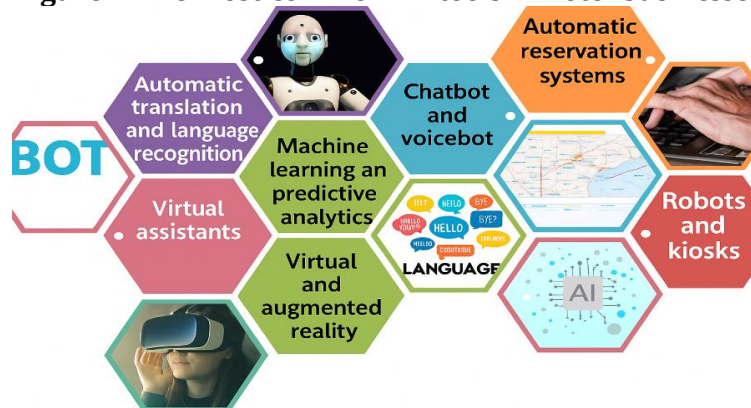
JEL: L83, M31, O33

¹ Paper was created as part of research SGS20/2024 "Promoting sustainable tourism through customer relationship management" at the School of Business Administration in Karviná, Silesian University in Opava.

Introduction

In today's global world, where distances are shortening and the dynamics of tourism are increasing, it is necessary for businesses operating in this market to find new ways to be more attractive and different for domestic and foreign clientele. Strengthening competitiveness thus depends, among other things, on communication with customers and, within the framework of corporate activities, on managing them through CRM. As stated by many authors, CRM systems represent the "core" of an organization's relationship management. In the context of customer relationship management, the trend is to integrate artificial intelligence tools (hereinafter referred to as AI) into business processes. As stated by MyLightHouse research (2024), tourism businesses are overwhelmed with information and data. The implementation of AI tools enables the acquisition and subsequent analysis of information about customer preferences, experiences, and perceptions of the service to improve and optimize marketing, sales tactics, and customer support. Artificial intelligence is changing tourism through automation, personalization of customer experiences, and data analysis of large amounts of data. In the field of artificial intelligence (AI) and communication technologies, chatbots and voice bots, which act as automated assistants capable of communicating with customers in natural language in real time, are increasingly being integrated into business systems. The implementation of AI is thus leading to significant transformations. The implementation of AI thus leads to substantial transformations in the provision and management of tourism services (Li et al., 2021). Communication-oriented AI tools are expected to be most prevalent within online travel agencies (OTAs) and booking platforms. There are numerous advantages to using AI, including sustainability (reducing waste), lowering operating costs for routine operations, and easing employee workloads. One of the most significant impacts—particularly for chatbots and virtual assistants—lies in accelerating customer communications. In reservation and information support centers, these tools operate 24/7, which leads to improved customer satisfaction (Nirbhavane et al., 2025; Li et al., 2021). Other benefits of AI for tourism can also be identified. It can therefore be stated that AI tools undeniably make services (Carvalho & Ivanov, 2023) and customer communication more efficient. Many tourism businesses perceive certain barriers—for example, GDPR-related issues, AI hallucinations, legacy-system constraints, and, not least, gaps in AI skills and low employee adaptability to AI-driven innovations (see Figure 1).

Figure 1 The most common AI tools in hotel businesses



Source: own processing

On the demand side, customers influence willingness to adopt these tools, primarily requiring reliability, simplicity, trust, and a human touch. The adoption of contactless flows, intelligent operations, and AI-supported services strengthens brand positioning and competitiveness and enables more effective strategic decision-making. Conversely, a lack of

human warmth and emotional empathy in communication can negatively affect the user experience (Al-Oraini, 2025).

1 Research literature

There is a whole range of publication outputs, with the highest increase in scientific outputs on AI issues recorded in the past three years (2022 -2025). Verma (2025) and Al-Hyari et al. (2023) have addressed the issue of AI tools in business activities. In Czech literature, the subject is, for example, by Pawliczek (2025) or Horák (2022). According to Kong et al. (2022) the studies can be thematically divided into four groups: AI technology, technology adoption, customer perception, and future trends. The literature largely defines AI tools and also mentions the areas of their application and impacts on business activities. In the literature dealing with AI in hotel companies, you will find mainly tools such as chatbots and voicebots (information search, customer communication, etc.), virtual assistants (voice control in hotels, Sousa et al., 2024), and an important element of robotization in the form of robots and kiosks (they provide check-in/check-out, luggage delivery, cleaning, and other services), as well as biometrics (Gáll, 2024). For the hotel segment, it is necessary to mention the supporting automated reservation systems (fast and efficient processing of reservations without human intervention). In the literature, we can also locate other tools associated with tourism. These include machine learning and predictive analysis tools (demand forecasts, price optimization, capacity management, and personalized offers based on big data analysis).

According to Khneyzer et al. (2024), chatbots and voicebots, automated bookings, and inquiries are most commonly used in the tourism industry (Khneyzer et al., 2024; AI-Driven, 2024). Research confirms that hotel companies focus on areas where they can achieve the quickest results, particularly in customer communication, data analytics, and revenue management (RMS). They plan to accomplish their goals by implementing artificial intelligence (AI) tools, primarily in the form of chatbots, voicebots, or callbots (Zhou, 2025). The study mentions that AI implementation in the hospitality industry faces technological, cultural, and economic barriers, which makes AI adoption in practice very uneven (Zahidi et al., 2024). There is no doubt that hoteliers are interested in artificial intelligence primarily for cost and optimization reasons, i.e., improving financial results; however, the current situation with the introduction of artificial intelligence into corporate structures, and de facto also into tourism businesses, is uneven (Gáll, 2023). Studies indicate that AI is often implemented to improve customer service through intelligent chatbots, voice assistants, and personalized recommendation systems. Findings add that chatbots reduce psychological ownership and negatively affect tourists' sense of belonging, their self-efficacy, responsibility, and self-image, which subsequently weakens relationship commitment and the intention to rebook (Scarpi, 2024).

The introduction of artificial intelligence brings either positives or negatives; according to Hui et al. (2023), the impacts of AI on employees remain unclear. On the one hand, artificial intelligence can complement human workers and enhance their performance; on the other hand, it can have a negative effect on macroeconomic employment indicators. As studies show, AI-driven CRM systems can increase operational efficiency by up to 30% and reduce employees' workload by up to 70%, while at the same time boosting guest satisfaction by up to 15% through more personalized and timely services (Batra & Chatterji, 2024; Anwar et al., 2024). Recent research highlights advance in AI applications in tourism and emphasizes a shift from a focus on technology to users' perceptions and the implementation of AI-driven services (Kong et al., 2022). AI-enabled CRM solutions increase customer engagement, loyalty, and revenues through personalized suggestions, predictive analytics, and efficient service delivery (Nirbhavane et al., 2025; Khneyzer et al., 2024).

2 Data a Methods

There are a number of authors who deal with the issue of AI in the hotel industry. Most scientific articles are review articles on AI in hotel businesses. López-Naranjo et al. (2025), among other things, evaluates the intensity of scientific articles on the issue from the perspective of geographical distribution. The authors stated that the Czech Republic is not one of the regions where the topic of AI in tourism dominates. Furthermore, the issue of perception, expectations and willingness to accept AI (Kong et al., 2022, Gajić et al., 2024), or security, appears in the literature. Pham and Bris (2025), address the use of AI in supply chain management. A regional analysis of the use of AI in the hotel industry was further dealt with by Gáll, (2023), specifically dealing with the issue of Slovak hotels. Similar to this article, the author asks the question *"What artificial intelligence technologies are used in accommodation facilities in Slovakia?"*. Makivić et al (2024) also addressed geographical comparison, dealing with the issues of trust and personalization in connection with the use of AI in Hungarian and Serbian hotels. Schegg (2025) deals with the issue of AI, but does not deal with the issue in more detail from the perspective of the Czech Republic, regions such as Germany, Austria, Switzerland, Italy, Greece and France appear in the analysis. When entering the keywords "AI", "Hotel", "Czech Republic", there were 9 articles registered in the WoS database, none of them related to the issue we examined, and 282 in the Scopus database. The issue is further explored by Stor, M, et al., (2025), but uses different keywords "Robotization", "V4" and "enterprises" in general. Research (Alaflak et al., 2025) is emerging linking elements such as SMEs and AI as a factor influencing tourist behavior and supporting the growth of eco-friendly travel (focused on Egypt). The issue of AI at the front-office level in American hotel chains was developed by Khan and Soomro (2025). As for the analysis of the use of AI in hotel businesses in the Czech Republic, there is an obvious research gap (AI Consensus, 2026, prompt *"use of AI in hotels in the Czech Republic"*).

The aim of the research was to compare the level of use of AI tools in hotel services in the context of the EU27 and the sectoral structure of the Czech Republic. The result is the identification of the digital level from the perspective of the use of AI in hotel services, which will enable the launch of subsidy and innovation programs to support the introduction of AI technology in the future. Furthermore, based on the research of information sources, the aim was to map what AI tools are applied to the hotel industry in the Czech Republic and what impacts these tools have on the functioning of hotels. It is necessary to realize that the hotel industry is one of the industries that have a significant share in increasing the economic level and economic power of the state.

The search mainly included empirical studies, systematic reviews and conceptual frameworks published in the last five years. The analytical part contains a search for primary research, e.g. MyLightHouse (2024) and Schegg (2025), concerning the issue. An analysis of the level of implementation of AI in the Czech hotel industry was also carried out on the basis of statistical yearbooks (EUROSTAT, CZSO). Based on hard data, a comparison was made within the geographical and sectoral structure and two research questions were answered:

Research question RQ1: *"What are the geographical and sectoral disproportions in the use of AI tools in the hotel industry, with an emphasis on the Czech Republic?"*

Research question RQ2: *"In which areas of corporate structures are AI tools used in the hotel industry?"*

3 Results and discussion

From the questionnaire surveys of MyLightHouse (2024) and Hesso (2024), it is clear that AI tools are important in the global world. Respondents in 2 different surveys consider artificial intelligence in the areas of marketing, data analysis, and reservations to be the most

beneficial (see Table 1 for more details). Furthermore, respondents to the survey (MyLightHouse) on how they use AI for revenue management provide an average score of "3" (3 out of 5); they see potential in artificial intelligence and agree with the opinion "*... that the hotel industry will adopt artificial intelligence faster than other technologies, based on availability, cost of use, and need due to lack of skilled labor.*"

Similarly, in the HES-SO survey (Schegg, 2025), which included 1458 hotel entities, the assessment of the potential of AI was more positive (average score 6/10); however, in contrast to the Statista survey (2025), they do not consider AI tools to be transformative. Schegg (2025) also recorded an average rating of 6.6/10 for the potential of AI, with respondents' expectations being more focused on operational rather than transformational benefits in implementing AI. This "operational" potential corresponds to the fact that the greatest immediate gains arise in processes with high repeatability and transactional burden (guests' questions, inquiries, booking changes, and price revisions), which is confirmed by the results. Cautious impact assessments, but otherwise positive expectations, correspond well with the finding that hotels prioritize quickly achievable, process-based benefits (faster response, more accurate pricing, less burden on the front desk) over long-term transformational ambitions. This result confirms the conclusions of Zouh (2025).

Table 1 Results of the My Light and HES-SO questionnaire survey

Survey	MyLightHouse	HES-SO
We / I do not use AI	37 %	n/a
For data analysis	33 %	47 %
Reservation	n/a %	68 %
For pricing decisions	22 %	
Market analysis	26 %	62 %
Benchmarking the competition	20 %	
For personalization and customization)	14 %	51%

Source: Retrieved from HES-SO. (Schegg, 2025). *AI adoption in European hospitality: Survey 2024/25.*

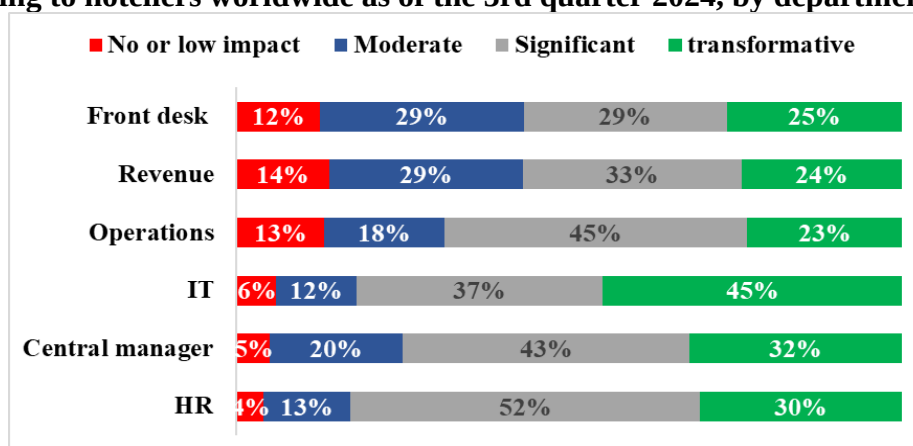
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MyLightHouse (2024). *Market insights / Trend report.*

<https://www.mylighthouse.com/pdf/c0d7c15e8e/report-survey-ai-2024.pdf>

According to research by MyLightHouse (2024), the high proportion of hotel workers using artificial intelligence for data analysis is explained by the complexity and enormous amount of corporate data, with 71% of respondents out of 1,278 agreeing that "*the complexity of data analysis and revenue strategy has increased in the last five years*". On the other hand, according to Li et al. (2021), the implementation of AI leads to significant transformations in the provision and management of tourism services, which was also confirmed by the conclusions of a questionnaire survey by Statistica (2025), see Figure 2. According to research by Pawliczek (2025), employees tend to believe that AI tools are beneficial, leading to improved knowledge and efficiency in a dynamic market environment.

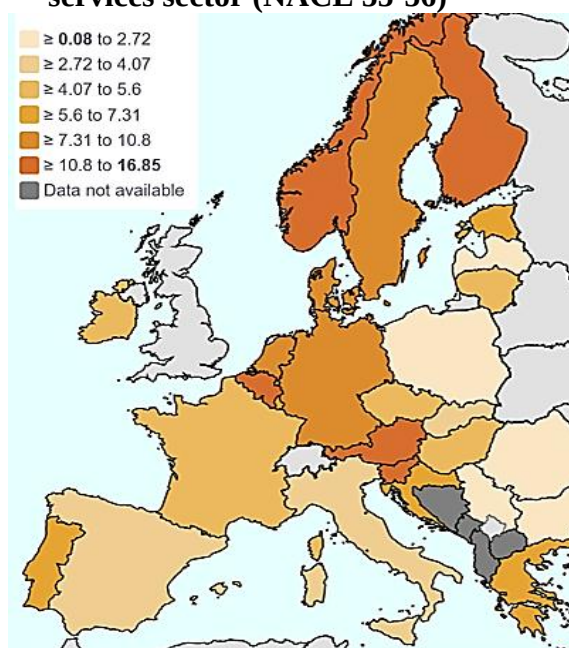
Figure 2: Opinions on the impact of artificial intelligence (AI) on hospitality according to hoteliers worldwide as of the 3rd quarter 2024, by department



Source: Retrieved from Statista (2024). *Opinions on the impact of artificial intelligence (AI) on hospitality according to hoteliers worldwide as of 3rd quarter 2024, by department.*
<https://www.statista.com/statistics/1558636/opinions-impact-ai-hospitality-by-department-worldwide/>

In the European context, the Czech Republic lags behind the EU-27 average in the share of enterprises using AI; the spatial distribution is shown in Figure 3. Within the EU-27, Czech enterprises with more than 10 employees trail in the use of AI tools, while the most active are in Denmark (27.58%) and Sweden (25.09%); in Finland, as many as 70% of large enterprises use at least one AI tool (CZSO, 2025). At 11.26%, the Czech Republic is ahead of Poland (5.9%) and Slovakia (10.78%) on this metric. In tourism, the Czech Republic (4.42%) is below the EU-27 average (6.09%) and ranks near the bottom (Eurostat, 2024; Statcounter Global Stats, 2025). Slovenia leads (16.9%), followed by Austria (15.8%), Belgium (15.6%), and the Nordic countries (10–11%; see Figure 3).

Figure 3 Distribution of AI use in EU27 countries in the Accommodation and food services sector (NACE 55-56)



Source: Retrieved from Eurostat (2024). *Artificial intelligence by NACE Rev. 2 activity.*
https://ec.europa.eu/eurostat/databrowser/view/isoc_eb_ain2/default/map?lang=en

The use of artificial intelligence in Czech tourism enterprises in 2024 shows considerable disparities, both geographical and sectoral. Lower AI adoption may be explained by a more cautious perception of AI's potential. As for accommodation and food-service establishments (NACE Rev. 2: 55—Accommodation; 56—Food and beverage service activities), with 4.8%, their progress in AI implementation compared with other sectors can be described as "lagging." Only construction (NACE Rev. 2: 41–43; 2.8%) and transport (NACE Rev. 2: 49–53; 4.7%) fare worse. Higher implementation activity is observed in accommodation services (NACE 55: 5%) than in food services (NACE 56: 3.8%), with AI most often used for advanced text analysis.

By contrast, we can describe implementations within travel agencies—which have a significant influence on hotel occupancy—as "progressive" (see Figure 4). On the positive side, hotel services belong to the roughly 50% of NACE-2 enterprises that use AI for sophisticated purposes, i.e., for advanced data analytics. As noted above, a range of tools is available for the application of artificial intelligence. According to Table 2, hotel companies using generative AI occupy a significant position in the tourism market (74% of hotels in Europe).

Given the targeted use of AI in Czech hotel companies—namely, data analytics and text/speech generation—it can be concluded that chatbots are important for tourism enterprises (Gáll, 2024). In Europe, the AI-chatbot market is generally led by ChatGPT (87.16% of generative AI users), followed by Perplexity (9.29%) and Google Gemini (2.63%), among others (Statcounter Global Stats, 2025a). The Czech market similarly shows dominant demand for ChatGPT (88.92%), with Perplexity and Google Gemini at 7.39% and 3.24%, respectively (Statcounter Global Stats, 2025b).

Table 2: AI tools in the global tourism market

Tool / Area	Utilization Rate
RMS* general (global)	83.9% RMS users; another third plan to invest
Generative AI (ChatGPT, Gemini, etc.)	74% of hotels (Europe, total 2025)
Online review analysis (AI sentiment, text mining)	approx. 44% in DACH**
Predictive analytics	approx. 44% in DACH
Dynamic pricing / RMS with AI	42% (total); 50% in ROOF
Offer personalization/recommendations	38% (total)
Chatbots for guests	31% (total); 37% in DACH
Robotics/room automation / AI in the kitchen	< 10%
Facial recognition	approx. 2% in DACH

Source: Retrieved from HES-SO. (Schegg, 2025) *AI adoption in European hospitality: Survey 2024/25*.
<https://www.hevs.ch/media/document/22/schegg-2025-ai-adoption-in-european-hotels-03072025.pdf?cb43600d9790df7f71d3097ed265ff6b=>

Note: *RMS Revenue management system, DACH – Austria, Germany, and Switzerland)

It can be assumed that a comparable distribution of chatbot product use is reflected within Czech hotel companies (see Table 3 for practical examples). Gáll (2025) further argues that, beyond chatbots and service robots, biometric AI tools are also important for the hotel industry; however, their use in the Czech Republic remains very limited (0.8%; CZSO, 2024). Horák (2022) notes that accommodation and food-service establishments are the only sector that does not employ machine learning or deep learning for data analysis.

At the same time, a more dynamic trajectory of AI implementation in tourism is likely, given the rising influence of younger cohorts associated with Industry 4.0 and the IT/ICT era. For example, The Guardian (2025) reports rapid growth in AI usage for holiday booking among

those aged 25–34: 18% used AI for trip planning, and three out of five entrusted the task to an AI assistant.

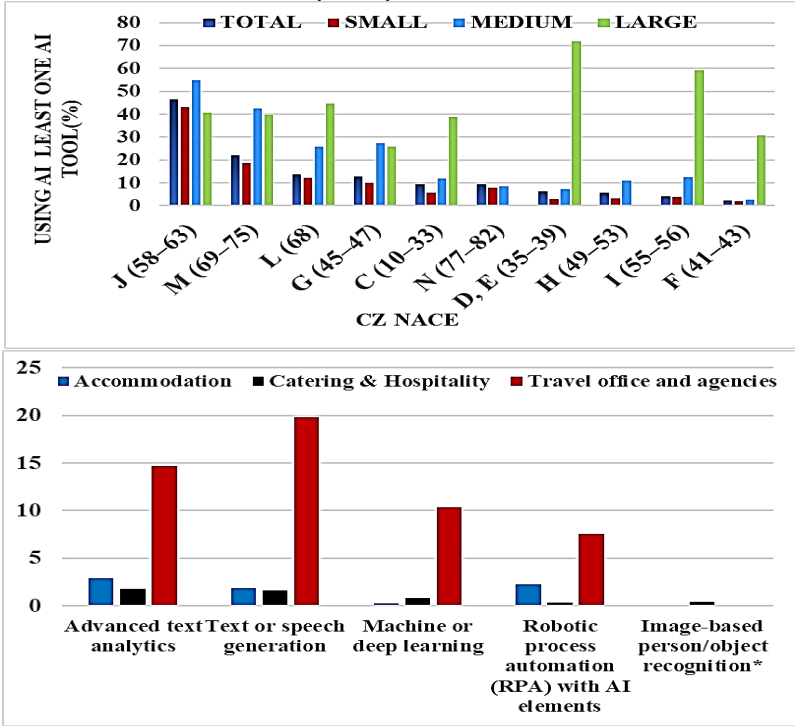
In terms of implementation, smaller hotels in the Czech Republic face knowledge and cost barriers, whereas larger hotels struggle more with data integration and organizational inertia. Smaller hotels encounter implementation difficulties and tend to adopt less demanding chatbots. Czech SMEs also experience digitalization challenges (the Czech Republic is below the EU-27 average; European Commission, n.d.).

By contrast, the strong engagement of travel agencies with AI (reflecting links between hotels and travel agencies/offices) stems from their predominantly online operations, high-quality and consistent data, strong incentives for rapid personalization and automation of content and sales, and teams with robust digital competencies. In accommodation establishments, adoption is slower due to fragmented and legacy systems (PMS/CRS), a high share of offline traffic, and likely less standardized data.

According to the Czech Statistical Office (CZSO, 2024), hotel companies with more than 10 employees use AI primarily in followed by accounting and finance (2.9%), organizational and administrative processes, management, or human resources (2.1%), and marketing (2.1%).

This pattern contrasts with broader national trends, where AI is most commonly used for marketing purposes (CZSO, 2024). The CZSO further reports that small firms face greater implementation difficulties than large firms, mainly due to financial constraints (CZSO, 2024; own research). In 2024, AI tools were applied in only 8.9% of small companies (10–49 employees) compared to 40.5% of large companies. In small companies, the focus is predominantly on text and speech generation, whereas large companies are more likely to use advanced text analytics (Figure 4).

Figure 4: Sectoral comparison of the use of AI tools in companies in the Czech Republic (2024)



Source: Retrieved from CZSO. (2024). *Use of information and communication technologies in the business sector – 2024*. <https://csu.gov.cz/products/use-of-information-and-communication-technologies-in-the-business-sector-2024>

Note: RPA: robotic process automation, *no data

In practical examples (see Table 3), one can observe that the fastest-payback use cases lie in automating guest communication (chatbots/voicebots connected to PMS/CRM and the booking flow), dynamic pricing and revenue analytics, and data-driven "operational insights" (demand forecasting, benchmarking, and cost control). Several firms also report specialized solutions (e.g., AI-generated algorithms for menu and beverage design-TasteCode-or energy management) that deliver competitive advantage. At the same time, negative experiences have emerged (e.g., the temporary abandonment of AI in customer communication by some chains), underscoring the key role of humans in the loop and careful service design integration.

Al-Hyari et al. (2023), in a study of 89 managers of 5-star hotels in Jordan, likewise conclude that *"although artificial intelligence has the potential to significantly enhance guest satisfaction in luxury hotels, it is essential to balance the use of AI with human interaction. Many guests still value the personal touch and human connection that come with traditional hospitality"*. Scapi (2024) also confirmed the hypothesis that *"a customer relationship managed by a chatbot will lead to lower psychological ownership than a relationship managed by a human (correlation = -0.60; p-value = 0.04)"*. Studies by Yoon et al. (2025) further report that higher psychological ownership among hotel customers leads to increased loyalty and brand adoption.

Table 3 Examples of AI use in tourism businesses – How managers see it

Enterprise	Tools AI	Activities
Pytloun Hotels	ChatbotAI for energy management	Monitoring of demand, price proposal, reservations, and energy regulation
Orea hotels	Robotics, Chatbot	Reception, cleaning, marketing, email correspondence, hotel communication (inquiries - Pepper robot)
Boutique Hotel	Text GPT	Text translation, text creation (meal tickets, offers), contract evaluation,
SwissHouse	GPT and AI software platforms	Data analysis (planning, price calculation control, waste), offer texts
Resort Orlik	Custom algorithm for AI, text IA	Destination of meals, cocktails, HR (shift schedule), marketing
Hotel Adriana.	ChatGPT, Gemini	Language models, generating responses to reviews, and preparing meetings
Restaurant Alma Prague	Menubot.cz*	Translations, creation of offers (menus)
Alliance Together	Robot "Connie"	Customer communication, forecasting trends, and market developments
Hotel Hilton	Robotics, chatbot	(services, chatbot connected to social networks
Inn Hotels	Leaving AI (Mikulášek, 2023)	AI communication worsened guest satisfaction and the number of orders compared to the traditional model.

Source: Retrieved from Gastrohotel. (n.d.). *Artificial intelligence in the hotel and catering industry*.
<https://gastroahotel.cz/umela-intelligence-v-hotelnictvi-a-gastronomii>

Impacts of implementing AI tools

As mentioned above, the implementation of AI tools brings both positive and negative effects. Table 4 summarizes the measurable effects, including costs, sales, and customer experience. For example, the Python hotel chain states that the introduction of a chatbot reduced the number of telephone inquiries at the reception desk by 40%. Smart thermostats and AI energy management led to 15% savings. (Network Director).

AI saves the housekeeper about a third of her time and allows her to focus more on guests and their experiences (GastroHotel, n.d.). For example, Resort Le Canton (BR) reports that thanks to conversational AI (Askuite) in customer service and sales, direct bookings increased from 30% to 70%, and ROI increased significantly (32x).

Many authors are inclined to reduce costs; especially in the literature, they talk about savings in operating costs, especially labour costs, and energy savings are considered significant. This hypothesis follows from the findings that many tourism companies are replacing labour with AI tools. In their research, Hui et al. (2025), the authors, confirmed this assumption, stating *"that the release of ChatGPT leads to a 2% drop in the number of jobs on the platform and a 5.2% drop in monthly earnings"*.

Companies are also trying to use AI for innovative approaches to menu creation and to apply sustainability elements (optimization of raw material costs, elimination of waste). According to Schegg (2025), the most common reason for implementing AI is time savings (76%); this factor is the most frequently cited benefit, followed by improved communication (54%) and operational efficiency (51%). According to Gatera (2024), the integration of AI into business processes increases profitability by 5 to 15%. For more details on cost savings, see Table 4.

Table 4 Concrete cost savings thanks to AI in the hospitality industry.

Area/Indicator	Measurable effect of AI in CRM	Quote
Reduce operating costs	-38% (financial sector, thanks to chatbots and automation)	(Munira et al., 2025)
Energy savings	Significant reduction in operating costs	(Gajić, et al., 2024)
Reduce customer response time	-57% (faster responses thanks to AI chatbots)	(Munira, Juthi, and Begum, 2025; Khneyzer et al., 2024)
Increase customer retention	+28% (personalization, churn prediction)	(Munira et al., 2025; Khneyzer et al., 2024))
Increase profitability per customer	+22% (better segmentation, targeting and upselling)	(Munira, et al., 2025; Khneyzer et al., 2024)
Increase customer engagement	+53% (targeted campaigns, personalization)	(Munira et al., 2025; Khneyzer et al., 2024)
Reduce human resource needs	Significant reduction in the number of operators thanks to automation	(Khneyzer et al., 2024)
Increase sales efficiency	Higher conversions, faster lead processing	(Khneyzer et al., 2024)

Retrieved from basic research literature

Conclusion

The analysis presented confirms that the adoption of AI tools in the hospitality industry is ongoing but uneven—across countries and across tourism sectors. This disparity suggests that while some regions are rapidly adopting technological advances, others may be lagging, potentially affecting their competitive advantage in the global market. Addressing these disparities will be key to ensuring a more balanced and effective integration of AI across the industry. RQ1 can be assessed at both the geographical and sectoral levels, as the Nordic countries of Europe are leaders in the EU's advanced digital economy, while the Czech Republic remains below the EU-27 average in the implementation of AI tools. This disparity highlights the need for targeted investment. The lag in the hospitality industry is driven primarily by fragmented legacy systems, inconsistent data, capacity constraints, and financial limitations. Addressing these challenges will require innovative solutions and a move towards more integrated technological systems.

Regarding the second research question, RQ2 (area of application): AI tools are most commonly used in marketing and communication (chat/voice), in analytics and revenue management (demand forecasting, dynamic pricing), and in the automation of routine queries and processes (24/7 service). As businesses begin to realize the long-term benefits of these technologies, we can expect wider adoption across industries. This shift can lead to increased operational efficiency and innovative strategies that redefine customer engagement and overall market dynamics. At the same time, it is necessary to consider customer trust and respect the specific nature of services (a greater need for the human element) to avoid eroding that trust. Such sustainable transformations will allow companies to respond quickly to market demands, while also fostering a deeper connection with their customers and stronger brand loyalty. Another possible direction of research in the field of tourism (accommodation, catering) could be, according to Consensus (Generation Consensus-ai, 2025, prompt IA in CRM in tourism) topics such as long-term customer loyalty, ethics and cultural implications are insufficiently explored. There is also a lack of studies in the literature that would address the issues of return on investment (ROI) in artificial intelligence in customer relationship management (CRM) and its impact on different customer segments.

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THE POTENTIAL OF CONVERSATIONAL AI SYSTEMS IN EDUCATION AND THEIR IMPACT ON THE ECONOMIC AWARENESS AND PROFESSIONAL SKILLS OF GENERATION Z¹

POTENCIÁL KONVERZAČNÍCH SYSTÉMŮ UMĚLÉ INTELIGENCE VE VZDĚLÁVÁNÍ A JEJICH DOPAD NA EKONOMICKÉ POVĚDOMÍ A PROFESNÍ DOVEDNOSTI GENERACE Z

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Abstract: This article presents research on how the perceived efficiency and quality of conversational AI systems affects the economic awareness of Generation Z 19+ depending on the professional competencies. A questionnaire survey among students of economically orientated programmes and an analysis of study programme profiles revealed five dimensions of interaction with AI: output quality, context understanding, trust, user comfort, and AI literacy. The analysis has shown that the effective use of AI significantly increases student satisfaction, perceived usefulness, and economic awareness, with the differences corresponding to the focus of individual fields and their competency profiles. The findings confirm that the development of communication and interpretation skills through AI contributes to the formation of economic literacy, critical thinking, and professional adaptability of the current young generation.

Keywords: Artificial Intelligence, Study Programmes, Education, Competencies

JEL: 1 F63, D83, I23

Abstrakt: Tento článek představuje výzkum, jak vnímaná efektivita a kvalita konverzačních AI systémů ovlivňuje ekonomické povědomí generace Z 19+ v závislosti na profesních kompetencích. Dotazníkové šetření mezi studenty ekonomicky orientovaných programů a analýza profilů studijních programů odhalily pět dimenzí interakce s umělou inteligencí: kvalitu výstupu, porozumění kontextu, důvěru, uživatelský komfort a gramotnost v oblasti AI. Analýza ukázala, že efektivní využívání umělé inteligence významně zvyšuje spokojenost studentů, vnímanou užitečnost a ekonomické povědomí, přičemž rozdíly odpovídají zaměření jednotlivých oborů a jejich kompetenčním profilům. Zjištění potvrzují, že rozvoj komunikačních a interpretačních dovedností prostřednictvím AI přispívá k formování ekonomické gramotnosti, kritického myšlení a profesní adaptability současné mladé generace.

Klíčová slova: Umělá inteligence, Studijní programy, Vzdělávání, Kompetence

JEL: 1 F63, D83, I23

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Introduction

Conversational artificial intelligence (AI) systems are significantly transforming educational processes, transforming the ways of human interaction and information transfer. They significantly increase the personalization of education, which results in improved educational outcomes and, secondarily, in an increase in the social and economic potential of the population. Therefore, it is evident that conversational AI systems that enable adaptive and interactive forms of communication deserve separate attention and offer research potential. In academia, conversational AIs represent a new element of digital education (Baha et al., 2023). An important factor is the ability to provide immediate feedback, structure information, and simulate expert dialogue. It is a technology with a high degree of generalisation of knowledge, the benefit of which is manifested especially in fields requiring analytical, communication, and interpretive skills, in fields supporting knowledge competences, including economic literacy. This portfolio of study programmes can be identified in economically orientated faculties. Therefore, it is possible to state that the implementation of AI conversational tools in the process of teaching economics can significantly affect the future economic environment and the economic potential of society. According to Guerra-Tamez et al. (2024) and Zhang et al. (2025), current Generation Z possesses relatively broad digital literacy, but lacks a deeper understanding of AI principles and its economic significance. Their perception of AI is largely intuitive and is derived from the common user experience, based on digital conversational platforms and social networks. This fact shows the possible research potential to what extent the perceived efficiency and quality of conversational AI systems affects economic awareness and professional skills, which form the basis of subsequent employability in the labour market. Empirical research is based on a combination of a questionnaire survey among first-year students of economically orientated study programmes and an analysis of the profiles of graduates of various study programmes. These areas define the expected learning outcomes and professional competencies of graduates. The data structure allows us to compare the perception of AI of the Z 19+ generation from the perspective of the user with the system of formally developed skills and thus identify possible disproportions between the current level of knowledge and competence and the educational goals of universities.

The motivation for the analysis research was the current state of the teaching process and the identification of usable AI tools in this process. It was necessary to evaluate how conversational AI systems affect economic thinking and behaviour in Generation Z 19+ students. From this motivation follows the goal of the research and the presented contribution, which is to evaluate the interconnections and influences between the perceived effectiveness and quality of conversational AI systems and the economic awareness of the Z 19+ generation depending on professional and industry skills. The first phase of the research was carried out on a questionnaire survey. Subsequently, an analysis of professional competencies was carried out, we found out how these relationships differ according to the study focus. In this phase of the research, we examined the degree of interaction between students' economic competencies (measured by knowledge and attitude factors by field) and the effectiveness of AI communication. This research direction was chosen based on the findings of research in the literature, which identified the fact that the economic potential of Generation Z is increasingly influenced by the adoption and integration of new tools and competencies, including AI conversational systems. This is conditioned by the formation of the entrepreneurial, creative, and work skills of Generation Z in the digital environment, which fundamentally changes the way Generation Z 19+ learns, works, and communicates. The contribution of the research is the creation of an empirical framework for assessing the educational potential of conversational AI systems in terms of the development of economic thinking, AI competencies of students, and professional focus. The results can serve as a basis for optimising educational strategies or in projects of digitalisation of teaching. They will play an important role in understanding the role

of AI in the development of the future workforce in the context of perception of the economic reality of the upcoming generation.

Research and literature research have identified a lack of connection between the effectiveness of AI communication, economic competence, and the attitude of the young generation toward the digital economy. Therefore, this research can be understood as a data-driven link between education, economic awareness, and the EduAvatars project.

1 Literature review and conceptual framework

A literature review was conducted to identify and provide a research background in the research line. It mainly includes research focused on the quality of communication using artificial intelligence, literacy in the field of artificial intelligence, links between AI and Generation Z, economic awareness, and competences in education. Published studies point to the fact that the development of conversational AI systems has fundamentally changed the way of education. A significant part of the research is devoted to the potential of conversational AI in education. The importance of conversational AI tools is highlighted by multiple authors. Baha et al. (2023, p. 10153) states that: *"Conversational agents (CAs) are among the most prominent AI systems for supporting learning and learning processes"*. At the same time, they state (p. 10166) that *"by enabling students to ask questions and receive responses that enhance their understanding and overall learning experience"*. Khosrawi-Rad et al. (2022) confirm that chatbots improve student motivation and strengthen the individualisation of teaching, but their effectiveness depends on the quality of the generated text. According to Debets et al. (2025), conversational AI significantly improves student engagement, primarily through instant feedback and adaptive learning. In general, a wide range of publications involving the use of conversational models in education can be named, mentioning in particular the rapidly transforming learning environment, personalised learning, automation of administrative activities, or support for communication between students and teachers, to name but a few, Abulibdeh et al. (2024), Akpan et al. (2024), Dempere et al. (2023) or Hultberg et al. (2024).

If we focus on literature resources related to information and communication literacy and interaction in the field of AI, the authors agree that AI literacy significantly strengthens the ability to communicate effectively and critically evaluate. Laupichler et al. (2022) define AI literacy as a set of technical, cognitive, and ethical skills that allow students to understand and interact with processes. Zhang et al. (2025) draw attention to the fact that AI literacy lacks a uniform definition, across studies, in addition to the reported effective communications, understanding models, interpreting data, and reflecting on risks are most often mentioned.

Therefore, the development of AI literacy requires the integration of communication, interpretation, and decision-making competencies into educational processes. Among the widely discussed and researched topics are the links between the use of AI in higher education and the development of competencies. The university environment has become crucial for the development of AI competencies. For example, Kim & Adlof (2023, p. 38) directly point out the domino effect: *"...its influence on education is profound, and the ripple effects have the potential to catalyse further transformative changes"*. Abbasi (2024) emphasises that effective AI implementation requires integration into teaching concepts, otherwise its impact remains limited. Kikutadze & Lekishvili (2025) point to the positive connections of AI literacy and psychological factors related to autonomous behaviour, competence, and self-regulation, which supports the natural development of professional abilities.

Other publications sources were searched in the context of the connection between AI and economic awareness and competences. Although the impacts of AI on education are well described, the impact of conversational AI on students' economic awareness remains poorly explored. Although Firat (2023, p. 60) has identified nine key topics for students, including *"The future of work and employability"*, he describes the actual formulation of the topic

vaguely: *"The integration of AI in education and the job market may lead to the disappearance of certain job categories and the emergence of new ones, requiring a reevaluation of educational programmes and curricula"*. Authors such as Khosrawi-Rad et al. (2022) and Debets et al. (2025) confirm that the link between AI communication and economic competencies represents an open research area with high application potential.

There are also studies that examine possible limitations and prohibitions of AI in the teaching process; see, for example, Kim & Adlof (2023, p. 40) state that *"it is unlikely that educators and policymakers can fully ban the use of this technology in educational environments"*, the authors also point out (p. 40) to: *"Academic integrity problems, disinformation risks, and threats to critical thinking"*. In summary, when it comes to outcomes related to education, AI, and economic knowledge, a wide range of authors agree on the fact that more empirical research is needed on the long-term economic effects and effectiveness of AI in diverse settings; in this sense, the research of Zahara (2025) and Choustoulakis (2024) can be cited.

Based on the synthesis of findings from the literature review, it can be stated that current research studies confirm the fact that conversational AI systems improve the quality of educational communication and personalise the learning process (Khosrawi-Rad et al., 2022, Debets et al., 2025). AI literacy is proving to be a key factor in the successful integration of AI into education, combining technical, critical, and ethical dimensions, as reported in their studies, for example, by Laupichler et al. (2022) and Zhang et al. (2025). The university environment is essential for the development of these skills. Empirical studies confirm the impact of AI on improving student digital, interpretive, and decision-making skills, as reported by Kikutadze & Lekishvili (2025).

The identified research studies further highlight Gen Z's orientation towards creativity, innovation, and entrepreneurship, especially in digital and IT-driven industries. This gives Generation Z a competitive advantage and fosters entrepreneurial creativity (Abed, 2024). The research gap persists in the interaction of AI with economic awareness and professional readiness, which has served as motivation for this research and the choice of the area that this paper explores and empirically tests. Guerra-Tamez et al. (2024, p. 2) shows the perception of the economic essence of Generation Z: *"Generation Z's unique positioning as the first true digital natives makes their analysis imperative in studies concerning AI's impact on consumer behaviour"*.

The literature review created the theoretical basis for the conceptual framework of this study, which integrates three key research areas, conversational AI, AI literacy, and economic and professional competencies. Conversational AI systems simulate interpersonal dialogue and provide motivational feedback to improve the effectiveness of communication, contextual comprehension, and reflective reasoning during the learning process. AI literacy determines how effectively users interpret AI-generated output, evaluate their reliability, and integrate them into a professional knowledge framework.

Professional competencies then reflect the range of students' abilities to translate the acquired knowledge into economically meaningful thinking and applicability. The proposed framework assumes that the perceived effectiveness and quality of conversational AI systems affect students' economic awareness through the development of AI literacy and in relation to professional orientation. The model therefore takes into account differences across study programmes and takes into account differences in professional orientation (e.g., digital business, finance, marketing) in terms of the intensity of this relationship.

2 Methodology and data

The methodology is defined in order to confirm or reject hypotheses and determine answers to research questions. The research is conceived as a quantitative empirical study focused on the analysis of the relationship between perceived effectiveness and quality of conversational AI systems, the development of economic awareness and professional competencies of students of the Z 19+ generation. The research uses exploratory factor analysis methods to identify latent dimensions in respondents' responses and in competency models of fields. Subsequent regression and comparative analyses verify the relationship between the factors of quality of communication with AI, economic awareness, and professional orientation of students.

The emphasis is placed on dimensions in which AI has the potential to enhance communication and interpretation skills that directly affect the economic and technological behaviour of an individual. The intention is to identify the latent factors associated with AI communication and verify whether their combination predicts the level of economic awareness and readiness of students.

The methodological framework was derived from the research objectives and the progressively identified results. It was designed as a quantitative empirical study composed of three main stages: (1) a student survey aimed at collecting data on AI perceptions and subsequently identifying latent factors through exploratory factor analysis; (2) a content analysis of study programmes, which allows one to derive competence indices for individual fields of study; and (3) regression modelling used to test the relationships between the quality of interaction with AI, students' economic awareness, and their professional competences. These methods were chosen because they allow for the identification of hidden dimensions of AI perception, the quantification of the impact of competences on economic thinking, and the verification of hypotheses regarding the predictive power of individual factors.

Questionnaire survey: The questionnaire was distributed electronically among students of economic-orientated programmes. A total of almost 500 respondents were addressed, of which 312 valid responses were included in the analysis. The questionnaire contained 68 questions, five questions were about demographics, 21 questions examined the areas where students encountered conversational tools, 42 questions mapping awareness and experience about conversational AI tools were used for factor analysis (for example: "*[It helps me get the information I need quickly.]; [The answers are practically usable for me.]; [This technology increases my efficiency.]*" etc.). The questions were introduced by the text: "*Please indicate on a scale from 1-7 how you perceive the AI conversational AI (a specific AI tool is listed, e.g. Chatbot, Voicebot, Callbot)*" with the offered variants of answers "*(1- I completely disagree with the statement, 7- I completely agree with the statement)*". The questionnaire is available at <https://forms.gle/yuWNaXAHvG2KzBgY6>.

The research sample was selected in a targeted manner, by quota selection of first-year students, so that it would not be burdened by the knowledge provided in higher education. All students of the professionally orientated programmes of Managerial Informatics, Digital Business, Finance and Accounting, Marketing, Tourism and Tourism, International Business and Social Management were addressed. The questionnaire was aimed at a regionally focused university with international reach.

The research was carried out at the Silesian University in Opava, specifically at the Faculty of Business and Entrepreneurship in Karviná. Respondents were selected cross-sectionally from fields related to business, economics, and IT. Respondents responded using a seven-point Likert scale (1 = strongly disagree, 7 = strongly agree), with the additional option "*I cannot answer*". This variant was coded as missing value (NA) during the analysis and was supplemented by the median. In cases where multiple values were selected (e.g. 1,3,4), the answer was interpreted as an average, thus preserving the ordinal character of the data.

Verification of the reliability of the questionnaire was carried out using Cronbach α (1). The data analysis was performed using SPSS, Microsoft Excel and ChatGPT 5.0 software.

$$\alpha = \frac{k}{k-1} \left(1 - \frac{\sum_{i=1}^k \sigma_i^2}{\sigma_T^2} \right) \quad (1)$$

where k is the number of items, σ_i^2 is the variance of the item, and σ_T^2 is the variance of the sum of the scale.

Cronbach α achieved values in the range of 0.78–0.88, which confirms the internal consistency. Values $\alpha \geq 0.70$ are considered acceptable.

Exploratory factor analysis (EFA): Exploratory factor analysis (EFA5) was used to identify and confirm latent factors. A combination of descriptive exploratory and predictive methods was chosen. The process was divided into three consecutive analytical phases, including the identification of the factor structure, the comparison of factor dimensions with the competency profiles of the study fields, and the modelling of prediction of economic awareness and professional competencies.

The general form of the factor model is expressed by equation (2)

$$\mathbf{Z} = \mathbf{LF} + \mathbf{U} \quad (2)$$

where $\mathbf{Z}$ is the standardised data matrix, $\mathbf{L}$ is the factor load matrix, $\mathbf{F}$ is the factor score vector, and $\mathbf{U}$ is the error (residual component). The "principal components" method with varimax rotation was applied. Based on the values of the eigenvalues (> 1) and the scree test, five latent factors (F1–F5) were confirmed.

The suitability for factor analysis was performed by the Kaiser–Meyer–Olkin test (KMO), which was used to evaluate whether the sample responses were sufficient (3). The KMO value ranges from (0) to (1), the limit of suitability for analysis is > 0.6 .

$$KMO = \frac{\sum_{i \neq j} r_{ij}^2}{\sum_{i \neq j} r_{ij}^2 + \sum_{i \neq j} p_{ij}^2} \quad (3)$$

where r_{ij} are correlations and p_{ij} are partial correlations.

The calculated KMO value of 0.81 indicated the sampling adequacy suitable for EFA (Kaiser, 1974). Bartlett's sphericity test: $\chi^2 = 1423$, $p < 0.001$ confirmed the suitability of the data for factor analysis.

Regression models (OLS): Multiple linear regressions were used to validate the **H1** and **H2** hypotheses (4). The basic model predicted economic awareness (*EI*) from factor scores F1–F5 and satisfaction (*SAT*).

$$MODEL_z = \beta_0 + \sum_{k=1}^m \beta_k F_{ki} + \sum_{j=1}^n \gamma_{ij} ES_j + \varepsilon_z \quad (4)$$

where $MODEL_z$ is the model in question, ε_z is the error of the model in question. F_k is the latent factors, m is the number of factors, n is the number of *ES*, ES_j denotes the relevant *expanding score* for the selected model (e.g. competency indices), γ_i and β_i are the regression coefficients for the predictors, ε_z is the relevant random component.

A concretised model for predicting economic awareness (*EI*) from factor scores F1 to F5 and satisfaction (*SAT*) extended by the Competency Index of the Field (*COMP*) is represented by equations (5).

The competency index expresses the level of digital and analytical skills of a given study programme. The model extends the basic regression by including the competence index as a moderator variable.

$$EI_i = \beta_0 + \sum_{k=1}^5 \beta_k F_{ki} + \gamma_1 SAT_i + \gamma_2 COMP_i + \varepsilon_z \quad (5)$$

The meaning of variables, constants, and coefficients is identical to the previous equations.

Content analysis: Evaluation of the competencies of students from the defined profiles of graduates was carried out on two key levels, "*learning outcomes*" and "*employability of the graduate*".

Based on the content analysis carried out using AI ChatGPT 5.0, key terms were identified and searched. Using prompts, a frequency meaning analysis was empirically refined, based on the frequency of expressions related to concepts related to conversational AI tools, followed by a frequency analysis in connection with study programmes. The finalisation was carried out by calculating the competency index (6), the values were normalised by min-max scaling and given in matrix **C** according to equation (7). Individual elements of the matrix were calculated using (8)

$$I_{ij} = \frac{x_{ij} - \min(x_j)}{\max(x_j) - \min(x_j)} \quad (6)$$

where x_{ij} is the frequency of keywords for field i in domain j , x_j is the range of occurrences for the given domain across scopes, I_{ij} is the relevant competency index.

$$\mathbf{C} = \begin{bmatrix} c_{11} & \cdots & c_{m1} \\ \vdots & \ddots & \vdots \\ c_{1n} & \cdots & c_{mn} \end{bmatrix} \quad (7)$$

where n indicates the analysed study programmes, m indicates the competence domains and c_{ij} is the value of the competency index in the range $\langle 0,1 \rangle$. The c_{ij} values for matrix **C** were

$$c_{ij} = \frac{x_{ij}}{\max(x_j)} \quad (8)$$

where the meaning of the variables is identical to (6) and (7).

In the first phase of the investigation (analysis of the questionnaire survey), we formulate the research question Q1.

Q1: "*How does the perceived effectiveness and quality of conversational AI systems affect the economic awareness of Generation Z students?*"

In connection with this question, the H1 hypothesis was established.

H1: "*A higher level of quality and effectiveness of interaction with AI positively predicts the level of economic awareness of students*".

The research data were therefore obtained by a questionnaire survey carried out among first-year students of an economically orientated faculty and by a content analysis of the profiles of study programmes that define the expected competencies and employability of graduates.

Subsequently, an analysis of professional competencies was carried out. At this stage of the research, key competencies were identified from the profiles of graduates of professionally orientated study programmes (Tourism, Marketing, Management Informatics, Digital Business, Finance and Accounting, International Business and Social Management) using ChatGPT 5.0.

Based on these competencies, the Q2 research question was formulated.

Q2: "To what extent does the competency profile of the study focus participate in the relationship between the perceived quality of AI communication and the economic awareness of students".

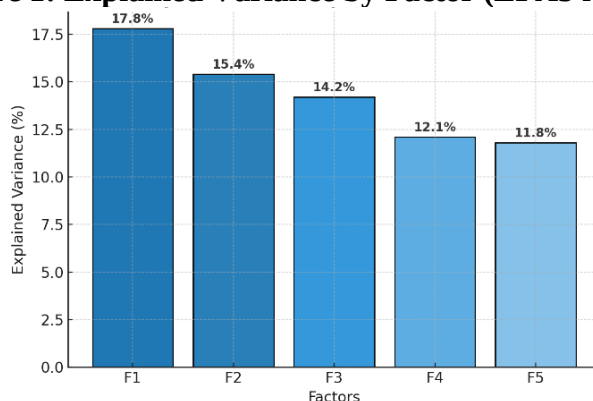
In connection with the second research question, the H2 hypothesis was expressed.

H2: "Students in fields with a higher share of digital and analytical competencies (e.g., Managerial Informatics, Digital Business) show a stronger positive effect of AI interaction on economic awareness than students of socially orientated fields (e.g., Social Management, Tourism)".

3 Results

For the initial phase of the investigation, five latent factors F1 to F5 were identified using EFA, which explain 71.3% of the total variance, the factors corresponded to the areas of relevance, context, trust, comfort, and AI literacy. The factor structure was interpreted according to the highest loads ($|\lambda| \geq 0.35$) and then validated by the reliability of the partial scales.

Figure 1: Explained Variance by Factor (EFA5 Model)



Source: Own research (2025), SPSS & ChatGPT 5.0 analysis

The graph in Figure 1 shows the proportion of variability explained by each of the five latent factors extracted from the questionnaire survey data. The distribution confirms that the model with five latent factors (EFA5) is well structured, F1 explains 17.8% of the variance, F2 – 15.4%, F3 – 14.2%, F4 – 12.1%, F5 – 11.8%.

Overall, these five factors explain 71.3% of the total variance, which is above the standard for the social sciences. The content interpretation of the individual factors is summarised in the table in Figure 2.

Figure 2: Table summarising Interpretation of latent factors

Factor	Meaning	Interpretation in the context of variance
F1	Relevance & Benefit	The most significant factor – shows that students primarily evaluate AI according to its usefulness and contribution to their studies.
F2	Contextual Understanding	The second most important factor – focused on the AI's ability to understand a question and answer logically.
F3	Trust & Reliability	Stable factor – expresses trust in AI as a reliable and accurate source of information.
F4	User Comfort	Secondary dimension – simplicity, motivation, user experience.
F5	AI Literacy	The ability of students to understand the principles of AI and evaluate its outputs.

Source: Own research (2025), SPSS & ChatGPT 5.0 analysis

The table in Figure 3 supplements the content framework of individual factors with a link to the dominant responses of the respondents to the questionnaire survey. From the context of the content of the questions, it was possible to determine the interpretation of latent factors and subsequently perform a cluster analysis.

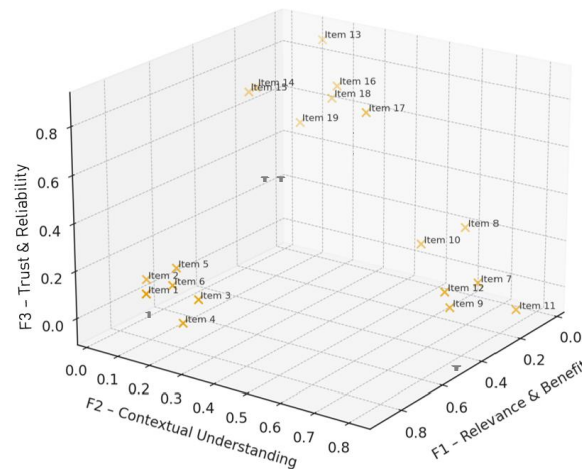
Figure 3: Table assigning dominant questions to latent factors

Item	Question	Factor
1	AI helps me better understand the study content.	F1
2	AI makes it easier to understand complex concepts.	F1
3	AI saves time when preparing for classes.	F1
4	AI outputs are beneficial for studying.	F1
5	AI responds appropriately to the context of the question.	F2
6	AI recognizes the meaning of my questions.	F2
7	AI answers are logically consistent.	F2
8	AI distinguishes nuances of meaning in study topics.	F2
9	I find information from AI trustworthy.	F3
10	AI provides accurate and verifiable answers.	F3
11	I trust AI tools when solving study tasks.	F3
12	Working with AI is easy and intuitive for me.	F4
13	Using AI is pleasant and motivating.	F4
14	AI reduces stress while studying.	F4
15	I understand the principles of AI.	F5
16	I can assess the quality of AI responses.	F5
17	I know how to effectively formulate a query for AI.	F5
18	I can use different types of AI tools (chatbot, voicebot).	F5
19	I follow news in the field of AI and education.	F5

Source: Own research (2025), SPSS & ChatGPT 5.0 analysis

Individual items were visualised using a 3D chart. The graph in Figure 4 shows the spatial distribution of individual items according to the values of the dominant factors F1 to F3, from the spatial distribution of the data, it is possible to identify three clusters. Together, these three clusters confirm that Generation Z does not perceive AI uniformly, but according to three cognitive-affective lines according to the dominant proportion of variance (see earlier Figure 1), these are "usefulness", „understanding“, and "trust".

Figure 4: 3D Factor Space F1-F3 (EFA5 Model)



Source: Own research (2025), SPSS & ChatGPT 5.0 analysis

For each cluster, exactly one dominant dimension can be identified. The table in Figure 5 further specifies these clusters on the basis of the significance of the examined dominant items listed in the table in Figure 3.

Figure 5: Table describing the meaning of clusters

Cluster	Items	Dominant factors	Description of meaning
Cluster 1	Items 1, 2, 3, 4, 5, 6	F2 – Contextual Understanding (low F1, low F3)	A group of items expresses contextual understanding and semantic accuracy. Here, students appreciate that the AI “understands the question”, answers meaningfully, AI is not associated with high trust or efficiency.
Cluster 2	Items 7, 8, 9, 10, 11, 12	F1 – Relevance & Benefit (high F1, low F3)	This group relates to the practical utility and effectiveness of AI. Students perceive AI as an auxiliary tool that increases performance and study efficiency without necessarily requiring deep understanding or trust.
Cluster 3	Items 13, 14, 16, 17, 18, 19	F3 – Trust & Reliability (low F1, low F2, high F3)	This cluster reflects the affective and value dimension – students show trust in AI, perceiving it as a reliable source of information and support in their studies. The relationship to AI here is more emotional than rational.

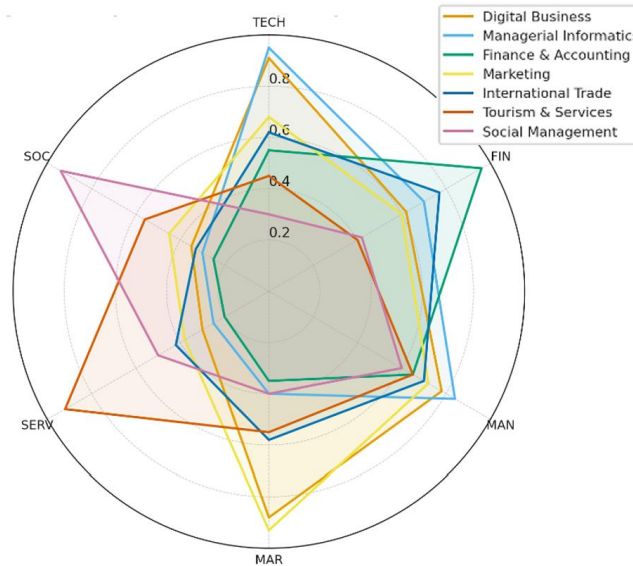
Source: Own research (2025), SPSS & ChatGPT 5.0 analysis

These findings are important for the possible directions of subsequent studies. It is evident that the first cluster with the dominant F1 factor groups items aimed at practicality and efficiency. In terms of meaning, the cluster represents pragmatic users who evaluate AI according to the criterion of *"usefulness for continuous study"*. It contains items 1, 2, 3, 4, 5, 6, which are high-scoring items on the F1 axis. Thus, it is the perception of statements such as: *"AI helps to understand the content"*, *"saves time"*, *"facilitates learning"*, in these statements, AI is understood as a tool that increases performance and learning comfort. From the point of view of shaping economic awareness, it is evident that this group of students uses AI the most to streamline processes, which is related to the development of digital and managerial competencies. The second F2-dominant cluster includes reflective users who rate, depth, and level of understanding of the AI content context. From the point of view of forming economic awareness, it is a group of users who perceive the development of the ability to *"analyse and interpret data"*, which can be interpreted as a condition for the ability to be economically and financially literate. In this cluster, students focus on evaluating AI according to the depth and relevance of its understanding, which corresponds to items 7, 8, 9, 10, 11, and 12. The ability of AI to *"understand questions, provide consistent and semantically accurate answers"* is captured by cluster 3. The cloud corresponds to the dimension of user trust in AI. It includes items related to the trustworthiness, accuracy, and reliability of AI, including items 13, 14, 16, 17, 18, 19. The formation of economic awareness among students in this cluster is influenced by the willingness to use AI in decision-making and the low perception of the risk of possible dependence on AI.

Clusters are important for **H1** confirmation, higher quality, and efficiency of AI interaction (factors F1 and F2) predict higher economic awareness. The importance of industry competencies for the dominant perception of AI in clusters is also obvious, which supports the adoption of **H2**. The differences in the competency profiles of the individual study programmes are shown in the graph in Figure 6, the visualisation is made using the Radar Chart and is an additional tool to interpret the results of the **H2** hypothesis. The graph shows the competency profile of individual study programmes using seven polygon profile curves. The colour polygon expresses the normalised competency profile of one study programme across 6 dimensions (domains). The competency domains are represented by six axes starting from the centre of the

graph, describing "Technological Competence" (TECH), "Financial Competence" (FIN), "Managerial Competence" (MAN), "Marketing Competence" (MAR), "Service & Sustainability Competence" (SERV) and "Social & Ethical Competence" (SOC). Visualisation maintains comparability and visual symmetry, creating a "competency imprint of the study programme".

Figure 6: Radar Chart – Competence Profiles by Study Field

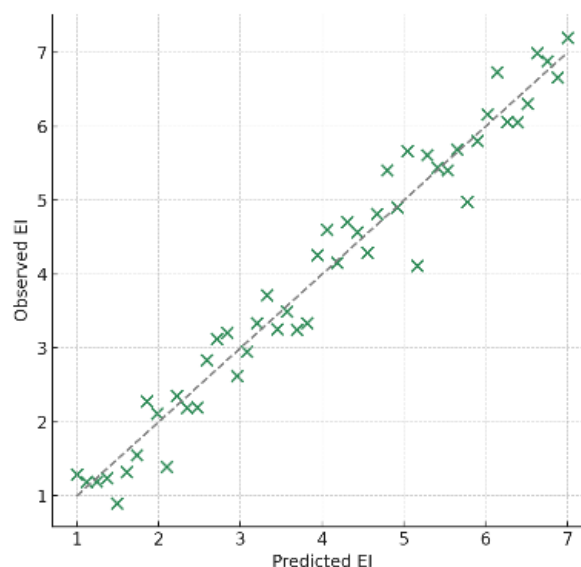


Source: Own research (2025), SPSS & ChatGPT 5.0 analysis

The visualisation shows that technology-orientated programmes (especially digital marketing and management informatics) emphasise *TECH* and *MAN* competencies, while socially and service-orientated programmes (social management, tourism, and services) achieve higher results in the *SOC* and *SERV* domains.

The predictive precision of the regression model that was used to test the hypothesis of H1 and indirectly also **H2** is visualised by the graph in Figure 7. The graph connects the data part (EFA5 + *COMP*) with theoretical conclusions about the impact of AI on students' economic awareness.

Figure 7: Predicted vs. Observed Economics Awareness



Source: Own research (2025), SPSS & ChatGPT 5.0 analysis

The x-axis is used to describe the values of the predicted level of economic awareness (predicted IE), calculated on the basis of factor scores (F1–F5) and the competency index (*COMP*). On the y-axis, there are actually observed values (observed *EI*) based on a questionnaire survey. The graph demonstrates a positive correlation between predicted and actual values, which confirms that AI perception of AI (dominant factors F1 to F3) has a definable effect on the development of economic awareness (*EI*). Strong linear alignment ($r = 0.78$, $R^2 = 0.61$, $p < 0.001$) confirms that perceived relevance of AI, contextual understanding and trust significantly predict students' economic awareness of students. The model accuracy improved further after including the competence index ($R^2 = 0.67$), supporting hypotheses **H1** and **H2**.

To confirm the **hypothesis H2**, 3 segments of study programmes with different levels of technological competence ($COMP = 0.2, 0.5, 0.8$) have been created, the "Low *COMP*" group includes programmes with a low share of technological and analytical competences (*Social Management, Tourism & Services*), the "Medium *COMP*" group includes a group of competency-balanced study programmes (*Marketing, International Trade*), and the "High *COMP*" group included study programmes with a high proportion of digital and analytical skills (*Digital Business, Managerial Informatics*).

The graph in Figure 8 visualises the relationship between the quality of AI communication and the competency profile of students at the level of their economic awareness (*EI*).

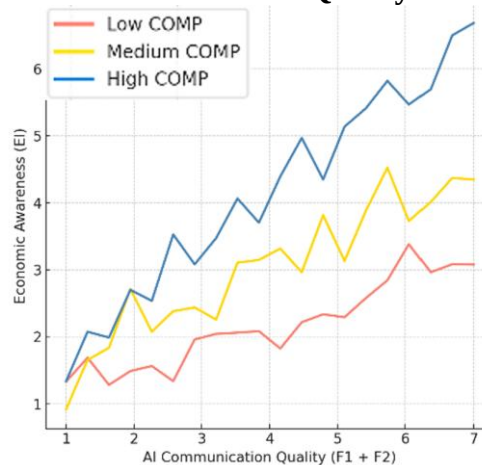
The x-axis presents the values of AI Communication Quality (perceived relevance and contextual understanding of AI systems) given by the sum of the score factors F1 and F2. The y-axis shows the values of the *EI index* measuring the level of economic understanding and the application of knowledge.

The graph shows the difference in the slope of the curves for individual *COMP* groups, which empirically confirms the **H2** hypothesis, and the competency level amplifies the impact of the quality of AI communication on economic awareness. The visualisation shows that students of fields with a higher share of digital and analytical competencies show a stronger positive effect of "AI interaction" on "economic awareness" than students of socially orientated fields.

This graph is a visual synthesis of the presented research, linking factor structure (F1, F2), competency profile (*COMP*), and cognitive impact of AI (*EI*).

It empirically confirms that the benefits of conversational AI systems in education are not universal but depend on the level of professional and digital competences of students.

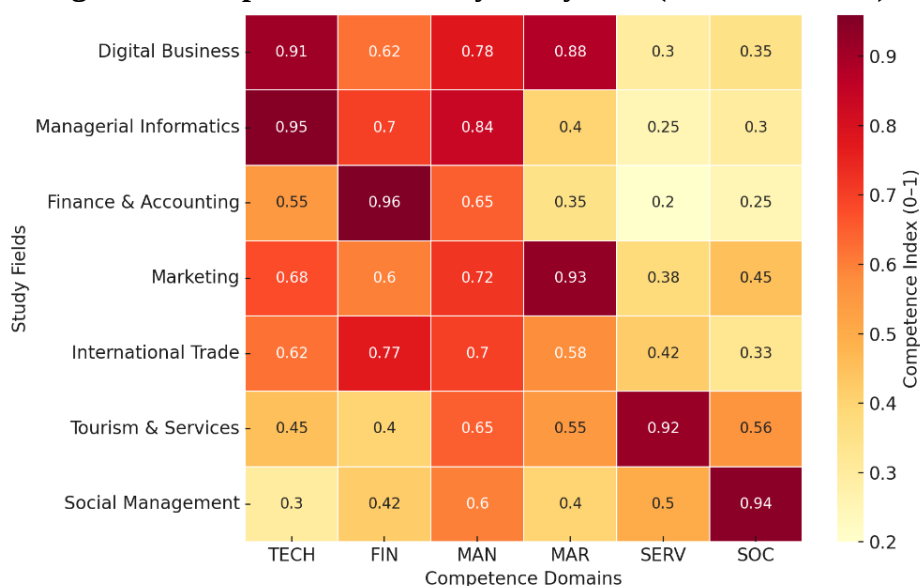
Figure 8: Interaction Communication Quality vs. Competence Index



Source: Own research (2025), SPSS & ChatGPT 5.0 analysis

For the sake of completeness, we also provide a competency matrix (Figure 9), which shows the competency profiles of the individual fields of study in the form of a standardised matrix (0–1).

Figure 9: Competence Matrix by Study field (Normalized 0-1)



Source: Own research (2025), SPSS & ChatGPT 5.0 analysis

The colour shades show the intensity of the development of the competence. The matrix allows for a quantitative comparison of the professional orientation of study programmes. The matrix is a priority input for prediction models. Competencies are described in more detail in the table in Figure 10.

Figure 10: Meaning and content of competence domains

Shortcut	Domain name	Content / characteristics of the competence
TECH	<i>Technological Competence</i>	Includes skills in working with information systems, digital technologies, data analytics, AI. Typical for the fields of Digital Business, Management Informatics.
FIN	<i>Financial & Analytical Competence</i>	Economic and financial analysis, accounting, taxes, data interpretation, ability to derive economic conclusions from numbers. Typical for Finance and Accounting.
MAN	<i>Managerial Competence</i>	Managing people, teams, and processes, strategic decision-making, project management, planning. It occurs in most fields.
MAR	<i>Marketing & Communication Competence</i>	Creativity, communication strategy, working with the market, online marketing, CRM, working with clients. Typical for Marketing, International trade.
SERV	<i>Service & Sustainability Competence</i>	Service orientation, tourism, sustainability, customer experience, social responsibility. Typical for the fields of Tourism and Services.
SOC	<i>Social & Ethical Competence</i>	Soft skills, teamwork, ethical decision-making, social entrepreneurship, empathy. Typical for Social Management, International Relations.

Source: Own research (2025), SPSS & ChatGPT 5.0 analysis

4 Discussion

A significant contribution of this study is the creation of an integrated model that connects the quality of interaction with conversational AI, students' economic awareness, and

the competency profile of the fields, thereby revealing the mechanism by which digital skills are reflected in the cognitive development of Generation Z. The research highlights Gen Z's orientation towards creativity, innovation, and entrepreneurship, especially in digital sectors, opening up space for discussion on various theoretical and practical levels. At the level of connecting the competencies of Generation Z in the economic context of the *"future dominant workforce"* and *"upskilling"*, it can be discussed whether Generation Z is aware of the opportunities, challenges, and risks arising from the possible disproportions created by the different availability of AI tools in the labour market. The perceived level of AI influence is concentrated on *"fears of job losses"*, but at the same time, *"an increase in new jobs"* is predicted. For Generation Z, quite logically, a strong *"willingness to upskill"* and a willingness to *"adapt to AI integration"* were indicated. This level is discussed, for example, by Tanvi et al. (2025), which highlights the need for AI literacy and targeted training.

In terms of acquired competencies and ability to influence the economic environment, the importance of Generation Z as *"potential dominant consumers"*, bringing new, especially *"digital forms of interaction"*, and the importance of this fact on the *"transformation of the market"* can be discussed. In this context, our research supported the findings resulting from the positive attitudes of Generation Z toward AI in the digital market environment (for example, in digital trading) and the support of AI implementations in corporate management. Literature research shows that greater trust (including suppressed risk perception) in AI recommendations and an increase in preferences for AI-enhanced experiences are reshaping consumer markets and increasing demand for innovative products and services, as confirmed by studies by Guera et al. (2024) and Viñals et al. (2024).

If we want to discuss the educational level in the context of the impact of conversational AI systems on personalising learning, providing real-time, interactive feedback, and supporting adaptive learning, we can point out the *"disproportion in possibilities"*. From this perspective, Hultberg et al. (2024, p. 10) have already tested the performance of AI models and pointed out the general but neglected fact that *"there is a difference in the quality of explanation between chatbots"*, which again differentiates the possibilities of student engagement and the implementation of results into knowledge and subsequent applicability in the labour market. Therefore, this is another factor that determines the level of the economic environment. However, the economic benefits are not evenly distributed. As Matthew et al. (2024 p. 405) states, *"One must be prepared for a world dominated by generative AI, as it will have a significant impact..."*, thus showing the deepening gap between developed economies and regions with lower AI deployment potential.

Last but not least, the need for ongoing research to address gaps in empirical evidence, especially with regard to the long-term economic impacts and effectiveness of AI in different educational contexts, needs to be discussed *"... Economics students and educators are not only interested in finding the right answer..., but also in the accompanying explanation. In fact, if the goal is to learn (or evaluate learning), it is often more important to assess the quality of the explanation provided, along with the final conclusion..."* (Hultberg et al., 2024, p. 9).

If we synthesise the discussed topics, the discussion can be summarised at the level of the following findings: Conversational AI systems have transformative potential in education and offer personalised, effective, and accessible methods, the findings of Abulibdeh et al. (2024), Hultberg et al. (2024) or Kamalov et al. (2023) can be relied on in the discussion. These benefits also extend to the economic sphere by supporting workforce development, innovation, and productivity; in the discussion, it can be compared with Akpan et al. (2024), or Dempere et al. (2023). At the level of studies that highlight significant factors, including *"ethical risks"*, *"potential for redundancies"* and *"increasing existing inequalities"*, the conclusions of the studies of Dempere et al. (2023), Lo (2023) or Crawford et al. (2024) can be discussed. There is a need for *"deeper empirical research into the long-term economic impacts"* and *"the*

effectiveness of AI in a diverse and underfunded environment", which is also discussed in their studies by Abulibdeh et al. (2024), Abed (2024) or Ali et al. (2024). It can be further stated that the discussion showed that the effectiveness, contextual accuracy, and reliability of conversational AI tools significantly increases students' *"economic awareness"*. Subsequently, those competencies act as *"amplifiers"* and determine how students can *"transform interaction with AI into concrete applied economic reasoning"*. It is evident from the discussion that the examined issue is widely discussed, which implies the possibility of global analyses, for the time being the study is regionally focused. However, the authors see a high risk of incompatibility of study programmes in global studies.

Conclusion

Conversational AI systems are a catalyst to unlock the economic potential of Generation Z 19+. They build on naturally acquired competencies, digital knowledge and skills of the upcoming generation, promote innovation, and transform both the workforce and consumer behaviour, which has significant impacts on shaping the economic environment.

Despite the dynamics of existing research in this area, gaps still persist in understanding the long-term economic impacts, the effectiveness of AI in under-resourced environments, and strategies for mitigating ethical risks and inequalities. Therefore, this study examined the relationship between students' interaction with conversational AI systems and their economic awareness, with a focus on the moderating role of competencies in the field.

Based on data from a survey of nearly 300 first-year economics-orientated students, we identified five latent factors representing different dimensions of AI perceptions: *"F1 (relevance and benefit)"*, *"F2 (contextual understanding)"*, *"F3 (trust and reliability)"*, *"F4 (user experience)"* and *"F5 (AI literacy)"*. The F1 factor is the strongest factor, so students judge AI primarily by its usefulness for study. The F1 and F2 factors showed the strongest positive effect on the Economic Awareness Index (*EI*) of the students, suggesting that the usefulness and contextual precision of AI tools are key factors in cognitive and economic learning among Gen Z students. The F5 factor suggests that understanding how AI works increases students' confidence and their ability to use AI effectively.

Empirical results and regression analyses ($R^2 = 0.67$, $F(7,304) = 15.92$, $p < 0.001$) confirmed that the quality of communication using AI significantly predicts students' economic awareness, thus confirming the **H1** hypothesis, while competency profiles strengthen this relationship (confirmation of **H2**). Confirmation of both hypotheses provided strong evidence that the perceived quality of interaction with conversational AI systems significantly increases students' economic awareness and that this effect is amplified by digital and analytical competencies.

It was confirmed that students from technologically and analytically orientated programmes (e.g., Digital Business, Management Informatics) achieved significantly higher expected economic awareness than students from fields focused on services and society.

Furthermore, it was confirmed that conversational AI systems are not only a dynamic catalyst for education, but also for the societal and economic potential of society by enabling personalised, effective and accessible learning, which in turn supports economic growth and innovation.

The authors also agree with the review of the opinion resulting from the literature that coordinated policy and ethical oversight will be the key to fully exploiting the personified potential of AI.

Based on the confirmation of hypothesis H2 and taking into account the conclusions and links to the content of the competences acquired while studying different study programmes, we express doubts about the inclusive strategies. Although the study achieved robust model agreement ($R^2 = 0.67$) after incorporating *COMP*, it is necessary to mention the possible

limitations of the research. The dataset reflects the perception of first-year students who do not have sufficient academically based experience with AI tools, and their AI experience may evolve during their studies. This is a significant potential for further research, where the perception of AI would be explored in the context of changes in competencies and economic awareness over time. Competencies have been quantitatively derived from study programme profiles, which may show differences with competency identification in the form of self-assessment or performance-based tests. The research is easily replicable. We provide a link to the questionnaire, so the structure of the questions can be adopted. Graduate profiles can be obtained from the analysed university. For replicability, the authors recommend, in particular, adhering to the seven-point Likert scale for the questionnaire and the same method of coding missing answers (NA → median, average for multiple markings). We recommend using a combination of factor and frequency analysis, and for factor analysis, using the principal components method, varimax rotation, etc., and verifying suitability using KMO and Bartlett's test. Replication of regression models (OLS) can be repeated due to the explicit presentation of equations, input variables (F1–F5, SAT, COMP), the construction of the competence index and the method of data normalisation.

The results of the study show other potential development directions, such as the possibilities of analysing the impact of ethics and transparency of AI on student trust (expanding the significance of the F3 factor), or for an interdisciplinary comparison of faculties of economics and various AI implementation platforms. The presented research has considerable potential in subsequent research consisting of the creation of conversational avatars based on artificial intelligence. These tools can be a key innovation that will allow you to fully harness the potential of conversational AI in the learning process, personalised, attractive, and scalable education. A significant scientific contribution is the empirical verification of the fact that the level and quality of communication through AI conversational tools, combined with professional competencies, significantly shape students' economic thinking, which represents a new perspective on the role of AI in higher education.

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KVALITATÍVNA ANALÝZA DOPADOV GLOBALIZÁCIE, DIVERZIFIKÁCIE A DEKARBONIZÁCIE NA SLOVENSKÝ PLYNÁRENSKÝ SEKTOR

QUALITATIVE ANALYSIS OF THE IMPACTS OF GLOBALIZATION, DIVERSIFICATION, AND DECARBONIZATION ON THE SLOVAK GAS SECTOR

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Abstrakt: Príspevok analyzuje dopady globalizácie, diverzifikácie a dekarbonizácie na slovenský plynárenský sektor prostredníctvom kvalitatívneho výskumu založeného na tematickom kódovaní pološtruktúrovaných rozhovorov. Výskum poskytuje praktický pohľad na strategické, regulačné a prevádzkové dopady prebiehajúcej transformácie energetiky. Výsledky analýzy identifikujú päť kľúčových tematických oblastí: substitúciu závislosti od ruského plynu, diverzifikáciu dodávok, cenovú dostupnosť energií, geopolitické faktory a dekarbonizáciu. Štúdia konštatuje, že hoci diverzifikácia zvyšuje energetickú bezpečnosť, sprievodný nárast prepravných nákladov oslabuje konkurencieschopnosť domáceho priemyslu a prehĺbuje riziko energetickej chudoby. Príspevok zároveň upozorňuje na geopolitickú citlivosť investícií a potenciálne riziká spojené s novou závislosťou od LNG.

JEL: P18, Q48

Abstract: The paper analyzes the impacts of globalization, diversification, and decarbonization on the Slovak gas sector through qualitative research based on the thematic coding of semi-structured interviews. The study provides practical insights into the strategic, regulatory, and operational implications of the ongoing energy transition. The findings identify five key thematic areas: substitution of dependence on Russian gas, diversification of supplies, energy affordability, geopolitical factors, and decarbonization. The study concludes that while diversification enhances energy security, the associated rise in transport costs undermines the competitiveness of domestic industry and exacerbates the risk of energy poverty. Furthermore, the paper highlights the geopolitical sensitivity of investments and the potential risks of developing a new dependency on alternative sources, particularly LNG.

JEL: P18, Q48

Úvod

Cieľom článku je analyzovať dopady globalizácie, diverzifikácie a dekarbonizácie na slovenský plynárenský sektor prostredníctvom kvalitatívneho výskumu založeného na tematickej analýze expertných rozhovorov. Osobitná pozornosť v tomto článku je venovaná tomu, ako tieto procesy ovplyvňujú energetickú bezpečnosť, cenovú dostupnosť energií a konkurencieschopnosť priemyslu v podmienkach malej otvorenej ekonomiky. Článok je členený na úvod a záver a 4 kapitoly. V prvej je predstavená metodológia výskumu a charakteristika dát. Jadrom práce je analytická časť prezentujúca výsledky kvalitatívnej analýzy, ktorá je doplnená limitmi práce a diskusiou zasadzujúcou zistenia do širšieho teoretického a politického kontextu. Záverečná kapitola sumarizuje hlavné zistenia a formuluje implikácie pre energetickú politiku a ďalší výskum.

Plynárenský sektor v Európe prechádza v poslednom desaťročí zásadnou transformáciou, ktorá je determinovaná súbežným pôsobením globalizačných procesov, geopolitických zmien a klimaticko-energetických politík Európskej únie. Liberalizácia energetických trhov, integrácia infraštruktúr a rastúca prepojenosť dodávateľských reťazcov posilnili význam medzinárodných tokov zemného plynu, no zároveň zvýšili zraniteľnosť národných energetických systémov voči externým šokom. Energetické krízy v rokoch 2009 a 2022 jednoznačne ukázali limity jednostrannej závislosti od dominantného dodávateľa a urýchlili presmerovanie energetických stratégií smerom k diverzifikácii zdrojov a posilňovaniu energetickej bezpečnosti (Leal-Arcas, R., 2022).

Súčasne sa plynárenský sektor nachádza pod tlakom dekarbonizácie v kontexte Európskej zelenej dohody, balíka Fit for 55 a dlhodobého cieľa klimatickej neutrality do roku 2050. Zemný plyn je v tomto procese vnímaný ambivalentne, na jednej strane predstavuje prechodné palivo umožňujúce stabilizáciu energetického systému počas útlmu uhlia a rozvoja obnoviteľných zdrojov, na druhej strane čelí rastúcim regulačným obmedzeniam, investičnej neistote a riziku uviaznutých aktív. Transformácia sektora tak vytvára napätie medzi klimatickými cieľmi, cenovou dostupnosťou energií, konkurencieschopnosťou priemyslu a sociálnou stabilitou.

Slovenská republika predstavuje špecifický prípad malej otvorenej ekonomiky s historicky vysokou závislosťou od tranzitu a dovozu ruského plynu (OECD, 2023), silnou prepravnou infraštruktúrou a vysokou mierou integrácie do vnútorného trhu EÚ. Postupná zmena dodávateľských trás, rozvoj reverzných tokov, prepojenia so susednými krajinami a zapájanie sa do regionálnych a európskych trhových mechanizmov zásadne menia strategické postavenie Slovenska v plynárenskom systéme. Tieto zmeny majú nielen technicko-ekonomické, ale aj regulačné, sociálne a geopolitické dôsledky.

Práve táto historická závislosť od zvolenej cesty (Path Dependency) vytvára na Slovensku unikátne napätie medzi technickou zotrvačnosťou plynárenskej siete, ktorá bola polstoročie projektovaná ako východno-západná energetická diaľnica, a súčasnou politickou požiadavkou na okamžitú geografickú diverzifikáciu a dekarbonizáciu. Premena Slovenska z kľúčového tranzitného uzla na integrovaný, no zraniteľnejší uzol európskej siete, predstavuje paradigmatický posun v chápaní štátnych energetických záujmov. Táto štúdia vyplňa existujúcu medzeru v literatúre tým, že neanalyzuje plynárenstvo len cez štatistické dáta o tokoch, ale cez priamu reflexiu expertov a decision-makerov, ktorí tieto zmeny implementujú v reálnom čase.

Závislosť od zvolenej cesty pochádza z inštitucionálnej ekonómie a hovorí o tom, že minulé rozhodnutia a vybudované štruktúry limitujú súčasné a budúce možnosti. V plynárenstve to nazývame aj "Carbon Lock-in" alebo "Infrastructure Lock-in" (Liebowitz, S. J., & Margolis, S. E., 1995). Path dependency nadobúda v podmienkach Slovenskej republiky špecifický rozmer, ktorý presahuje rámec bežnej ekonomickej zotrvačnosti. Slovenský plynárenský systém totiž nie je len súborom pasívnych prepravných aktív, ale výsledkom dekád cielenej strategickej orientácie na tranzit ruského zemného plynu. V praxi sa táto závislosť od minulej cesty prejavuje predovšetkým v technologickom lock-in efekte. Architektúra slovenskej prepravnej siete bola projektovaná ako lineárna energetická diaľnica s masívnym naddimenzovaním, z ktorého Slovensko profitovalo vďaka preprave plynu do západnej Európy (Eustream, 2025). V tomto dôsledku je transformácia slovenského plynárenstva komplexný proces prekonávania štrukturálnej determinácie, kde každé nové investičné rozhodnutie musí vyvažovať historické dedičstvo infraštruktúry s požiadavkami na flexibilitu, ktorú si vyžaduje moderná energetická trilema.

Paralelne s prekonávaním infraštruktúrnej determinácie čelí slovenský plynárenský sektor nutnosti vyvažovať tri fundamentálne, no často protichodné ciele, ktoré definuje koncept energetickej trilemy (Khan, I., 2025). Tento teoretický model, pozostávajúci z pilierov energetickej bezpečnosti, cenovej dostupnosti (energetickej rovnosti) a environmentálnej

udržateľnosti, predstavuje pre Slovensko ako malú otvorenú ekonomiku komplexnú strategickú výzvu. Zatiaľ čo v predchádzajúcom desaťročí bola prioritou sektora ekonomická optimalizácia tranzitu, súčasná transformácia si vynucuje radikálnu redefiníciu týchto priorit. Pre Slovensko predstavuje trilema komplexnú strategickú dilemu. Snaha o posilnenie bezpečnosti prostredníctvom geografickej diverzifikácie a LNG dodávok naráža na pilier cenovej dostupnosti, keďže alternatívne trasy generujú vyššie marginálne náklady pre priemysel a domácnosti. Zároveň tlak na udržateľnosť vyvoláva konflikt s bezpečnosťou, nakoľko zemný plyn zostáva nevyhnutným stabilizátorom sústavy pri rozvoji obnoviteľných zdrojov.

Pre Slovensko predstavuje trilema komplexnú strategickú dilemu. Snaha o posilnenie bezpečnosti prostredníctvom geografickej diverzifikácie a LNG dodávok naráža na pilier cenovej dostupnosti, keďže alternatívne trasy generujú vyššie marginálne náklady pre priemysel a domácnosti. Zároveň tlak na udržateľnosť vyvoláva konflikt s bezpečnosťou, nakoľko zemný plyn zostáva nevyhnutným stabilizátorom sústavy pri rozvoji obnoviteľných zdrojov.

1 Metodológia výskumu

Kvantitatívny výskum je založený na kódovaní pološtruktúrovaných rozhovorov s odborníkmi z Ministerstva hospodárstva SR, ENTSG, eustream, a.s., SPP, a.s. a ÚRSO. Iloštruktúrované rozhovory boli realizované v období od júla 2024 do januára 2025. Boli vedené s odborníkmi z Ministerstva hospodárstva SR, spoločností eustream, a.s., SPP, a.s., Úradu pre reguláciu sieťových odvetví a so zástupcom európskej siete prevádzkovateľov prepravných systémov plynu (ENTSG). Výber respondentov bol cielený na reprezentatívne zastúpenie strategickej, regulačnej a prevádzkovej úrovne plynárenského sektora, pričom rozhovory boli vedené individuálne a v pološtruktúrovanej forme, aby umožnili kombináciu otvorených odpovedí a porovnateľnosti získaných údajov. Tematické okruhy rozhovorov vychádzali zo štruktúry analytickej časti práce a sústredili sa na tri hlavné oblasti: transformáciu plynárenského sektora v kontexte dekarbonizácie a zelených cieľov EÚ, so zameraním na sociálnu spravodlivosť, cenovú dostupnosť plynu a konkurencieschopnosť priemyslu, hospodárske a trhové dôsledky postupného znižovania závislosti Slovenska od ruského plynu, vrátane vplyvu na obchodnú bilanciu a diverzifikačné scenáre a vplyv politických a geopolitických faktorov na investičné rozhodnutia v oblasti energetickej a plynárenskej infraštruktúry. Rozhovory boli nahrávané, následne transkribované a spracované prostredníctvom kvalitatívneho kódovania podľa zásad tematickej analýzy S. Kvale a S. Brinkmann (Kvale, S., Brinkmann, S., 2015). Výpovede následne prešli segmentáciou podľa tematických okruhov otázok tak, aby bolo možné samostatne analyzovať postoje respondentov k dekarbonizácii, diverzifikácii dodávok a geopolitickým faktorom investičného rozhodovania. Výsledkom bola čistá textová databáza pripravená na systematické kódovanie. Kódovanie prebiehalo v štyroch fázach.

1. Kondenzácia významu a teda jednotlivé výpovede respondentov boli zredukované na kratšie významové jednotky, ktoré zachytávajú podstatu odpovede;
2. Axiálne kódovanie, významové jednotky boli systematicky triedené do tematických kategórií a podtém podľa ich obsahovej a konceptuálnej príbuznosti;
3. Selektívne kódovanie, ktorým sme abstrahovali nadkategórie do jadrových tém
4. Interpretácia, t. j. kategórie boli ďalej analyzované v kontexte výskumných otázok, čím vznikli širšie významové vzorce a témy reflektujúce postoje respondentov k procesom globalizácie, diverzifikácie a transformácie plynárenského sektora.

V rámci rozhovorov boli respondentom položené presne tieto tri otázky:

- „Aké opatrenia by podľa vás mali sprevádzať transformáciu plynárenského sektora na Slovensku, berúc do úvahy dekarbonizáciu a zelené ciele EÚ, aby ostal systém sociálne

spravodlivý a nebola ohrozená konkurencieschopnosť priemyslu a zachovala sa cenová dostupnosť plynu pre domácnosti?“

- „Aké konkrétne hospodárske dopady očakávate pri dlhodobom znižovaní závislosti Slovenska od ruského plynu a to konkrétne na ceny plynu, obchodnú bilanciu a konkurencieschopnosť priemyslu a aký by podľa vás bol ideálny scenár diverzifikácie dodávok?“
- „Do akej miery ovplyvňujú politické a geopolitické faktory rozhodovanie o investíciách do plynárenskej a energetickej infraštruktúry na Slovensku?“

Na spracovanie dát bol využitý manuálny postup tematického kódovania, ktorý umožnil zachovať priamy kontakt výskumníka s textom a detailne porozumieť významovým vzorcom vo výpovediach respondentov.

2 Výsledky kvalitatívnej analýzy

Na základe uvedeného metodologického postupu vznikol ucelený kvalitatívny analytický rámec umožňujúci systematické zachytenie postojov kľúčových aktérov slovenského plynárenského sektora k prebiehajúcim transformačným procesom. Tematické kódovanie výpovedí respondentov viedlo k identifikácii opakujúcich sa významových vzorcov, ktoré reflektujú nielen technicko-ekonomické aspekty transformácie sektora, ale aj jej regulačné, sociálne a geopolitické dimenzie.

Výsledná textová databáza, spracovaná prostredníctvom viacstupňového kódovania, umožnila abstrahovať od individuálnych výpovedí k širším tematickým kategóriám a jadrovým témam. Tieto témy reprezentujú kľúčové výzvy a strategické dilemy, ktorým slovenský plynárenský sektor čelí v kontexte globalizácie trhu so zemným plynom, diverzifikácie dodávok a postupnej dekarbonizácie energetiky. Analýza zároveň poukazuje na vzájomnú previazanosť jednotlivých tematických oblastí, najmä na napätie medzi energetickou bezpečnosťou, cenovou dostupnosťou energií, konkurencieschopnosťou priemyslu a plnením klimatických cieľov Európskej únie.

Nasledujúca časť článku prezentuje výsledky kvalitatívnej analýzy usporiadané podľa identifikovaných tematických kategórií. Osobitná pozornosť je venovaná substitúcii závislosti od ruských dodávok plynu, diverzifikačným stratégiám, sociálno-ekonomickým dopadom cien energií, úlohe geopolitických faktorov pri investičnom rozhodovaní a vnímaniu zemného plynu ako prechodného paliva v procese dekarbonizácie. Tieto zistenia poskytujú empirický základ pre následnú diskusiu o strategickom smerovaní slovenského plynárenského sektora v meniacom sa globálnom a európskom energetickom prostredí.

Tematické kategórie rozhovorov:

1. Substitúcia závislosti od ruských dodávok plynu

- Riziko novej závislosti
- Kapacitné limity LNG terminálov, prepravných trás
- Riziko konkurencieschopnosti podnikateľského sektora v EÚ
- Vyššie ceny plynu pre veľkoobchodných odberateľov
- Vysoké prepravné náklady

2. Diverzifikácia

- Alternatívne zdroje s vyššími cenami
- Nízkouhlíkové zdroje, biomasa a vodík
- Podpora jadrovej energie
- Navýšenie koncových cien plynu
- Reverzný tok z Rakúska
- Plynové prepojenia so všetkými susednými krajinami

- Diverzifikačné obchodné zmluvy SPP,a.s.
- 3. Cenová dostupnosť energií**
 - Nárast energetickej chudoby
 - Ekonomický tlak na priemysel
- 4. Geopolitické faktory**
 - Zohrávajú zásadnú úlohu
 - Spúšťač investičných zmien v plynárenskej infraštruktúre
 - Slovensko ako súčasť jednotného trhu EÚ
- 5. Dekarbonizácia**
 - Konfliktnosť klimatických cieľov s realitou
 - Plyn ako prechodné palivo

Systematické axiálne kódovanie výpovedí respondentov vyústilo do komplexného súboru kategórií, ktoré jasne definujú hlavné výzvy, riziká a strategické priority slovenského plynárenského sektora v kontexte globalizácie a vynútenej transformácie. Najvýraznejšou jadrovou témou je substitúcia závislosti od ruských dodávok plynu, ktorá je vnímaná s vysokou mierou opatrnosti. Respondenti poukázali na to, že hoci je diverzifikácia strategickou nevyhnutnosťou, vedie k priamym ekonomickým rizikám. Konkrétne sa očakáva navýšenie koncových cien plynu a vyššie ceny pre veľkoobchodných odberateľov, ktoré sú spôsobené využívaním alternatívnych zdrojov s vyššími cenami a vysokými prepravnými nákladmi. Táto cenová realita so sebou prináša riziko ohrozenia konkurencieschopnosti podnikateľského sektora v EÚ. Okrem toho bola zdôraznená hrozba vzniku rizika novej závislosti, a to najmä na dodávkach LNG a s tým spojených kapacitných limitoch terminálov a prepravných trás. Súvisiacou kategóriou je diverzifikácia, ktorá potvrdila, že strategický ideál spočíva v komplexnom prepojení, t. j. v plynových prepojeniach so všetkými susednými krajinami, ktoré Slovensko už má, zdôraznený bol najmä reverzný tok z Rakúska, ktorý bol realizovaný po plynovej kríze v roku 2009 a v strategických diverzifikačných obchodných zmluvách (SPP). V kontexte dlhodobej transformácie respondenti podporujú využívanie nízkouhlíkových zdrojov (biomasa a vodík) a predovšetkým podporu jadrovej energie ako stabilného a nízkoemisného základu pre energetickú bezpečnosť. Tieto ekonomické trendy majú priamy sociálny dopad, zhrnutý v kategórii cenová dostupnosť energií, kde respondenti varujú pred nárastom energetickej chudoby a zosilňujúcim sa ekonomickým tlakom na priemysel. V kategórii geopolitické faktory bola jednohlasne potvrdená ich zásadná úloha pri investičnom rozhodovaní. Geopolitické krízy (napr. rok 2009, 2022) sú vnímané ako hlavný spúšťač investičných zmien v plynárenskej infraštruktúre. Z tohto pohľadu je dôležité, že Slovensko je vnímané a musí konať ako integrálna súčasť jednotného trhu EÚ. Pokiaľ ide o dekarbonizáciu, respondenti poukázali na konfliktnosť klimatických cieľov s ekonomickou realitou. Zároveň však uznávajú strategickú pozíciu plynu, ktorý je označovaný ako prechodné palivo, nevyhnutné na zabezpečenie stability počas postupnej dekarbonizácie.

3 Prehľad existujúcej literatúry a limity výskumu

Problematika transformácie plynárenského sektora v Európe je intenzívne reflektovaná v odbornej literatúre, najmä v kontexte energetickej bezpečnosti, diverzifikácie dodávok a dekarbonizácie. Výskum sa sústreďuje predovšetkým na geopolitické aspekty závislosti Európskej únie od externých dodávateľov plynu a na možnosti diverzifikácie vrátane rozvoja LNG infraštruktúry (Yergin, 2020).

Ďalšia literatúra analyzuje ekonomické dôsledky transformácie prostredníctvom konceptu energetickej trilemy, poukazujúc na napätie medzi bezpečnosťou, cenovou dostupnosťou a udržateľnosťou (Cherp & Jewell, 2014; Khan, 2025). Štúdie zároveň upozorňujú, že diverzifikácia síce zvyšuje bezpečnosť, no často vedie k vyšším nákladom a tlaku na konkurencieschopnosť, najmä v malých otvorených ekonomikách (Bachmann et al.,

2022). V oblasti dekarbonizácie sa pozornosť venuje úlohe plynu ako prechodného paliva a riziku „lock-in“ efektov, ako aj vzniku nových závislostí, napríklad od LNG alebo nízkouhlíkových technológií (Unruh, 2000; Seto et al., 2016). Napriek tomu väčšina existujúcich štúdií vychádza z kvantitatívnych prístupov, pričom kvalitatívna reflexia rozhodovacích procesov a percepcií aktérov zostáva nedostatočná, najmä v kontexte menších ekonomík, ako je Slovensko. Táto štúdia túto medzeru vyplňa prostredníctvom analýzy expertných rozhovorov, čím prináša hlbší pohľad na strategické, regulačné a geopolitické dimenzie transformácie plynárenského sektora.

Zvolený kvalitatívny prístup zároveň prináša aj určité metodologické obmedzenia, ktoré je potrebné zohľadniť pri interpretácii výsledkov. V prvom rade ide o kvalitatívny charakter výskumu, ktorý je založený na relatívne obmedzenom počte pološtruktúrovaných rozhovorov. Hoci bol výber respondentov cieľový a zabezpečil reprezentatívne zastúpenie strategickej, regulačnej a prevádzkovej úrovne plynárenského sektora, výsledky nemožno považovať za štatisticky generalizovateľné na celý sektor, ale skôr za analyticky prenosné do porovnateľných kontextov malých otvorených ekonomík v rámci EÚ.

Ďalším limitom je potenciálna subjektivita interpretácie výpovedí respondentov, ktorá je neoddeliteľnou súčasťou kvalitatívneho výskumu. Napriek použitiu systematického tematického kódovania a viacstupňovej analytickej procedúry môže byť interpretácia významových vzorcov čiastočne ovplyvnená výskumníckou perspektívou. Tento limit bol zmierňovaný dôslednou prácou s transkripciami, opakovaným porovnávaním kódov a zachovaním kontextu jednotlivých výpovedí.

Obmedzenie predstavuje aj časový rámec zberu dát (2024 – 2025), ktorý zachytáva postoje respondentov v období zvýšenej geopolitickej a trhovej neistoty. Výsledky preto odrážajú aktuálne strategické a regulačné úvahy, ktoré sa môžu v dlhšom časovom horizonte meniť v závislosti od vývoja cien energií, regulačného rámca EÚ a geopolitickej situácie.

Napokon, výskum sa zameriava predovšetkým na perspektívu inštitucionálnych a expertných aktérov a nezahŕňa pohľad koncových odberateľov ani širšej verejnosti. Sociálne dopady transformácie plynárenského sektora sú preto analyzované nepriamo, prostredníctvom hodnotení odborníkov, čo vytvára priestor pre ďalší výskum kombinujúci kvalitatívne a kvantitatívne prístupy.

Uvedené limity však neznižujú analytickú hodnotu výskumu, ktorý poskytuje hlboký vhľad do rozhodovacích procesov kľúčových aktérov a identifikuje zásadné výzvy a dilemy slovenského plynárenského sektora v kontexte globalizácie, diverzifikácie a dekarbonizácie.

4 Diskusia

Výsledky kvalitatívnej analýzy poskytujú cenný vhľad do transformácie slovenského plynárenského sektora v kontexte globalizačných, geopolitických a klimaticko-energetických tlakov. Identifikované tematické kategórie – substitúcia závislosti od ruských dodávok, diverzifikácia zdrojov, cenová dostupnosť energií, geopolitické faktory a dekarbonizácia – reflektujú komplexnosť problémov, ktorým sektor čelí, a zároveň ukazujú vzájomnú previazanosť medzi ekonomickými, sociálnymi a politickými dimenziami transformácie.

Substitúcia závislosti od ruských dodávok plynu je vnímaná ako strategická nevyhnutnosť, no zároveň prináša významné ekonomické riziká. Respondenti jednoznačne upozorňujú na možný nárast cien pre veľkoobchodných odberateľov a koncových spotrebiteľov, vysoké prepravné náklady a riziko ohrozenia konkurencieschopnosti slovenského priemyslu v európskom kontexte. Tento náhľad potvrdzuje teoretické predpoklady, že diverzifikácia energetických zdrojov v malých otvorených ekonomikách je spojená s kompromismi medzi energetickou bezpečnosťou, cenovou dostupnosťou a ekonomickou efektívnosťou.

Kategória diverzifikácie zároveň ukazuje, že strategickým cieľom je prepojenie Slovenska so všetkými susednými krajinami a implementácia reverzných tokov, pričom diverzifikačné obchodné zmluvy zohrávajú kľúčovú úlohu. Tento prístup je v súlade s európskymi trendmi smerujúcimi k integrácii vnútorného trhu s plynom a znižovaniu jednostrannej závislosti od dominantného dodávateľa. Zároveň sa prejavuje tlak na využívanie nízkouhlíkových zdrojov a jadrovej energie, čo poukazuje na synergické prepojenie energetickej bezpečnosti a klimatických cieľov EÚ.

Sociálno-ekonomické dôsledky transformácie, najmä v oblasti cenovej dostupnosti energií, sú zjavné. Respondenti upozorňujú na potenciálny nárast energetickej chudoby a zosilnený tlak na priemysel, čo naznačuje, že transformačné stratégie musia byť koncipované so zreteľom na sociálnu spravodlivosť. Tento aspekt potvrdzuje, že technologické a regulačné zmeny v energetike nemožno oddeliť od širšieho sociálneho a ekonomického kontextu.

Zároveň je potrebné zdôrazniť, že problém cenovej dostupnosti nemožno redukovať výlučne na úroveň trhových cien energií, ale musí byť analyzovaný v širšom rámci distribučných dopadov transformácie. Nárast cien plynu má asymetrické dôsledky na jednotlivé skupiny odberateľov, pričom najzraniteľnejšie domácnosti a energeticky náročné odvetvia čelia disproportčne vyššiemu riziku. Z makroekonomického hľadiska môže dlhodobé zvýšenie cien energií viesť k erózii priemyselnej základne, najmä v odvetviach s vysokou energetickou náročnosťou, čo má následne sekundárne dopady na zamestnanosť a obchodnú bilanciu. Cenová dostupnosť tak prestáva byť len sociálnym problémom a stáva sa kľúčovým faktorom hospodárskej stability a konkurencieschopnosti krajiny.

Geopolitické faktory sú identifikované ako rozhodujúce pri investičnom rozhodovaní v plynárenskej infraštruktúre. Historické krízy (2009, 2022) ukazujú, že geopolitické šoky fungujú ako spúšťače adaptívnych zmien, vrátane diverzifikácie dodávok a výstavby nových prepojení. Slovensko je pritom nútené konať ako súčasť jednotného trhu EÚ, čo odráža vzájomnú závislosť členských štátov pri zabezpečení energetickej bezpečnosti a stability.

V kontexte dekarbonizácie respondenti poukazujú na napätie medzi klimatickými cieľmi a ekonomickou realitou. Plyn je vnímaný ambivalentne, ako prechodné palivo nevyhnutné na stabilizáciu systému počas odklonu od uhlia a rozvoja obnoviteľných zdrojov, ale zároveň ako zdroj potenciálnych rizík spojených s regulačnými obmedzeniami a investičnou neistotou. Tento pohľad zdôrazňuje potrebu vyváženého prístupu, ktorý umožní dosiahnutie klimatických cieľov bez ohrozenia energetickej bezpečnosti a konkurencieschopnosti.

Limity výskumu, najmä kvalitatívny charakter a obmedzený počet respondentov, naznačujú, že výsledky nemožno generalizovať, avšak poskytujú analyticky cenné poznatky pre pochopenie rozhodovacích procesov v sektore. V kontexte meniacich sa geopolitických a trhových podmienok je možné, že strategické a regulačné priority sa budú ďalej vyvíjať, čo vytvára priestor pre budúci výskum kombinujúci kvalitatívne a kvantitatívne metódy, vrátane zapojenia koncových odberateľov.

Celkovo výskum potvrdzuje, že slovenský plynársky sektor sa nachádza na križovatke medzi diverzifikáciou dodávok, dekarbonizáciou a ekonomickými obmedzeniami. Udržateľné a sociálne spravodlivé transformácie vyžadujú integrovaný prístup, ktorý zohľadní technicko-ekonomické, regulačné, geopolitické a sociálne dimenzie. Praktické odporúčania z nášho výskumu a z rozhovorov sú nasledovné:

- Cílené dotácie pre priemysel na kompenzáciu vyšších cien plynu
- Urýchlenie legislatívy pre biometán a vodík
- Investície do jadrovej energetiky
- Posilnenie regionálnej spolupráce v rámci solidarity EÚ.

Záver

Slovenský plynárenský sektor sa v súčasnosti nachádza v prelomovom období, ktoré je definované nutnosťou adaptácie na radikálne sa meniace geopolitické a environmentálne prostredie. Predložená štúdia prostredníctvom kvalitatívnej analýzy postojov kľúčových aktérov potvrdila, že transformácia sektora nie je len technickou výzvou, ale komplexným procesom hľadania novej rovnováhy v rámci energetickej trilemy. Výsledky ukazujú, že hoci energetická bezpečnosť nadobudla po roku 2022 absolútnu prioritu, jej zabezpečenie prostredníctvom geografickej diverzifikácie a integrácie do globálnych reťazcov LNG prináša nové riziká v oblasti cenovej dostupnosti a konkurencieschopnosti národného priemyslu.

Výskum jasne identifikoval, že strategické rozhodovanie je hlboko determinované fenoménom Path Dependency. Historické dedičstvo robustnej tranzitnej infraštruktúry vytvára technologický a inštitucionálny „lock-in“ efekt, ktorý na jednej strane poskytuje Slovensku unikátnu prepravnú kapacitu, no na druhej strane limituje rýchlosť a flexibilitu prechodu na nízkouhlíkové alternatívy. Respondenti zhodne vnímajú zemný plyn ako nenahraditeľný stabilizačný prvok (tzv. prechodné palivo), ktorého predčasná eliminácia by bez adekvátnej technologickej náhrady mohla viesť k energetickej chudobe a deindustrializácii.

Analýza zároveň poukazuje na to, že prekonanie infraštruktúrnej determinácie si vyžaduje inovatívny prístup k existujúcim aktívam. Projekty typu „H2-ready“ plynovody a rozvoj biometánu predstavujú logický pokus o únik z pasce fosílnej závislosti pri zachovaní ekonomickej hodnoty vybudovanej siete. Úspech tejto transformácie je však podmienený stabilitou regulačného rámca a koordinovanou európskou solidaritou, ktorá zohľadní špecifické postavenie vnútrozemských, energeticky náročných ekonomík.

Z hľadiska budúcich politík výskum odporúča zamerať sa na synergiu medzi posilňovaním regionálnych prepojení a cieľenou podporou nízkouhlíkových technológií, vrátane jadrovej energetiky. Záverom možno konštatovať, že slovenská cesta k energetickej neutralite bude pravdepodobne charakteristická evolučným využitím plynárenskej infraštruktúry. Predložené zistenia poskytujú empirický základ pre formuláciu sociálne udržateľných politík a otvárajú priestor pre ďalší výskum, ktorý by mal kvantifikovať ekonomické dopady navrhovaných diverzifikačných scenárov na koncové ceny pre spotrebiteľov.

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TRANSFORMATIONAL LEADERSHIP AT THE UNITED NATIONS: KOFI ANNAN AND INSTITUTIONAL REFORM IN AN ERA OF GLOBAL CRISES

TRANSFORMAČNÉ LÍDERSTVO V ORGANIZÁCII OSN: KOFI ANNAN A INŠTITUCIONÁLNA REFORMA V DOBE GLOBÁLNYCH KRÍZ

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Abstract: This article examines the leadership of Kofi Annan as the Secretary-General of the United Nations during the period 1997–2006, focusing on his contribution to the transformation of the organization in an era marked by major global crises. The paper analyses Annan's reform initiatives in peacekeeping, human rights, development, and global governance, including the Millennium Development Goals, the UN Global Compact, and the Responsibility to Protect doctrine. Special attention is devoted to his leadership during major international crises, particularly the Iraq War and global HIV/AIDS challenges. This article interprets Kofi Annan's leadership through the theoretical lens of transformational leadership, arguing that his tenure as Secretary-General contributed to significant institutional and normative transformation within the United Nations.

Keywords: Kofi Annan; United Nations; reform leadership; global crises; Iraq War; global governance; multilateralism

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Abstrakt: Článok skúma líderstvo Kofiho Annana vo funkcii generálneho tajomníka Organizácie Spojených národov v období rokov 1997 – 2006 so zameraním na jeho prínos k transformácii organizácie v ére poznačenej významnými globálnymi krízami. Príspevok analyzuje Annanove reformné iniciatívy v oblasti mierových operácií, ľudských práv, rozvoja a globálneho riadenia vrátane Rozvojových cieľov milénia (Millennium Development Goals), iniciatívy UN Global Compact a doktríny Zodpovednosť chrániť (Responsibility to Protect). Osobitná pozornosť je venovaná jeho vedeniu počas významných medzinárodných kríz, najmä vojny v Iraku a globálnej pandémie HIV/AIDS. Článok interpretuje líderstvo Kofiho Annana prostredníctvom teoretického rámca transformačného líderstva a argumentuje, že jeho pôsobenie vo funkcii generálneho tajomníka významne prispelo k inštitucionálnej a normatívnej transformácii Organizácie Spojených národov.

Kľúčové slová: Kofi Annan, Organizácia Spojených národov, reformné líderstvo, globálne krízy, vojna v Iraku, globálne riadenie; multilateralizmus

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Introduction

Kofi Annan, born in Kumasi, Ghana, in 1938 was a Ghanaian diplomat. He worked for the United Nations from January 1997 to December 2006 as the seventh Secretary-General. He was also the founder of the Kofi Annan Foundation and held the position of its Chairman. The Kofi Annan Foundation was considered as a catalyst for peace and governance, security and development of human rights. During his time of service, he was, jointly with the UN, awarded

with the Nobel Peace Prize for having revitalized the UN and giving high priority to human rights. He was named to be pre-eminent to bring new life to the UN as an organization (Kofi Annan Foundation, n.d.).

Among his main priorities as the UN Secretary-General was a comprehensive program focusing on reforms to revitalize the UN and improve the effectiveness of the international system, aiming to highlight human rights, the rule of law and development goals (Biersteker, 2020). The idea was to bring the UN closer to global public by forging ties with the civil society, private sector and other partners. Peacekeeping was an ultimate goal (Kofi Annan Foundation, n.d.).

The time of his service was marked with significant, unexpected global challenges, which include such dramatic events as the 9/11 terrorist attacks and following the Iraq War, crises in human rights and a large number of issues in developing countries. Also, there were natural catastrophes such as the Bam earthquake in Iran (Williams, 2018). The time was characterized by escalation of many internal conflicts worldwide, which caused the need of the UN to adapt how to handle such conflicts. Kofi Annan was guiding the UN in the direction of prevention and resolution of armed conflicts before escalation, which defines his legacy as a global peacemaker (Reynolds, 2020).

He was a leading person to create the Global Fund to fight AIDS, tuberculosis and malaria. On the other hand, during his term of service the UN adopted their first strategy for counter-terrorism, and assured the acceptance of the Responsibility to Protect people from genocide, war crimes and ethnic cleansing by the member states (Kofi Annan Foundation, n.d.). At his time of service, for instance, fell the genocides which took place in Srebrenica, Bosnia or in Rwanda (Reynolds, 2020). Also based on his support, the member states of the UN organized two intergovernmental bodies: the Peacebuilding Commission and the Human Rights Council (Kofi Annan Foundation, n.d.).

Furthermore, he was the initiator of the Global Compact initiative, which was launched in 1999. The initiative actually became the largest one to promote corporate social responsibility (Reynolds, 2020). It might be also seen as his most far-reaching and likely the world's largest initiative on corporate citizenship. Most issues of that time, particularly in the context of global health and sustainable development, remain central to the UN's mission in the present day. His successor was Ban Ki-moon, a South Korean diplomat.

This article interprets Kofi Annan's leadership through the theoretical lens of transformational leadership, arguing that his tenure as Secretary-General contributed to significant institutional and normative transformation within the United Nations. His tenure reflected a shift from traditional interstate diplomacy toward broader engagement with human security, institutional reform, and cooperation with non-state actors. Through his responses to major global crises and his reform agenda, Annan contributed significantly to redefining the role of the UN in global governance.

The main objective of the article is therefore to assess how Kofi Annan used the limited but symbolically significant authority of the Secretary-General to promote institutional reform, normative innovation, and broader adaptation of the United Nations to post-Cold War global challenges.

This article employs a qualitative case study approach focused on Kofi Annan's tenure as the seventh Secretary-General of the United Nations between 1997 and 2006. The research design combines historical analysis with qualitative document analysis in order to examine how Annan's leadership contributed to institutional reform and normative transformation within the UN system.

The article is based on the analysis of primary and secondary sources, including official United Nations documents, speeches and statements of Kofi Annan, reports related to UN reform, and relevant academic literature on international organizations, global governance, and

transformational leadership. Rather than testing causal hypotheses, the study aims to interpret Annan's leadership practices in relation to selected reform initiatives and major global crises.

The case study approach is appropriate because Annan's tenure represents a distinctive period in the development of the United Nations, marked by institutional reform, the expansion of the human security agenda, the emergence of the Responsibility to Protect doctrine, and increased engagement with non-state actors. These developments make it possible to assess Annan's leadership as an example of transformational leadership within the specific constraints of a multilateral organization.

The concept of transformational leadership, originally developed by Burns (1978) and further elaborated by Bass (1985), refers to a leadership style that inspires followers to transcend individual interests in pursuit of broader organizational or societal goals. Unlike transactional leadership, which is primarily based on exchanges, formal authority, and the maintenance of existing structures, transformational leadership seeks to promote institutional change, innovation, and the development of shared values (Bass & Riggio, 2006).

The application of transformational leadership theory to international organizations requires certain adaptations. Unlike political leaders of sovereign states, the Secretary-General of the United Nations exercises only limited formal authority. As Barnett and Finnemore (2004) argue, international organizations derive much of their influence from their normative authority, bureaucratic expertise, and capacity to shape international agendas rather than from coercive power. Consequently, leadership within the United Nations depends largely on persuasion, mediation, coalition-building, and the ability to promote new international norms.

This perspective is closely connected with the concept of normative entrepreneurship, whereby international leaders contribute to the creation, diffusion, and institutionalization of new global norms (Finnemore & Sikkink, 1998). The Secretary-General can therefore act as a catalyst for institutional learning and policy innovation despite significant political constraints imposed by Member States, particularly the permanent members of the Security Council (Weiss, 2016).

This article interprets Kofi Annan's tenure through this theoretical lens. Annan's leadership was transformational not because he possessed extensive executive powers, but because he successfully employed the moral authority of the Secretary-General's office to redefine the United Nations' priorities in the fields of human security, sustainable development, human rights, corporate responsibility, and the Responsibility to Protect doctrine. His leadership illustrates how normative influence, institutional entrepreneurship, and consensus-building can generate significant organizational change even in highly constrained multilateral environments.

1 Institutional Background and Rise within the United Nations

Kofi Annan joined the UN system rather early in his career, in 1962. He had the position of an administrative and budget officer at the World Health Organization in Geneva (Kofi Annan Foundation, n.d.). During his career he often noted that disarmament does not ensure peace, but root causes of conflicts must be addressed by preventive measures, followed by disarmament and peace to be sustainable. Eliminating the arms trafficking and weapons of mass destruction would greatly support these peace and development goals (Reynolds, 2020).

After he was with the Economic Commission for Africa in Addis Ababa, he joined the UN Emergency Force (UNEF II) in Ismailia, followed by the United Nations High Commissioner for Refugees (UNHCR) in Geneva in 1980 (UNA-UK, 2019). He also held different positions, mainly in New York, with a focus on human resources, budget & finance, or staff security. Right before becoming Secretary-General, he held the position of the Under-Secretary-General for Peacekeeping (Kofi Annan Foundation, n.d.). Boutros Boutros-Ghali, his predecessor as the Secretary-General, established the Department of Peacekeeping Operations

in 1992, appointing Kofi Annan to this position (Reynolds, 2020). During his career at the UN, he also held the position of the Special Representative of the Secretary-General to the former Yugoslavia and Special Envoy to NATO from 1995 to 1996 (Kofi Annan Foundation, n.d.). Kofi Annan was the first sub-Saharan African in the post of the Secretary-General at the UN.

During his term as the Secretary-General of the UN, Kofi Annan was strongly involved in diplomatic processes. For instance, in the process which led to the independence of Timor-Leste from Indonesia in 1999 (UNA-UK, 2019). He was also involved in Israel's withdrawal from Lebanon in 2000 and in the cessation of hostilities between Israel and the Hezbollah in 2006. In the same year he was involved in the settlement of dispute over the Bakassi Peninsula between Cameroon and Nigeria (Kofi Annan Foundation, n.d.). In 2001, Mr. Annan was awarded the Nobel Peace Prize for the work towards a better organized and more peaceful world (The Nobel Prize, 2021).

After leaving office, Annan remained active in mediation, democracy promotion and humanitarian initiatives through the Kofi Annan Foundation until his death in 2018.

2 Transformational Leadership in Times of Global Crisis

Kofi Annan's tenure as Secretary-General coincided with one of the most turbulent periods in the post-Cold War international order. The emergence of new security threats, humanitarian catastrophes, transnational terrorism, and global health emergencies fundamentally challenged the capacity of the United Nations to fulfil its mandate. These crises not only tested the effectiveness of the Organization but also shaped Annan's understanding of leadership in an increasingly complex international environment.

Rather than responding solely through traditional diplomatic mechanisms, Annan consistently sought to strengthen preventive diplomacy, multilateral cooperation, and the development of new international norms. His responses to major global crises therefore provide important insights into the practical application of transformational leadership within an international organization operating under significant political constraints (Burns, 1978; Bass & Riggio, 2006; Weiss, 2016).

2.1 The Rwanda Genocide: The Origins of Preventive Leadership

The 1994 genocide in Rwanda represented one of the most profound institutional failures in the history of the United Nations and became a defining experience in Kofi Annan's understanding of international responsibility. Although Annan had not yet assumed the office of Secretary-General, he served as Under-Secretary-General for Peacekeeping Operations and was directly confronted with the limitations of UN peacekeeping, the reluctance of Member States to authorize timely intervention, and the devastating consequences of institutional inaction (Weiss, 2016; Biersteker, 2020).

The lessons of Rwanda profoundly influenced Annan's subsequent leadership philosophy. Throughout his tenure as Secretary-General, he consistently emphasized conflict prevention, the protection of civilians, and the responsibility of the international community to act when governments fail to protect their own populations. These priorities later became central elements of both his reform agenda and the development of the Responsibility to Protect doctrine (Bellamy, 2009; United Nations, 2005).

Although this was before Kofi Annan was the Secretary-General of the UN, during the genocide of 1994 he held the position of the UN Under-Secretary-General for Peacekeeping. The UN received a lot of criticism for the failure to stop the genocide. This might lie in the risk-averse approach due to the negative experience in the former missions in Somalia and Haiti. While during the start of the genocide the world-leaders argued about the term 'genocide', players like Belgium, the USA, or France focused on the evacuation of their own citizens and expatriates. The UN Security Council adopted Resolution 918 authorizing the deployment of

about 5,500 troops to the UN Assistance Mission; however, despite the immense lobbying effort, he did not receive serious offers for troop contribution (Reynolds, 2020). This experience became a key point in his memoir (Annan, 2012; Weiss, 2016).

From the perspective of transformational leadership, Rwanda became a turning point in Annan's conception of the role of the United Nations. Rather than accepting the limitations exposed by the failure of the international community, Annan sought to transform this experience into a catalyst for institutional learning and normative change. His subsequent emphasis on preventive diplomacy, civilian protection, and collective international responsibility reflected an effort to ensure that similar failures would not be repeated (Burns, 1978; Bellamy, 2009).

The Rwanda genocide therefore shaped not only Annan's personal leadership philosophy but also the evolution of the United Nations' normative agenda. Many of the reforms and initiatives introduced during his tenure—including stronger peacebuilding mechanisms, the Human Rights Council, and ultimately the Responsibility to Protect—can be understood as attempts to address the institutional shortcomings exposed by Rwanda. In this respect, transformational leadership emerged not from institutional success, but from the willingness to learn from institutional failure and to translate those lessons into long-term organizational reform (Biersteker, 2020; Weiss, 2016).

2.2 Iraq: The Limits of Transformational Leadership

The 2003 Iraq War constituted one of the greatest political challenges of Kofi Annan's tenure and exposed the structural limitations of leadership within the United Nations. Unlike the Rwanda genocide, where the Organization was criticized for failing to act, the Iraq crisis demonstrated the difficulty of preserving international legality and multilateral cooperation when major powers pursued unilateral military action without explicit authorization from the Security Council (Weiss, 2016; Chesterman, 2007).

Throughout the crisis, Annan consistently advocated for diplomatic solutions, respect for international law, and the central role of the Security Council in decisions concerning the use of force. His position reflected a broader commitment to multilateralism and the principles of the UN Charter, even when these principles conflicted with the geopolitical interests of influential Member States (Annan, 2012).

The Iraq War, in particular the US-led invasion of the country was likely the most critical and disputable situation during Kofi Annan's term, considering that UN members attacked another UN member. The invasion had the aim to topple the regime of Saddam Hussein (Aljazeera, 2004). On the question about the legitimacy of the USA's invasion in Iraq, Kofi Annan answered, after repeated questions by a BBC interviewer during the radio interview in September 2004, for the first time, that from the viewpoint of the UN Charter, the actions were illegal (United Nations, 2004a). He noted that it was the responsibility of the Security Council to determine or approve the consequences for noncompliance with earlier US resolutions from the Iraq's side (Tyler, 2004). Fred Eckhard, the spokesman later noted that the Charter did not allow pre-emptive attacks. He added that the war and its aftermath brought painful lessons and showed the importance of solving issues through the UN. He also noted that his hope was not to see any other operations as the Iraq-type for a long time. Eckhard noted during the press briefing in New York that this viewpoint was not new but well known (United Nations, 2004a). The timing of this remark was irritating for Iraqi officials, as the interim government was preparing for the first elections (Tyler, 2004). Kofi Annan said that the level of violence and unrest would make elections highly unlikely (Aljazeera, 2004). However, the elections took place on January 30, 2005 (The White House, n.d.), when almost eight million people voted in the elections for a Transitional National Assembly, as the first free democratic elections. The Shia United Iraqi Alliance won, Kurdish parties were placed second. The same year at the

referendum a new constitution was approved and later, in December, parliamentary elections were held (AlJazeera, 2010).

The discussion on the legality of the war was rather intense among different governments and international lawyers. The US, Britain, and Australia expressed their view that due to the violation of the cease-fire agreement, ending in 1991 the Personal Gulf War, is the legitimate basis for the war. The office of the British Prime Minister Tony Blair referred to the British Attorney General, Lord Goldsmith, who understands that the actions from the British side were lawful (Lynch, 2004). The Australian Prime Minister John Howard was in a battle for re-election during that time, calling the UN a paralyzed institution, also referring to legal advice that the invasion was lawful (Tyler, 2004).

On the opposite, other top legal advisers have the view that only Security Council has the power to authorize any military action against a UN member state. Countries, such as France, China, or other members of the Council which opposed the war, stayed rather in a defensive position, mentioning that it was important to focus on peace and stability in the country (Lynch, 2004). While France did not issue a formal comment, the spokeswoman for President Jacques Chirac said that Kofi Annan's view conformed with the French one, so that the action was illegitimate (Tyler, 2004). China's UN ambassador, Wang Guangya noted that they all had the same view on the Iraq War (Lynch, 2004). An interpretation of the remark from Mr. Annan might be that the idea was to anticipate debates on future actions, as about Iran or North Korea, considering the threat of nuclear weapons, which were important matters for the administration of US President George Bush (Tyler, 2004).

During the International Conference on Iraq in Sharm el Sheikh, Egypt, in November 2004, Kofi Annan shared his view on the peace-loving nation and united Iraq, not only in the country but the whole region, as the countries in the region should share a stake in the stable and prosperous Iraq, meaning that countries should help normalize the regional and international relations, basing on UN principles, as mentioned in the UN Charter. They are the non-interference, sovereignty, political independence, territorial integrity and national unity, along with the framework in the Security Council regulation 1546 (United Nations, 2004b). The Iraq War showed the need for the international community to discuss preventive actions in the context of the UN charter (United Nations, 2004b).

This should be regarded also with the election to be held in January 2005 in Iraq, which should be organized by the Independent Electoral Commission of Iraq, advised by the UN (United Nations, 2004b). It is important to note that weapons of mass destruction, the key element to start the invasion in Iraq, were never found.

The critics on the US-led invasion in Iraq, without being supported by the UN Security Council, were also noted by Kofi Annan during his last press conference as the Secretary-General. He noted that the international community would wait in order to obtain the approval of the Security Council, as each country had the right to defend, but to act and attack a member country had to be legitimated by the Security Council only.

From the perspective of transformational leadership, the Iraq crisis illustrates the limits of leadership based on persuasion and normative authority. Unlike domestic political leaders, the Secretary-General cannot compel Member States to comply with international law or Security Council decisions. Annan's influence therefore depended primarily on his ability to defend the legitimacy of multilateral institutions and to shape international debate through moral leadership rather than executive power (Barnett & Finnemore, 2004; Burns, 1978).

Although Annan was unable to prevent the military intervention, his consistent defence of the UN Charter reinforced the normative authority of the Organization and highlighted the continuing importance of multilateral decision-making in matters of international peace and security. The Iraq crisis thus demonstrates that transformational leadership within international organizations should not be evaluated solely by immediate political outcomes but also by its

contribution to preserving institutional legitimacy and international norms under conditions of intense geopolitical pressure (Weiss, 2016; Bass & Riggio, 2006).

2.3 Transforming Global Health into a Global Governance Priority

As of 2023, approximately 39.9 million people were living with HIV worldwide, with around 1.3 million new infections recorded annually (HIV.gov., 2025). Sub-Saharan Africa remains the most affected region, accounting for nearly two-thirds of global HIV cases (KFF, 2024). During Annan's tenure, the establishment of UNAIDS and the creation of the Global Fund to Fight AIDS, Tuberculosis and Malaria reflected a broader transformation of the UN agenda, where global health increasingly became part of international security and development discussions. These crises reflected the changing nature of international security in the post-Cold War period. Traditional military conflicts were increasingly accompanied by terrorism, humanitarian emergencies, health crises, and state fragility. Annan's leadership sought to adapt the UN to these multidimensional challenges.

3 Transformational Leadership through Institutional Reform and Normative Innovation

Alongside crisis management, institutional reform became one of the defining features of Kofi Annan's leadership. Recognizing that the United Nations required structural modernization to remain effective and legitimate in a rapidly changing international environment, Annan advanced a reform agenda that combined administrative modernization with broader normative innovation. Rather than relying on formal authority, he exercised leadership through persuasion, consensus-building, institutional entrepreneurship, and the promotion of shared international norms, thereby reshaping the role of the United Nations in global governance (Biersteker, 2020; Weiss, 2016; Barnett & Finnemore, 2004; Bass & Riggio, 2006).

The following sections examine the principal reform initiatives through which Annan translated transformational leadership into institutional practice. Together, these initiatives demonstrate how leadership within international organizations can generate long-term institutional and normative change despite significant political constraints imposed by Member States (Burns, 1978; Finnemore & Sikkink, 1998).

3.1 Reforming Global Governance: The Security Council

Reforming the United Nations Security Council became one of the central priorities of Kofi Annan's broader vision for strengthening the legitimacy and effectiveness of the United Nations. Annan argued that the composition of the Security Council no longer reflected the geopolitical realities of the twenty-first century and that its limited representativeness undermined the credibility of the Organization's collective security system (Biersteker, 2020; Kofi Annan Foundation, 2015). The proposed reform therefore sought not only to improve institutional efficiency but also to enhance the democratic legitimacy of global governance.

Kofi Annan started several reforms to adapt the UN. While such reform as the Security Council reform had limited progress due to the influence of the largest UN member states, in other areas the progress was substantial (Reynolds, 2020). He proposed the reform consisting of two tracks (U.S. Department of State Archive, n.d.):

- Track One consisted of ten administrative, budgetary, managerial, and personnel reforms which he could take care of by himself. For instance, there were 900 staff positions abolished in the UN, a Code of Conduct adopted and administrative cost reduced;
- Track Two focused on streamlining departments and administrative activities in the areas of development, humanitarian relief, human rights, and peacekeeping.

His recommendations included the number increase of permanent member states (with veto rights) by five, and also adding of additional seats for non-permanent members (Reynolds, 2020). Changes of the Security Council since its implementation have been rare, the composition of the permanent members did not change since the foundation. Some changes were in 1965 when the number of Council members increased from 11 to 15, or in 1972 (Biersteker, 2020). He even noted during an interview in 2015 that in case the UN Security Council did not nominate new permanent members and use the possibility to modernize the pre-eminent global security body by adding powers as India and Germany, then its primacy might have been challenged and it bore the risk to become irrelevant on the international stage. Furthermore, Kofi Annan said that with 5 countries (China, France, Russia, the UK and the US) with permanent seats it reflected politics from 70 years ago. He argued that the Council received critics for its failure with such crises as wars in Syria and Ukraine, but also in long-term crises with the situation in the Middle East and the initiative to ban landmines (Kofi Annan Foundation, 2015). While the US strongly supported a permanent member status for Japan and India, the UK and France generally supported the idea, which would mean to include Germany, Brazil, India, and Japan as permanent members, and more African countries to the Council. China, supporting the approach of more developed countries as non-permanent members, opposed the permanent membership of Japan (Reynolds, 2020). Although comprehensive reform has not yet been achieved, Annan's proposals fundamentally shaped subsequent international debates on the legitimacy, representativeness, and effectiveness of the Security Council (Weiss, 2016). From the perspective of transformational leadership, Annan's efforts to reform the Security Council demonstrate the importance of strategic vision even when structural change proves politically unattainable. Although the proposed reforms were ultimately constrained by the divergent interests of the permanent members, Annan succeeded in placing the issue of Security Council reform firmly on the international agenda. His leadership illustrates that transformational leaders do not necessarily achieve immediate institutional change; rather, they redefine long-term policy debates and encourage gradual adaptation of international institutions. In this respect, Annan acted as an institutional entrepreneur, promoting a vision of a more representative and legitimate system of global governance (Burns, 1978; Barnett & Finnemore, 2004; Weiss, 2016).

Although the institutional composition of the Security Council has remained unchanged, Annan's proposals significantly contributed to the continuing international debate on the legitimacy, representativeness, and effectiveness of the Council. Subsequent reform discussions have continued to build upon many of the issues that he raised during his tenure.

While Security Council reform addressed the institutional architecture of the United Nations, Annan's broader reform agenda also sought to redefine the Organization's relationship with actors beyond governments. This broader understanding of global governance found its clearest expression in the establishment of the United Nations Global Compact.

3.2 Engaging New Actors: The UN Global Compact

One of Annan's most significant and enduring reform initiatives was the UN Global Compact, being a non-binding agreement for encouraging businesses for a sustainable and socially responsible policies. The program includes 10 principles focusing on human rights, labor, environment and anti-corruption. The businesses were engaged to report on their result on its implementation (Reynolds, 2020). The initiative shows a shift away from more government-centered approaches to focus more on the global stakeholders, for a global partnership to fight against hunger, ignorance, poverty and diseases. The Global Compact counts about 10,000 global participants and networks in more than 50 countries. The Global Compact was actually also the time when the global business and human rights items came generally on his agenda. In Davos in 2000, he noted that if globalization did not work for all, it

in the end would work for no one. It can be also seen as the roots that we call nowadays ESG investing, environmental, social and corporate governance criteria in investment decisions (Ruggie, 2018).

From the perspective of transformational leadership, the UN Global Compact represents one of Annan's most innovative contributions to global governance. Rather than limiting the United Nations to intergovernmental cooperation, Annan promoted a broader governance model that actively engaged the private sector, civil society, and other non-state actors in addressing global challenges. This initiative reflected a significant shift from traditional multilateral diplomacy towards multi-stakeholder governance and demonstrated Annan's ability to translate normative principles into practical institutional arrangements (Ruggie, 2018; Barnett & Finnemore, 2004).

The Global Compact also illustrates Annan's role as a norm entrepreneur. By encouraging businesses to voluntarily commit to principles concerning human rights, labour standards, environmental protection, and anti-corruption, he contributed to embedding responsible corporate behaviour within the broader framework of global governance. Although the initiative remained voluntary, its long-term influence on corporate sustainability, ESG frameworks, and public-private partnerships demonstrates how transformational leadership can shape international norms without relying on legally binding instruments (Finnemore & Sikkink, 1998; Bass & Riggio, 2006; United Nations Global Compact, 2024).

Beyond strengthening cooperation with the private sector, Annan also sought to create a shared strategic framework capable of mobilizing governments, international organizations, and civil society around common development priorities. This vision materialized in the Millennium Development Goals.

3.3 Building a Shared Development Agenda: The Millennium Development Goals

During the UN General Assembly in 2000, Kofi Annan presented the report titled 'We the Peoples' focusing on new and existing challenges. He presented eight targets for the world to aim in the upcoming 15 years, heading development and poverty eradication (Ruggie, 2018). These goals are in line with the Millennium Development Goals which were confirmed by the UN members for the global well-being (Reynolds, 2020). It included, for instance, the establishment of the Global Fund to Fight HIV/Aids, but also debt forgiveness and good governance in sub-Saharan Africa (UNA-UK, 2019). Although the Millennium Development Goals formally concluded in 2015, they established the conceptual and institutional foundations for the adoption of the Sustainable Development Goals (SDGs). The transition from eight Millennium Development Goals to the broader 2030 Agenda reflected both the achievements and the limitations of the MDG framework, while preserving Annan's original vision of integrating development, human rights, and global partnership into a coherent framework for international cooperation (United Nations, 2015; Weiss, 2016).

Kofi Annan was also a proponent to establish the UN Human Rights Council in order to replace the Commission on human Rights. It should focus on innovations, for instance, the Universal Periodic Review to peer review between states and larger involvement from civil society. Establishing the Peacebuilding Commission is a large initiative of an intergovernmental advisory board for the UN General Assembly and UN Security Council to support peace in countries (United Nations, 2005).

From the perspective of transformational leadership, the Millennium Development Goals (MDGs) represent one of the clearest examples of Annan's ability to articulate a shared global vision. Rather than proposing isolated development initiatives, Annan succeeded in framing poverty reduction, education, health, gender equality, and environmental sustainability as interconnected global priorities requiring collective action. This strategic vision enabled Member States with diverse political and economic interests to agree on a common

development agenda, thereby strengthening the legitimacy and coherence of multilateral cooperation (United Nations, 2000; Weiss, 2016).

The adoption of the MDGs also illustrates Annan's capacity for normative leadership. By transforming broad aspirations into measurable global objectives, he contributed to reshaping the international development agenda and establishing a framework that continued to influence global policy through the subsequent adoption of the Sustainable Development Goals in 2015. This ability to inspire long-term institutional commitment reflects one of the defining characteristics of transformational leadership—mobilizing diverse actors around a shared vision that extends beyond immediate political interests (Burns, 1978; Bass & Riggio, 2006; Biersteker, 2020).

Whereas the Millennium Development Goals reflected Annan's vision of inclusive global development, his reform agenda also extended to the evolution of international norms governing peace, security, and the protection of populations from mass atrocities.

3.4 Promoting New International Norms: The Responsibility to Protect

The roots of the Responsibility to Protect norm can be found in the mass atrocities committed in Rwanda in 1994 and the former Yugoslavia in 1995. The norm should ensure that the international community will never again fail to stop such mass crimes of genocide, war crimes, ethnic cleansing or crimes against humanity (Global Centre for the Responsibility to Protect, n.d.). The implementation of the Responsibility to Protect, also known as R2P, was first a recommendation from the Secretary-General Kofi Annan to the governments as a response to humanitarian crises. It noted that it should be the Responsibility to Protect, as a collective action and as a last resort, to rescue populations in danger, when their government is not in the position or unwilling to do so. In such case the responsibility would shift to the international community using diplomatic humanitarian and other methods to support human rights and the well-being of the population (European Parliament, 2005).

Kofi Annan challenged the member states to find a common ground to uphold the principles of the Charter, acting in defense and humanity. The R2P was articulated in the 2005 World Summit Outcome. Paragraphs 138 and 139 of the Summit confirm the responsibility of the states to protect their own population and to encourage and support other countries in order to uphold this commitment. The challenge Kofi Annan repeated in the 2000 Millennium Report (United Nations, n.d.). Still, the UN Charter has the principle of non-interference. But the sovereignty of states should be upheld and it is the states' responsibility to ensure the protection of its population, in particular, from the danger of genocide or other large-scale atrocities. Accordingly, the international community needs to act in the interest of the population (European Parliament, 2005).

Generally, the R2P states three pillars of responsibility:

1. The state has the responsibility to safeguard its population from four mass atrocity crimes. These are genocide, war crimes, crimes against humanity, and ethnic cleansing.
2. The responsibility to assist and help individual states so that they can meet their responsibility with the wider international community.
3. In case a state fails to protect who its population, the international community has to be prepared to take collective action, timely and decisive, in accordance with the UN Charter (Global Centre for the Responsibility to Protect, n.d.).

Despite its broad international endorsement, the Responsibility to Protect has remained the subject of considerable academic and political debate. Critics argue that the doctrine may create tensions with the principles of state sovereignty and non-intervention enshrined in the UN Charter and could potentially be invoked selectively to justify military intervention. Supporters, by contrast, maintain that R2P strengthens international accountability by establishing a normative framework for preventing genocide, war crimes, ethnic cleansing, and

crimes against humanity, while emphasizing that any collective action must remain consistent with the provisions of the United Nations Charter (European Parliament, 2005; United Nations, 2005; Bellamy, 2009).

The R2P was widely used over the last years and was referred to in more than 95 UN Security Council resolutions for crises such as in Central Africa, Côte d'Ivoire, Congo, Liberia, Libya and others. It has also been referenced to in more than 80 Human Rights Council resolutions and 40 General Assembly resolutions, which shows its increasing importance (Global Centre for the Responsibility to Protect, n.d.).

From the perspective of transformational leadership, the Responsibility to Protect (R2P) represents one of the most significant examples of Annan's contribution to normative innovation within the United Nations. Rather than proposing institutional reform alone, Annan sought to reshape the international understanding of sovereignty by emphasizing that state sovereignty entails responsibility as well as rights. This normative shift encouraged Member States to reconsider the relationship between national sovereignty, human rights, and collective international responsibility (United Nations, 2005; Global Centre for the Responsibility to Protect, n.d.).

The development of R2P also illustrates Annan's role as a norm entrepreneur. As Finnemore and Sikkink (1998) argue, international norms emerge through the efforts of actors capable of framing new principles and mobilizing support for their institutionalization. Although the implementation of R2P has remained politically contested, its endorsement at the 2005 World Summit and its subsequent incorporation into United Nations practice demonstrate the long-term influence of Annan's leadership on the evolution of global governance (Finnemore & Sikkink, 1998; Barnett & Finnemore, 2004; Weiss, 2016). In this respect, Annan's contribution extended beyond crisis management to redefining one of the fundamental principles guiding international responsibility in the twenty-first century.

Normative innovation alone, however, could not ensure a more effective United Nations. Annan therefore complemented his external reform agenda with a series of internal administrative reforms designed to improve the Organization's performance, accountability, and institutional credibility.

3.5 Modernizing the Organization: Administrative Reform

Administrative modernization formed an essential component of Annan's broader reform agenda. Beyond responding to individual organizational deficiencies, his objective was to strengthen the effectiveness, transparency, and accountability of the United Nations by introducing modern management practices consistent with the evolving demands placed upon international organizations. These reforms reflected Annan's conviction that institutional credibility depended not only on political legitimacy but also on organizational performance and public trust (Biersteker, 2020; Weiss, 2016).

For Kofi Annan it was important to modernize and improve the efficiency of UN activities, in particular, in areas of development, humanitarian reliefs, human rights, and peacekeeping. Indeed, this also required administrative and budgetary reforms in the UN. In 1999, Kofi Annan moved forward reducing the overhead costs steadily. In such areas as the result-based budgeting which was a priority for the US the progress was limited (U.S. Department of State Archive, n.d.). He also introduced the incremental procedural reform, focusing on new oversight mechanisms and working methods for efficiency increase and promoting fairness.

Before leaving office in 2006, the progress report titled 'In Larger Freedom: Towards Development, Security and Human Rights for All' was issued. It included recommendations on the improvement of the UN's approach (Reynolds, 2020). During his last press conference in 2006, Kofi Annan also spoke about the Oil-for Food Program and the mismanagement, as he

noted that 2,200 companies made deals with Saddam behind the backs of the UN. However, the program is more than Oil-for-Food, but for instance it supports after the Kashmir earthquake, and the UN is striving for equality and does its best to implement the millennium development goals, which will be also targets for his successor Ban Ki-moon. Still, in 2017, Kofi Annan presented the final report of the Advisory Commission on Rakhine State, which was conducted jointly with the Kofi Annan Foundation and the Government of Myanmar titled 'Towards a Peaceful, Fair and Prosperous Future for the People of Rakhine'. The report pointed out how to address the Rohingya people, but also addressed ways to reduce the election-related violence in Kenya (Reynolds, 2020).

Kofi Annan's work can be seen as a great example of being in line with Article 1 of the UN Charter, which is to maintain international peace and security, develop friendly relations among nations, achieve international cooperation when it comes to international problems, including promoting human rights, and also be a center for harmonizing actions (United Nations, 2025).

Annan's reform agenda demonstrated that the role of the Secretary-General extended beyond administrative leadership. His initiatives contributed to broader normative changes in global governance by expanding the UN's engagement with development, human rights, and private sector actors.

Despite these modernization efforts, the credibility of the Organization was severely tested by the Oil-for-Food controversy, which became the greatest governance challenge of Annan's tenure and highlighted the importance of institutional accountability.

From the perspective of transformational leadership, Annan's administrative reforms demonstrate that organizational transformation extends beyond structural reorganization. Transformational leaders seek to reshape institutional culture by promoting transparency, accountability, and continuous organizational learning. Annan's reforms reflected an effort to strengthen the United Nations as a more responsive, efficient, and credible institution capable of addressing increasingly complex global challenges. Although many reforms encountered political and bureaucratic constraints, they established important management principles that continued to influence subsequent administrative practice within the Organization (Burns, 1978; Bass & Riggio, 2006; Biersteker, 2020; Weiss, 2016).

3.6 Restoring Institutional Legitimacy: The Oil-for-Food Programme

One of the most significant challenges to Kofi Annan's leadership emerged from the controversy surrounding the United Nations Oil-for-Food Programme. Established in 1995 under UN Security Council Resolution 986, the programme enabled Iraq to sell limited quantities of oil in exchange for humanitarian goods while maintaining international sanctions following the Gulf War (United Nations Security Council, 1995). Although the programme provided essential humanitarian assistance to millions of Iraqi civilians, subsequent investigations uncovered widespread corruption involving Iraqi officials, private companies, and political actors from several Member States (Independent Inquiry Committee, 2005).

The Independent Inquiry Committee, chaired by Paul A. Volcker, concluded that serious weaknesses existed in the programme's management, oversight, and procurement procedures. While allegations also concerned Kojo Annan, the son of the Secretary-General, the Committee found no evidence that Kofi Annan had influenced procurement decisions or had personally benefited from the programme (Independent Inquiry Committee, 2005).

The scandal nevertheless represented one of the most serious reputational crises in the history of the United Nations. Beyond individual misconduct, it exposed structural deficiencies in transparency, financial oversight, and institutional accountability within a complex multilateral governance system (Weiss, 2016). The controversy reinforced growing demands

for administrative modernization, stronger internal oversight mechanisms, and more effective governance structures (Biersteker, 2020).

During the final years of his mandate, Annan responded by promoting management reforms aimed at strengthening ethics, transparency, internal auditing, and institutional accountability. Although these measures could not fully restore public confidence immediately, they became an important component of the broader UN reform agenda and influenced subsequent administrative reforms under his successor (Biersteker, 2020; Weiss, 2016).

From the perspective of transformational leadership, the Oil-for-Food scandal illustrates both the possibilities and the limits of leadership within international organizations. As Burns (1978) and Bass and Riggio (2006) argue, transformational leaders are often evaluated not only by their capacity to initiate change but also by their ability to preserve organizational legitimacy during periods of crisis. In Annan's case, the scandal demonstrated that the Secretary-General's moral authority depended not only on visionary leadership but equally on maintaining public trust in the integrity of the institution. His response therefore reflected an effort to strengthen the United Nations through institutional learning and organizational reform rather than through political confrontation, reinforcing his broader commitment to improving the effectiveness and legitimacy of multilateral governance (Barnett & Finnemore, 2004; Weiss, 2016).

Ultimately, the Oil-for-Food controversy demonstrated that transformational leadership within international organizations is tested not only by the capacity to initiate reform but also by the ability to preserve institutional legitimacy, promote organizational learning, and restore confidence in multilateral governance during periods of crisis (Burns, 1978; Barnett & Finnemore, 2004; Weiss, 2016).

4 Transformational Leadership under Great Power Politics

One of the defining characteristics of Kofi Annan's tenure was his ability to exercise leadership within a highly constrained political environment shaped by the competing interests of the major powers. Unlike national political leaders, the Secretary-General possesses only limited formal authority and must rely primarily on diplomacy, persuasion, and moral credibility to influence international decision-making. Consequently, the effectiveness of UN leadership depends not only on institutional vision but also on the capacity to navigate complex geopolitical relationships while preserving the neutrality and legitimacy of the Organization (Barnett & Finnemore, 2004; Weiss, 2016).

Annan's relations with the permanent members of the Security Council illustrate both the opportunities and the limitations of transformational leadership in multilateral institutions. His interactions with the United States, Russia, China, France, and the United Kingdom demonstrate how the Secretary-General sought to balance principled leadership with pragmatic diplomacy in an increasingly fragmented international order.

4.1 Relations with the United States

Kofi Annan's relationship with the United States illustrates the complexity of leadership within a multilateral organization where the Secretary-General must cooperate with the Organization's most influential Member State while simultaneously safeguarding the principles of the United Nations Charter. Throughout his tenure, Annan sought to maintain a constructive partnership with successive U.S. administrations despite growing disagreements over multilateralism, the use of force, and the role of the Security Council in international peace and security (Weiss, 2016; Williams, 2018).

These tensions became particularly evident during the debate over the 2003 invasion of Iraq. Annan consistently maintained that military intervention required explicit authorization by the Security Council and later described the invasion as inconsistent with the UN Charter. His position reflected a principled commitment to international legality rather than political

opposition to the United States itself (Annan, 2012). Nevertheless, despite profound disagreements over Iraq, Annan maintained a constructive relationship with President George W. Bush. In his memoirs, he expressed admiration for Bush's leadership in launching the President's Emergency Plan for AIDS Relief (PEPFAR), describing it as one of the largest commitments ever made by a single country to combat a global disease. This distinction illustrates Annan's ability to separate principled disagreement over international law from constructive cooperation in areas where common humanitarian objectives could be achieved, particularly in the global response to HIV/AIDS (Annan, 2012; UNAIDS, 2004).

4.2 Relations with Other Permanent Members

Following the end of his tenure as Secretary-General, Annan accepted the role of Joint Special Envoy of the United Nations and the League of Arab States for Syria in 2012. In this role he would represent the UN and the Arab League, in a time when conversation with President Bashar al-Assad in Syria seemed to be impossible. Despite agreeing on a cease-fire which was negotiated by Kofi Annan, he resigned a few months later when the cease-fire was ignored. The conflict worsened after that. He also noted that in case outsiders left Syria alone, the country would resolve their own problems in no time.

The tensions surrounding Iraq, and later the failure of mediation efforts in Syria, revealed the structural limitations of the Secretary-General's office. They also demonstrated that even the most respected international leaders remain dependent upon the political will of sovereign states, particularly the permanent members of the Security Council (Barnett & Finnemore, 2004; Weiss, 2016).

From the perspective of transformational leadership, Annan's relations with the major powers illustrate the inherent constraints of leadership within international organizations. The Secretary-General cannot impose political solutions on sovereign states; instead, leadership is exercised through persuasion, mediation, coalition-building, and the defence of internationally accepted norms. Annan's tenure demonstrates that transformational leadership in multilateral institutions is measured not only by the ability to achieve immediate political objectives but also by the capacity to preserve institutional legitimacy and sustain dialogue among actors with fundamentally divergent interests (Burns, 1978; Barnett & Finnemore, 2004; Weiss, 2016).

This balance between principled leadership and political pragmatism became one of the defining characteristics of Annan's tenure. His experience confirms that effective leadership in global governance requires not only vision and moral authority but also diplomatic flexibility and the ability to maintain the credibility of international institutions under conditions of persistent geopolitical competition.

The Syrian mediation effort illustrates another important dimension of Annan's leadership. Even after leaving office, he remained an internationally respected mediator whose moral authority enabled him to facilitate dialogue between deeply divided parties. Although the cease-fire ultimately collapsed, the mission demonstrated that Annan's influence continued to derive primarily from his credibility, diplomatic experience, and commitment to negotiated solutions rather than from formal institutional authority (Annan, 2012; Weiss, 2016). In this respect, Annan's experience confirms that the effectiveness of transformational leadership in international organizations depends less on formal authority than on the ability to build consensus, defend international norms, and preserve the legitimacy of multilateral institutions in an increasingly complex geopolitical environment.

Conclusion

This article examined Kofi Annan's tenure as Secretary-General of the United Nations through the theoretical lens of transformational leadership. The analysis has demonstrated that Annan's contribution extended far beyond the management of individual crises or the

implementation of isolated institutional reforms. His leadership fundamentally reshaped the normative agenda of the United Nations by promoting institutional reform, strengthening multilateral cooperation, expanding engagement with non-state actors, and advancing new international norms in the areas of human rights, sustainable development, and collective security.

The findings indicate that Annan's leadership is best understood as an example of transformational leadership operating under conditions of significant institutional and political constraint. Unlike national political leaders, the Secretary-General possesses only limited formal authority and depends largely on persuasion, consensus-building, moral credibility, and institutional entrepreneurship. Throughout his tenure, Annan consistently sought to transform crises into opportunities for institutional learning, strengthen the legitimacy of multilateral governance, and promote international cooperation despite the often conflicting interests of Member States.

The preceding analysis has further shown that Annan's influence cannot be evaluated solely through the immediate success or failure of individual initiatives. While reforms such as the expansion of the Security Council remained politically unattainable and crises such as Iraq exposed the structural limitations of the Secretary-General's office, many of his initiatives—including the United Nations Global Compact, the Millennium Development Goals, the Responsibility to Protect doctrine, and broader administrative reforms—continue to shape the work of the United Nations and contemporary debates on global governance. His leadership therefore illustrates that transformational change within international organizations is frequently achieved through the gradual evolution of institutions and international norms rather than through immediate political outcomes.

The international recognition of Annan's leadership culminated in the award of the Nobel Peace Prize in 2001 to both Kofi Annan and the United Nations, acknowledging their contribution to a better organized and more peaceful world. More importantly, however, Annan's enduring legacy lies in redefining the role of the Secretary-General as a leader capable of shaping international agendas, promoting normative innovation, and strengthening the legitimacy of multilateral cooperation in an increasingly complex international environment (The Nobel Prize, 2021; Biersteker, 2020).

By integrating transformational leadership theory with the study of international organizations, this article contributes to the literature by offering a broader analytical framework for understanding the role of the Secretary-General beyond administrative coordination. Rather than presenting a chronological account of Annan's initiatives, the study demonstrates how transformational leadership can be exercised through institutional reform, normative entrepreneurship, coalition-building, and engagement with non-state actors despite limited formal authority. This perspective may also provide a useful analytical framework for examining the leadership of other Secretaries-General and for further research on leadership within international organizations and the evolution of global governance.

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KREDIBILITA CENTRÁLNYCH BÁNK VO VYBRANÝCH EKONOMIKÁCH LATINSKEJ AMERIKY V KONTEXTE GLOBÁLNEJ FINANČNEJ KRÍZY A PANDÉMIE COVID-19¹

CREDIBILITY OF CENTRAL BANKS IN SELECTED LATIN AMERICAN ECONOMIES IN THE CONTEXT OF THE GLOBAL FINANCIAL CRISIS AND THE COVID-19 PANDEMIC

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Abstrakt: Príspevok analyzuje vývoj kredibility centrálnych bánk vo vybraných ekonomikách Latinskej Ameriky v období rokov 2008 – 2024, so zameraním na globálnu finančnú krízu a pandémiu Covid-19. Kredibilita je meraná prostredníctvom indexu založeného na odchýlkach inflačných očakávaní s horizontom dvoch kvartálov dopredu od časovo premenlivých inflačných cieľov, pričom metodológia zohľadňuje tolerančné pásmo okolo cieľa a nelineárnu penalizáciu veľkých odchýlok. Výsledky poukazujú na výraznú heterogenitu medzi krajinami. Počas globálnej finančnej krízy bola najvýraznejšia strata kredibility identifikovaná v Čile, zatiaľ čo Brazília vykazovala najmiernejšiu reakciu. Pandémia Covid-19 vyvolala podstatne silnejšie a plošnejšie oslabenie kredibility, pričom najvyššie maximá indexu boli zaznamenané v Čile a Kolumbii a najnižšie v Mexiku. Zistenia zdôrazňujú časovo premenlivý charakter kredibility v regióne a jej citlivosť na veľké externé šoky a domáce menovo-politické kompromisy.

Kľúčové slová: kredibilita centrálnej banky, Latinská Amerika, inflačné očakávania, ukotvenie inflačných očakávaní, inflačný cieľ, globálna finančná kríza, pandémia Covid-19

JEL: E52, E58, E61, D84

Abstract: This paper analyses the evolution of central bank credibility in selected Latin American economies over 2008–2024, with a focus on the Global Financial Crisis and the Covid-19 pandemic. Credibility is measured using an index based on deviations of two-quarter-ahead inflation expectations from time-varying inflation targets, allowing for a tolerance band around the target and a nonlinear penalty for large deviations. The results point to pronounced cross-country heterogeneity. During the Global Financial Crisis, the sharpest deterioration in credibility is observed in Chile, while Brazil records the mildest response. The Covid-19 episode generates a markedly stronger and more widespread loss of credibility, with the highest peak values in Chile and Colombia and the lowest in Mexico. Overall, the findings highlight the time-varying nature of credibility in the region and its sensitivity to large external shocks and domestic policy trade-offs.

Keywords: central bank credibility, Latin America, inflation expectations, anchoring of inflation expectations, inflation target, global financial crisis, Covid-19 pandemic

JEL: E52, E58, E61, D84

Úvod

Ako výstižne poznamenala Alice Rivlin, bývalá podpredsedníčka Federálneho rezervného systému, úlohou centrálnej banky je „znepokojovať sa“ (Bhatt, 2023). Toto tvrdenie je v súčasnom makroekonomickom prostredí mimoriadne aktuálne. Centrálne banky čelia kombinácii bezprecedentných výziev, ktoré vyplývajú z potreby prijímať nepopulárne

¹ Tento článok je súčasťou projektu VEGA 1/0639/24.

rozhodnutia, z rastúceho politického tlaku, z rýchleho šírenia informácií a z narastajúcej komplexnosti finančných trhov, čo zvyšuje význam dôveryhodnosti menovej politiky.

Tieto výzvy sa osobitne výrazne prejavujú v ekonomikách Latinskej Ameriky, kde je menová politika dlhodobo formovaná vyššou makroekonomickou volatilitou, výraznejšou citlivosťou na externé šoky a v niektorých prípadoch aj historickou skúsenosťou s vysokou infláciou. V takomto prostredí má ukotvenie inflačných očakávaní a schopnosť centrálnej banky presvedčivo naplňať cenovú stabilitu zásadný význam pre účinnosť transmisného mechanizmu menovej politiky.

Svetová ekonomika pritom v 21. storočí prešla dvoma zásadnými krízovými epizódami, ktoré zásadným spôsobom preverili dôveryhodnosť menovo-politických autorít. Globálna finančná kríza vyústila do výrazného zhoršenia finančných podmienok a výrazného oslabenia hospodárskej aktivity, čo si v mnohých ekonomikách vyžiadalo výrazné uvoľnenie menovej politiky a intenzívnejšie využívanie nekonvenčných nástrojov. Pandémia Covid-19 predstavovala kvalitatívne odlišný šok, ktorý najskôr vyvolal výrazný pokles ekonomickej aktivity, no v postpandemickej fáze sa v kombinácii narušenej ponuky a oživeného dopytu premietol do zvýšených inflačných tlakov. Následná epizóda vyššej inflácie si v mnohých krajinách vyžiadala rýchly obrat menovej politiky smerom k reštrikcii s cieľom stabilizovať inflačné očakávania.

V tomto kontexte nadobúda kľúčový význam schopnosť centrálnych bánk udržiavať dôveru verejnosti v napĺňanie cieľov vyplývajúcich z ich mandátov. Miera, do akej je centrálna banka schopná tieto záväzky plniť, je vo výraznej miere determinovaná jej dôveryhodnosťou, ktorá je v ekonomickej literatúre označovaná ako kredibilita (Blinder, 1999). Po globálnej finančnej kríze sa navyše v literatúre etabloval prístup, podľa ktorého je kredibilitu možné kvantifikovať prostredníctvom odchýlok inflačných očakávaní od inflačných cieľov v rámci režimu inflačného cielenia, čo umožňuje zachytiť jej časovo premenlivý charakter a reakciu na krízové šoky (Bordo & Siklos, 2015).

Cieľom príspevku je analyzovať vývoj kredibility centrálnych bánk vo vybraných ekonomikách Latinskej Ameriky v období rokov 2008 – 2024 a porovnať jej dynamiku v reakcii na globálnu finančnú krízu a pandémiu Covid-19. Kredibilita je analyzovaná pomocou indexového prístupu založeného na vzťahu medzi inflačnými očakávaniami a inflačnými cieľmi centrálnych bánk (Bordo & Siklos, 2015). Takto zvolený prístup umožňuje komparatívne posúdiť intenzitu straty kredibility v čase a medzi krajinami a identifikovať epizódy najvýraznejšieho oslabenia ukotvenia inflačných očakávaní.

Príspevok tak prispieva k literatúre o kredibilite centrálnych bánk rozšírením empirických poznatkov o región Latinskej Ameriky a poskytuje komparatívny pohľad na správanie inflačných očakávaní počas dvoch najvýznamnejších makroekonomických kríz 21. storočia. Získané výsledky zároveň ponúkajú implikácie pre menovú politiku v ekonomikách s historicky zvýšenou inflačnou zraniteľnosťou.

1 Teoretické východiská

Záujem o kredibilitu centrálnych bánk nevyplýva výlučne z akademickej diskusie, ale dlhodobo rezonuje aj medzi tvorcami menovej politiky. Už skorá empirická štúdia poukázala na výraznú mieru zhody medzi centrálnymi bankármi a akademikmi v tom, že kredibilita predstavuje kľúčový predpoklad úspešného dosahovania cenovej stability. Respondenti zároveň zdôrazňovali, že dôveryhodnosť menovej politiky je významná najmä z hľadiska udržiavania nízkej inflácie a znižovania nákladov dezinflácie, pričom medzi rozhodujúce faktory budovania kredibility radili históriu konzistentného správania, nezávislosť centrálnej banky a transparentnosť (Blinder, 1999).

V nadväznosti na tieto východiská sa v literatúre, najmä po globálnej finančnej kríze, etabloval prístup kvantifikácie kredibility prostredníctvom ukazovateľov založených na vzťahu

medzi inflačnými očakávaniami a inflačnými cieľmi centrálnych bánk v režime inflačného cielenia. Tento prístup umožňuje interpretovať kredibilitu ako časovo premenlivú veličinu, ktorá reaguje na makroekonomické a finančné šoky, a preto je obzvlášť vhodný na analýzu krízových období (Bordo & Siklos, 2015). Zároveň platí, že informatívnosť takto konštruovaných indexov závisí od miery ukotvenia inflačných očakávaní, keďže pri slabšie ukotvených očakávaniach môžu šoky vyvolávať výraznejšie a prudšie zmeny v odchýlkach očakávanej inflácie od cieľovej úrovne (Bordo & Siklos, 2015).

Tieto charakteristiky sú osobitne relevantné v kontexte krajín Latinskej Ameriky, kde sa menovo-politické rámce vyvíjali v prostredí častejšej inflácie, vyššej makroekonomickej volatility a v niektorých prípadoch aj historickej skúsenosti s epizódami veľmi vysokej inflácie. V takomto prostredí má dôveryhodnosť centrálnej banky zvýšený význam, keďže stabilné ukotvenie inflačných očakávaní je náročnejšie a citlivejšie na externé aj domáce šoky. Zároveň sa tým posilňuje úloha kredibility ako transmisného kanála menovej politiky – ak verejnosť neverí záväzku centrálnej banky smerovať infláciu k cieľu, menovo-politické impulzy sa do ekonomiky prenášajú menej účinne a stabilizácia cenového vývoja si môže vyžadovať vyššie náklady (Blinder, 1999).

Zvolený časový horizont rokov 2008 – 2024 umožňuje analyzovať vývoj kredibility centrálnych bánk Latinskej Ameriky počas dvoch krízových epizód, ktoré sa od seba zásadne líšili svojou povahou aj implikáciami pre menovú politiku. Globálna finančná kríza bola spojená s výrazným zhoršením finančných podmienok a oslabením agregátneho dopytu, čo v mnohých ekonomikách viedlo k tlakom na nízku infláciu a k výraznejšiemu využívaniu expanzívnych nástrojov hospodárskej politiky. Pandémia Covid-19 naopak vytvorila kombináciu ponukových a dopytových narušení, ktoré sa v postpandemickej fáze premietli do zvýšenej inflácie a do potreby rýchleho sprísňovania menovej politiky s cieľom opätovne stabilizovať inflačné očakávania. Práve tento kontrast vytvára vhodný priestor na komparáciu vývoja kredibility v prostredí slabých cenových tlakov a následne v podmienkach výrazného inflačného zrýchlenia.

Príspevok preto vychádza z prístupu, ktorý meria kredibilitu prostredníctvom odchýlky inflačných očakávaní od časovo premenlivých inflačných cieľov centrálnych bánk., pričom zohľadňuje aj existenciu tolerančných pásiem okolo cieľovej úrovne. Takto definovaný index poskytuje inštitucionálne konzistentné meranie kredibility a je vhodný na zachytenie jej dynamiky v období zvýšenej makroekonomickej volatility, keď sa riziko oslabenia ukotvenia inflačných očakávaní typicky zvyšuje (Bordo & Siklos, 2015). Súčasne umožňuje identifikovať epizódy najvýraznejšej straty kredibility v čase a porovnať intenzitu reakcie medzi jednotlivými centrálnymi bankami, čo je kľúčové najmä pri analýze regiónu s potenciálne odlišnou historickou „inflačnou pamäťou“ a rozdielnou mierou stability menovo-politických rámcov (Blinder, 1999).

Napriek rozsiahlej literatúre o kredibilite centrálnych bánk zostáva vývoj kredibility v ekonomikách Latinskej Ameriky v období veľkých globálnych kríz relatívne málo preskúmaný. Väčšina existujúcich empirických štúdií sa sústreďuje na vyspelé ekonomiky alebo na širšie globálne vzorky, v ktorých špecifiká latinskoamerických krajín často zanikajú. Región Latinskej Ameriky sa pritom vyznačuje výraznou historickou inflačnou volatilitou, rozdielnou dĺžkou a konzistenciou uplatňovania režimu inflačného cielenia, ako aj heterogénnou úrovňou dôvery v menovo-politické inštitúcie. Tieto charakteristiky naznačujú, že reakcia kredibility centrálnych bánk na veľké makroekonomické šoky môže v tomto regióne vykazovať odlišnú dynamiku a intenzitu než v iných častiach sveta, čo vytvára priestor pre detailnú komparatívnu analýzu založenú na kvantitatívnom meraní kredibility.

V literatúre existuje viacero prístupov k meraniu kredibility centrálnych bánk, ktoré sa líšia použitými indikátormi aj analytickým rámcom. Popri prístupoch založených na odchýlkach inflačných očakávaní od inflačného cieľa (Bordo & Siklos, 2015) sa kredibilita

často hodnotí aj prostredníctvom údajov z prieskumov očakávaní ekonomických subjektov, ktoré umožňujú zachytiť mieru dôvery verejnosti v menovú politiku (Blinder, 2000; Ehrmann et al., 2012). Ďalšiu skupinu predstavujú trhovo orientované ukazovatele, vychádzajúce napríklad z výnosov indexovaných dlhopisov alebo z implicitných inflačných očakávaní na finančných trhoch, ktoré reflektujú kredibilitu menovej politiky v očiach investorov (Gürkaynak et al., 2005; Beechey et al., 2011). V neposlednom rade sa kredibilita posudzuje aj prostredníctvom inštitucionálnych charakteristík, ako sú nezávislosť centrálnej banky, transparentnosť alebo kvalita menovo-politickej komunikácie (Cukierman, 1992; Dincer & Eichengreen, 2014). Tieto prístupy sa vzájomne dopĺňajú a poukazujú na multidimenzionálny charakter kredibility, pričom zvolený prístup v tomto príspevku sa sústreďuje na jej kvantifikáciu prostredníctvom inflačných očakávaní ako kľúčového transmisného kanála menovej politiky.

2 Metodológia

Empirická časť príspevku je založená na kvantitatívnom prístupe k meraniu kredibility centrálnych bánk, ktorý umožňuje zachytiť jej časovú dynamiku v reakcii na výrazné makroekonomické šoky. Analýza vychádza z konceptu kredibility ako miery zhody medzi inflačnými očakávaniami ekonomických agentov a inflačným cieľom centrálnej banky, pričom tento vzťah je operacionalizovaný prostredníctvom indexu kredibility inšpirovaného prácou Bordo & Siklos (2015).

Základom empirického rámca je konštrukcia indexu kredibility, ktorý kvantifikuje veľkosť odchýlky inflačných očakávaní od časovo premenlivého inflačného cieľa centrálnej banky. Ako aproximácia inflačných očakávaní sa používajú očakávania ekonomických agentov s fixným horizontom dvoch kvartálov dopredu, zatiaľ čo inflačný cieľ je reprezentovaný oficiálne deklarovanými cieľmi jednotlivých centrálnych bánk, vrátane prípadných zmien v ich úrovni v priebehu analyzovaného obdobia.

Keďže centrálna banka v praxi neuplatňuje rigidné bodové cielenie inflácie, ale pripúšťa určitú toleranciu okolo cieľovej hodnoty, metodologický rámec zohľadňuje existenciu tolerančného pásma okolo inflačného cieľa. V súlade s bežnou menovo-politickou praxou je toto pásmo stanovené v rozsahu ± 1 percentuálny bod okolo cieľa, resp. okolo strednej hodnoty cieľového intervalu.

Index kredibility $CRED_t$ je konštruovaný ako stratová funkcia, ktorej tvar závisí od veľkosti odchýlky inflačných očakávaní od inflačného cieľa. V prípade, že sa inflačné očakávania nachádzajú v rámci tolerančného pásma, strata kredibility je meraná absolútnou hodnotou tejto odchýlky. Ak však inflačné očakávania prekročia hranice tolerančného pásma, penalizácia nadobúda kvadratickú formu, čím sa výraznejšie zohľadňujú veľké a pretrvávajúce odchýlky od cieľovej inflácie. Formálne je index definovaný nasledovne:

$$CRED_t = |\pi ft + 0,5 - \pi * t|, ak \pi * t - 1 \leq \pi ft + 0,5 \leq \pi * t + 1 \quad (1)$$

$$CRED_t = |\pi ft + 0,5 - \pi * t|^2, ak \pi ft + 0,5 < \pi * t - 1 \text{ alebo } \pi ft + 0,5 > \pi * t + 1 \quad (2)$$

kde $\pi ft + 0,5$ predstavuje inflačné očakávania ekonomických agentov s horizontom dvoch kvartálov dopredu;

$\pi * t$ označuje časovo premenlivý inflačný cieľ centrálnej banky;

interval $\langle \pi * t - 1 \text{ a } \pi * t + 1 \rangle$ reprezentuje tolerančné pásmo $\pm 1\%$ okolo inflačného cieľa, resp. strednej hodnoty intervalu inflačného cieľa centrálnej banky.

Takto konštruovaný index nadobúda výlučne nezáporné hodnoty, pričom nulová hodnota indikuje situáciu úplnej kredibility, keď sú inflačné očakávania plne ukotvené na

cieľovej úrovni. Rastúce hodnoty indexu signalizujú zvyšujúcu sa mieru oslabenia ukotvenia inflačných očakávaní a tým aj pokles kredibility centrálnej banky, bez ohľadu na smer odchýlky.

Použitie kvadratickej penalizácie pri väčších odchýlkach vedie k nelineárnemu rastu indexu v obdobiach zvýšenej makroekonomickej volatility, čo môže generovať veľmi vysoké hodnoty indexu. Tieto hodnoty nie sú interpretované v absolútnom zmysle, ale slúžia predovšetkým na relatívne porovnanie intenzity straty kredibility v čase a medzi jednotlivými krajinami. Cieľom indexu je zachytiť dynamiku a rozsah odklonu inflačných očakávaní od cieľovej trajektórie, nie poskytovať normalizované porovnanie úrovni kredibility.

Údaje o inflačných cieľoch centrálnych bánk sú získané z databázy International Monetary Fund – Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER), ktorá poskytuje systematický prehľad menovo-politických režimov a cieľov inflácie (International Monetary Fund, 2026), ako aj z oficiálnych webových stránok jednotlivých centrálnych bánk (Banco Central do Brasil, 2026a; Banco Central de Chile, 2026a; Banco de la República, 2026b; Banco de México, 2026b).

Údaje o inflačných očakávaniach pochádzajú z databázy OECD Inflation Forecast (Organisation for Economic Co-operation and Development, 2026) a z pravidelných prieskumov a publikácií centrálnych bánk, najmä z Monetary Policy Report (IPoM) v prípade Čile, Encuesta sobre las Expectativas de los Especialistas en Economía v prípade Mexika a obdobných štatistických výstupov v Brazílii a Kolumbii (Banco Central do Brasil, 2026b; Banco Central de Chile, 2026b; Banco de la República, 2026a; Banco de México, 2026a). Tieto zdroje poskytujú konzistentné a porovnateľné údaje o inflačných očakávaniach na kvartálnej frekvencii.

Do výskumného súboru boli zaradené centrálné banky, ktoré spĺňali dve základné podmienky. Po prvé, museli uplatňovať režim inflačného cielenia najneskôr na začiatku analyzovaného obdobia. Po druhé, pre príslušné krajiny museli byť počas celého sledovaného obdobia dostupné konzistentné a porovnateľné údaje o inflačných očakávaniach na kvartálnej frekvencii. Tieto kritériá zabezpečujú metodologickú konzistentnosť analýzy a umožňujú komparatívne hodnotenie vývoja kredibility centrálnych bánk v latinskoamerickom regióne.

Obe klasifikačné podmienky splnili nasledujúce centrálné banky tvoriace výskumný súbor zobrazené v tabuľke 1:

Tabuľka 1: Výskumný súbor

<i>Názov centrálnej banky</i>	<i>Skratka centrálnej banky</i>	<i>Krajina / Menová oblasť pôsobnosti</i>
Banco Central do Brasil	BCB	Brazília
Banco de la República	BanRep	Kolumbia
Banco Central de Chile	BCCh	Čile
Banco de México	Banxico	Mexiko

Prameň: Vlastné spracovanie

3 Výsledky

V kapitole výsledkov je prezentovaná vizuálna analýza vývoja indexu kredibility centrálnych bánk vo vybraných krajinách Latinskej Ameriky prostredníctvom viacerých grafických zobrazení, ktoré umožňujú komparatívne posúdenie dynamiky kredibility medzi jednotlivými menovo-politickými autoritami v rôznych časových úsekoch. Grafická analýza je doplnená deskriptívnym opisom identifikovaných vývojových vzorcov a prezentáciou hlavných kvantitatívnych zistení.

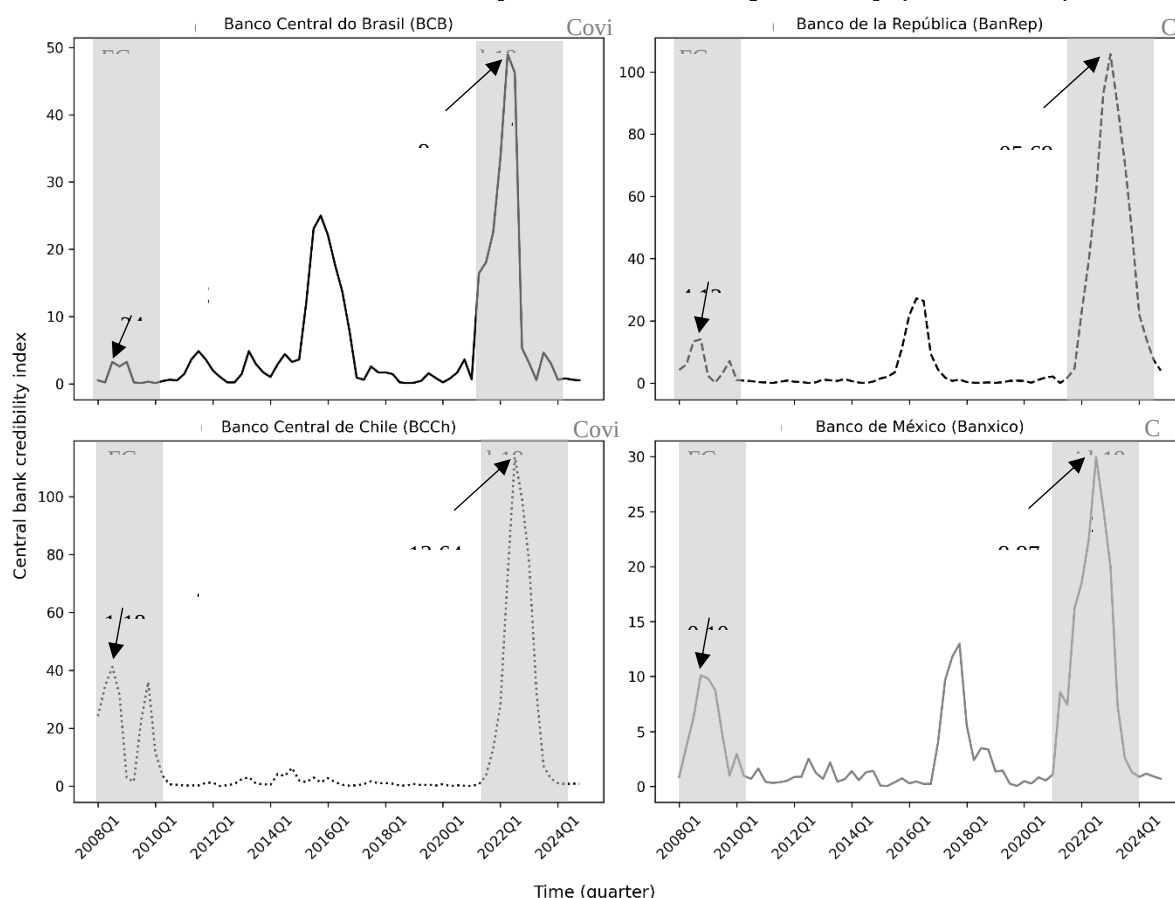
Graf 1 zachytáva vývoj kredibility centrálnych bánk vybraných latinskoamerických ekonomík v období rokov 2008 – 2024, meraný prostredníctvom indexu kredibility. Do výskumného súboru boli zahrnuté nasledovné menovo-politické autority: Banco Central do Brasil (ďalej BCB) v Brazílii, Banco de la República (ďalej BanRep) v Kolumbii, Banco Central de Chile (ďalej BCCh) v Čile a Banco de México (ďalej Banxico) v Mexiku.

Na rozdiel od grafu 1, graf 2 sústreďuje vývoj kredibility všetkých analyzovaných centrálnych bánk do jedného spoločného zobrazenia, čo umožňuje priamu komparáciu ich dynamiky v priebehu celého sledovaného obdobia. Kým graf 1 poskytuje detailný pohľad na vývoj kredibility v jednotlivých krajinách samostatne, graf 2 umožňuje identifikovať rozdiely v načasovaní a intenzite reakcií medzi centrálnymi bankami v jednotnom vizuálnom rámci.

Grafy 3 a 4 sa následne zameriavajú na zúžené časové úseky, ktoré zachytávajú dve kľúčové krízové epizódy – globálnu finančnú krízu a pandémiu Covid-19. Ich prínos spočíva v tom, že umožňujú detailnejšie analyzovať krátkodobú dynamiku kredibility v období výrazných makroekonomických šokov, ktorá môže byť v celkovom horizonte grafu 2 menej zreteľná. Graf 3 tak poskytuje detailnejší pohľad na priebeh a intenzitu straty kredibility počas globálnej finančnej krízy, zatiaľ čo graf 4 umožňuje analogickú analýzu v období pandémie Covid-19, ktorá bola charakteristická odlišnou povahou šoku a výraznejšími inflačnými tlakmi v postpandemickej fáze.

Grafické zobrazenia sú upravené tak, aby boli samostatne interpretovateľné, pričom zahŕňajú vizuálne zvýraznenie krízových období, konkrétne globálnej finančnej krízy a pandémie Covid-19, ako aj identifikáciu intervalov s maximálnymi hodnotami indexu kredibility.

Graf 1: Kredibilita centrálnych bán Latinskej Ameriky (2008 - 2024)

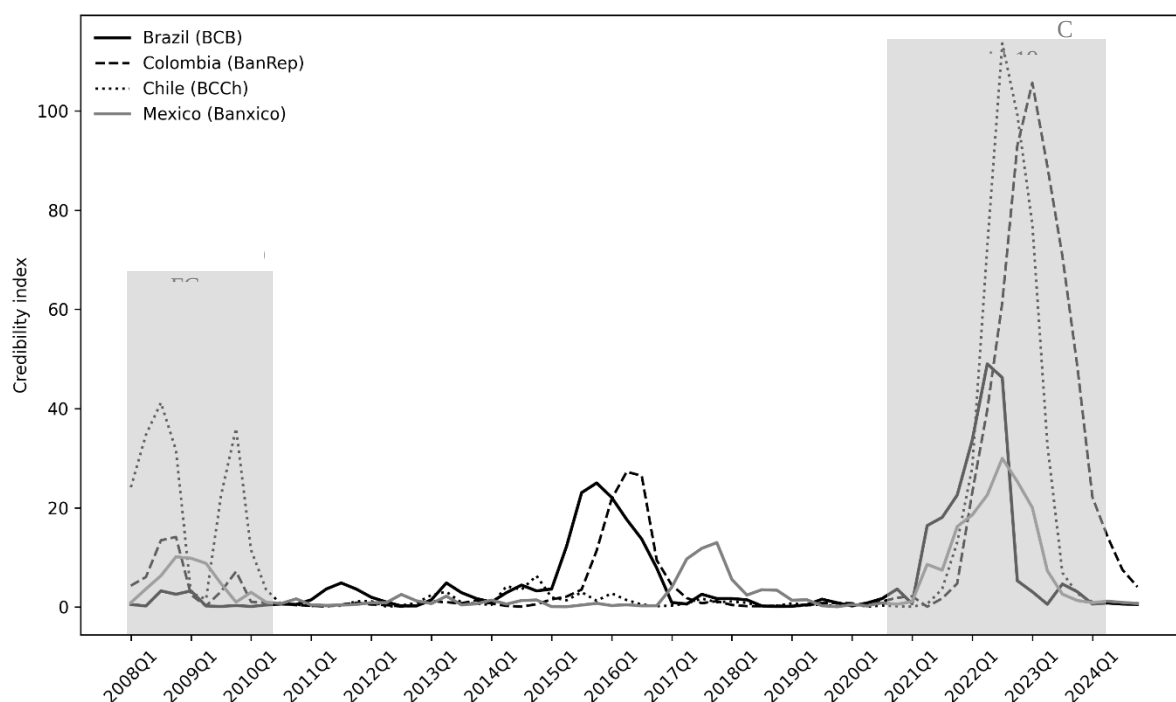


Pozn.: Zvýraznené oblasti označujú krízové obdobia (globálna finančná kríza a pandémia Covid-19), v ktorých sú vyznačené lokálne maximá indexu CREDt.

Prameň: Vlastné spracovanie

V prípade BCB možno pozorovať výraznú časovú variabilitu kredibility počas celého sledovaného obdobia. Bezprostredne po vypuknutí globálnej finančnej krízy došlo k nárastu CREDt, čo poukazuje na oslabenie ukotvenia inflačných očakávaní v prostredí výrazného zhoršenia globálnych finančných podmienok. Tento nárast však nebol tak výrazný ako v prípade iných centrálnych bánk v rámci sledovanej vzorky, pričom CREDt dosiahol v rámci tohto obdobia maximum na úrovni 3,24 (pozri grafy 1; 2; 3 a tabuľku 2). Relatívne miernejšia reakcia BCB môže byť vysvetlená špecifickými podmienkami brazílskej ekonomiky v období bezprostredne po vypuknutí globálnej finančnej krízy. Brazília bola v rokoch 2008 – 2010 podporená priaznivým vývojom na svetových komoditných trhoch, keďže rast cien surovín a silný externý dopyt prispeli k rýchlejšiemu oživeniu hospodárskej aktivity v porovnaní s viacerými inými ekonomikami regiónu. Zároveň fiškálna pozícia Brazílie umožnila implementáciu expanzívnych stabilizačných opatrení, ktoré tlmili negatívne dopady krízy na domáci dopyt. V dôsledku toho nedošlo k tak výraznému oslabeniu ukotvenia inflačných očakávaní, pričom menovo-politický rámec BCB si v tomto období zachoval relatívne vyššiu dôveryhodnosť než v krajinách čeliacich výraznejším vnútorným nerovnováham alebo slabšej makroekonomickej stabilite. V prípade BCB však pozorujeme výraznejšie oslabenie kredibility najmä v období 2015Q2 až 2016Q4, keď CREDt vykazuje výrazný nárast až na úroveň 25 (pozri grafy 1; 2; 4 a tabuľku 3). Tento vývoj možno interpretovať v kontexte výraznej hospodárskej a politickej krízy, ktorou Brazília v danom období prechádzala. Ekonomia čelila hlbkej recesii sprevádzanej zvýšenou makroekonomickou neistotou, pričom inflácia sa pohybovala nad cieľovým pásmom centrálnej banky. Kombinácia recesie, volatilnej inflácie a oslabenia dôvery v hospodársko-politický rámec pravdepodobne prispela k narušeniu ukotvenia inflačných očakávaní ekonomických agentov, čo sa premietlo do pozorovaného nárastu CREDt. V nasledujúcich rokoch sa kredibilita postupne obnovovala, pričom inflačné očakávania sa opätovne približovali k inflačnému cieľu centrálnej banky. Výrazný zlom nastal počas pandémie Covid-19, keď CREDt výrazne vzrástol a dosiahol najvyššie hodnoty v celom sledovanom období na úrovni 49. Tento vývoj odráža výrazný odklon inflačných očakávaní od cieľa v prostredí kombinácie pandemického šoku, expanzívnej menovej politiky a následného silného inflačného tlaku v postpandemickej fáze. Kombinácia týchto faktorov viedla k výraznejšiemu oslabeniu ukotvenia inflačných očakávaní a k citel'nému oslabeniu kredibility menovej politiky BCB počas pandemického obdobia. V závere sledovaného obdobia možno pozorovať postupný pokles CREDt, čo naznačuje obnovu kredibility menovej politiky po odznení efektov krízy.

Graf 2: Kredibilita centrálnych bánk Latinskej Ameriky (2008 - 2024) – spoločný graf



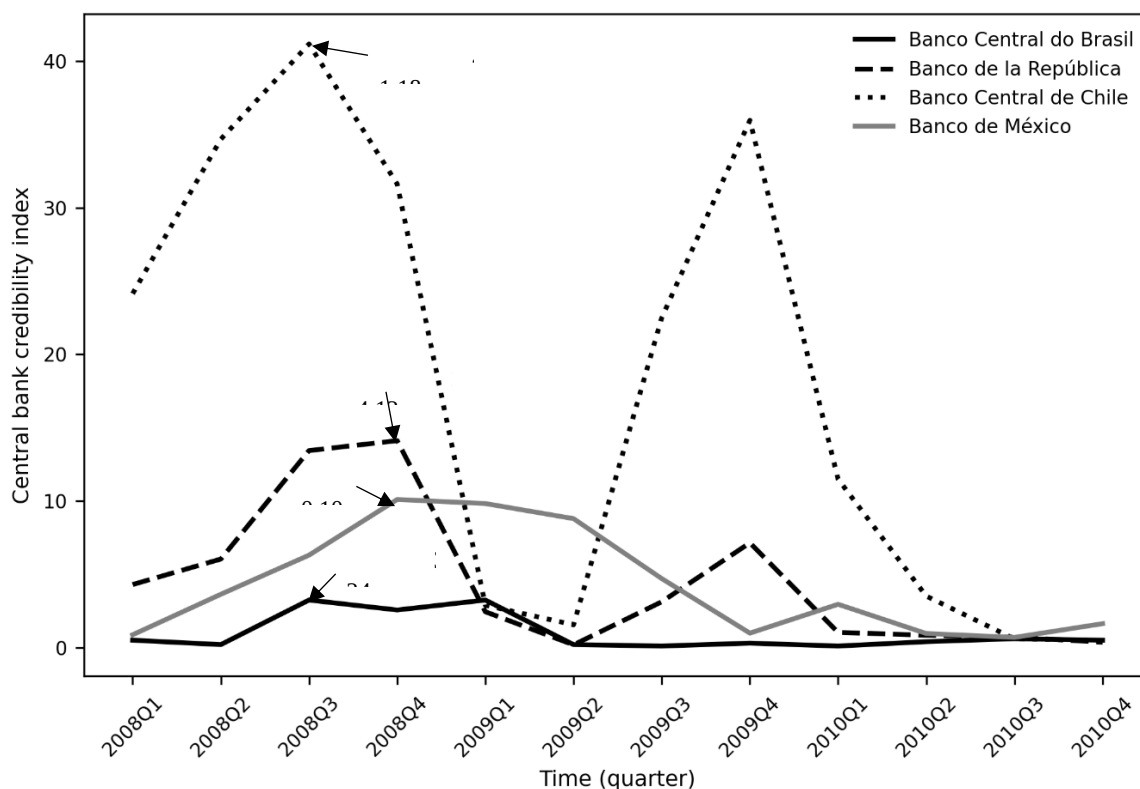
Pozn.: Zvýraznené oblasti označujú krízové obdobia (globálna finančná kríza a pandémia Covid-19).

Prameň: Vlastné spracovanie

Vývoj kredibility BanRep v Kolumbii vykazuje podobný základný vzorec ako BCB. Počas globálnej finančnej krízy zaznamenávame zvýšenie CREDt, ktoré signalizuje oslabenie ukotvenia inflačných očakávaní, pričom rozsah tohto nárastu bol výraznejší ako v prípade BCB a dosiahol maximum na úrovni 14,22 (pozri grafy 1; 2; 3 a tabuľku 2). Tento vývoj možno interpretovať v kontexte vyššej expozície kolumbijskej ekonomiky voči externým finančným šokom a komoditným kanálom transmisie. Kolumbia ako exportér ropy a ďalších primárnych komodít čelila počas globálnej finančnej krízy výraznému poklesu globálneho dopytu a výrazným výkyvom cien komodít, čo sa premietlo do zhoršenia makroekonomických fundamentov a zvýšenej volatility výmenného kurzu. Oslabenie kolumbijského pesu zároveň urýchlilo prenos externých cenových tlakov do domácej inflácie, čím prispelo k odchýleniu inflačných očakávaní od cieľovej úrovne. V prostredí zvýšenej neistoty a zhoršených globálnych finančných podmienok sa tak kredibilita BanRep dočasne oslabila výraznejšie než v prípade Brazílie, čo odráža vyššiu citlivosť inflačných očakávaní v kolumbijskej ekonomike na externé šoky počas krízovej epizódy. V období po globálnej finančnej kríze sa kredibilita stabilizovala a inflačné očakávania sa dlhodobo pohybovali v blízkosti inflačného cieľa, až pokým nedošlo k výraznejšiemu oslabeniu kredibility najmä v období 2015Q4 až 2017Q1, keď CREDt vykazuje výrazný nárast až na úroveň 27,25 (pozri grafy 1; 2 a 3). Tento vývoj možno interpretovať v kontexte výrazného externého komoditného šoku spojeného s výrazným poklesom svetových cien ropy, ktorá predstavuje kľúčovú exportnú komoditu Kolumbie. Kolaps ropných príjmov v rokoch 2014 – 2016 viedol k zhoršeniu obchodnej bilancie, zvýšeniu makroekonomickej neistoty a výraznému oslabeniu kolumbijského pesu. Depreciácia meny sa následne premietla do rastu dovozných cien a urýchlila kurzový prenos do spotrebiteľskej inflácie, čo spôsobilo výraznejší odklon inflačných očakávaní od cieľovej úrovne BanRep. V prostredí zvýšenej inflácie a volatilných externých podmienok tak došlo k dočasnému narušeniu ukotvenia očakávaní a k výraznejšej strate kredibility centrálnej banky. V nasledujúcich rokoch sa kredibilita postupne obnovovala, pričom inflačné očakávania sa opätovne približovali k inflačnému cieľu centrálnej banky. Pandémia Covid-19 však opäť

viedla k výraznému zhoršeniu kredibility, keď CREDt vzrástol až na úroveň 105,69 (pozri grafy 1; 2; 4 a tabuľku 3), čo predstavovalo druhú najvyššiu maximálnu hodnotu vo výskumnej vzorke po BCCh. V prípade Kolumbie bol pandemický šok sprevádzaný výrazným hospodárskym poklesom, expanzívnu fiškálnou reakciou a zhoršením verejných financií, čo zvýšilo rizikovú prírážku krajiny a prispelo k oslabeniu kolumbijského pesa. Depreciácia meny spolu s narušením globálnych dodávateľských reťazcov a rastom cien potravín a energií viedli k výraznému zrýchleniu inflácie v postpandemickej fáze. V dôsledku kombinácie externých cenových šokov a domácich makroekonomických tlakov tak BanRep čelila výraznejšiemu odklonu očakávaní od inflačného cieľa a dočasnej strate kredibility počas pandemického obdobia. Sprísňovanie menovej politiky v rokoch 2021 – 2023 preto predstavovalo kľúčový nástroj obnovy ukotvenia inflačných očakávaní. Hoci následné obdobie bolo spojené s postupným znižovaním indexu, návrat k predpandemickej úrovni kredibility bol mierne pomalší, než tomu bolo v prípade BCB. Tieto okolnosti mohli prispievať k dlhšie trvajúcemu oslabeniu ukotvenia inflačných očakávaní a k pomalšej obnove dôvery v schopnosť BanRep stabilizovať infláciu. V porovnaní s Brazíliou, kde BCB pristúpila k rýchlejšiemu a agresívnejšiemu sprísneniu menovej politiky už v skoršej fáze postpandemického inflačného zrýchlenia, bola reakcia BanRep relatívne pozvoľnejšia. Tento faktor mohol prispieť k pomalšiemu opätovnému ukotveniu inflačných očakávaní v Kolumbii.

Graf 3: Kredibilita centrálnych bánk Latinskej Ameriky počas globálnej finančnej krízy (2008 – 2010)



Pozn.: Graf zobrazuje krízové obdobie (globálna finančná kríza), v rámci ktorého sú vyznačené lokálne maximá indexu CREDt.

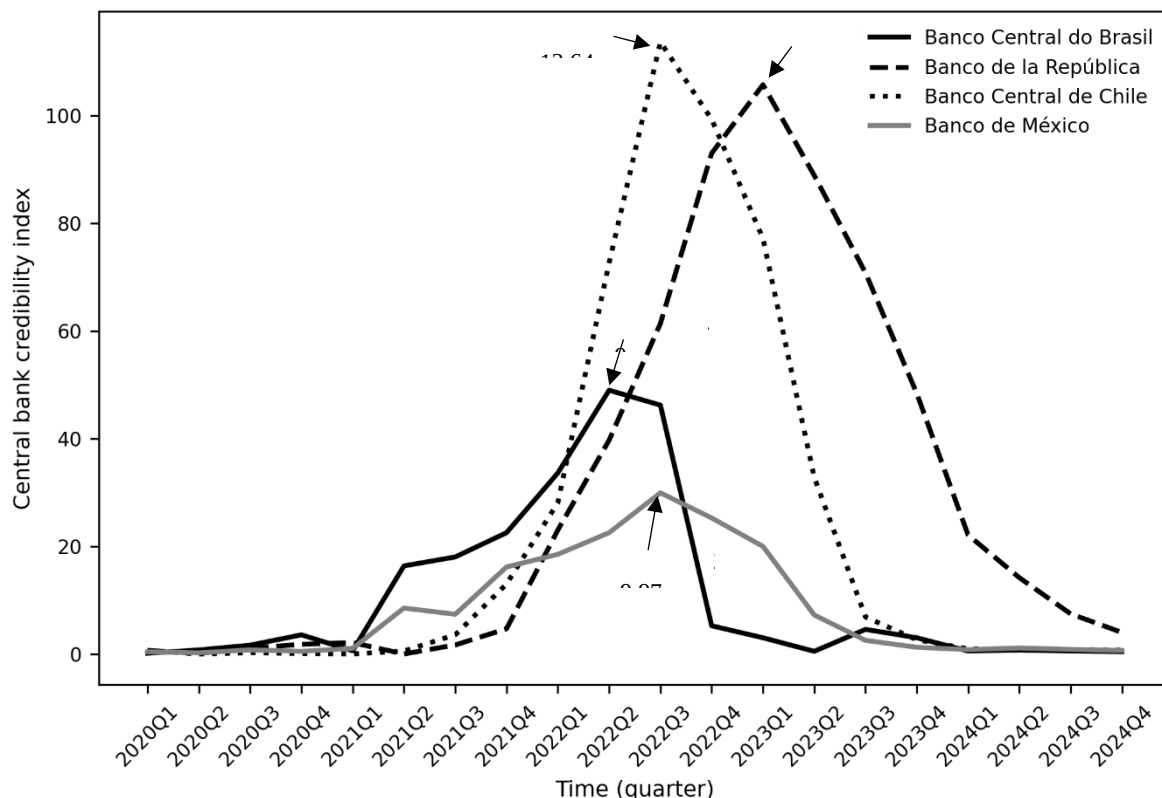
Prameň: Vlastné spracovanie

V prípade BCCh je vývoj kredibility charakteristický výrazným nárastom CREDt počas globálnej finančnej krízy, ktorý signalizuje významné odchýlenie inflačných očakávaní od inflačného cieľa centrálnej banky. Hodnota indexu dosiahla v tomto období maximum na

úrovni 41,18 (pozri grafy 1; 2; 3 a tabuľku 2), čo predstavuje najvyššiu krízovú hodnotu spomedzi všetkých analyzovaných centrálnych bánk, keďže BanRep dosiahla maximum 14,12, Banxico 10,10 a BCB 3,24. Tento vývoj možno interpretovať v kontexte špecifickej zraniteľnosti čilskej ekonomiky voči externým šokom, keďže krajina patrí medzi najviac otvorené ekonomiky regiónu a jej cenová dynamika je úzko previazaná s vývojom globálnych komoditných trhov, predovšetkým cien medi ako kľúčového exportného artiklu. Výrazný pokles cien komodít a zhoršenie globálnych finančných podmienok počas rokov 2008 – 2009 viedli k výrazným výkyvom výmenného kurzu a k zvýšenej volatilita inflácie, čo mohlo oslabiť ukotvenie inflačných očakávaní. Zároveň bola menová politika BCCh v tomto období nútená reagovať rýchlym uvoľnením podmienok s cieľom stabilizovať reálnu ekonomiku, čo mohlo prispieť k dočasnému rozchodu očakávaní s cieľovou trajektóriou inflácie. Výrazný nárast CREDt tak odráža kombináciu externého komoditného šoku, kurzových efektov a zvýšenej makroekonomickej neistoty, ktorá bola v prípade Čile počas globálnej finančnej krízy mimoriadne intenzívna. Tento vývoj možno interpretovať ako dôsledok dočasného stabilizačného efektu rýchlej reakcie menovej politiky BCCh a krátkodobého zlepšenia globálneho sentimentu po najakútnejšej fáze finančnej paniky na prelome rokov 2008 – 2009. Centrálna banka v tomto období pristúpila k výraznému uvoľneniu menových podmienok, čo mohlo prispieť k dočasnému opätovnému priblíženiu inflačných očakávaní k cieľu a k prechodnému zníženiu CREDt. Následný opätovný nárast indexu v druhej polovici roka 2009 však naznačuje, že ukotvenie inflačných očakávaní zostávalo krehké. Dvojvrcholový charakter indexu tak odráža postupné šírenie krízového šoku v čase, pričom krátkodobá stabilizácia bola následne vystriedaná ďalšou epizódou zvýšenej neistoty a inflačných odchýlok. Počas nasledujúcej dekády sa kredibilita centrálnej banky udržiavala na relatívne vysokých úrovniach, s výnimkou obdobia 2014Q2 – 2016Q2, kedy dochádza v prípade BCCh k opätovnému zvýšeniu CREDt, hoci rozsah tohto nárastu nebol tak výrazný ako pri BCB a BanRep. Tento vývoj možno interpretovať v kontexte zhoršenia externého prostredia a oslabenia domácej makroekonomickej dynamiky, ktoré ovplyvnili ukotvenie inflačných očakávaní. Kľúčovým faktorom bol najmä výrazný pokles cien medi na svetových trhoch, ktorá predstavuje dominantnú exportnú komoditu Čile. Zhoršenie komoditných podmienok obchodu viedlo k spomaleniu hospodárskeho rastu a zároveň k oslabeniu výmenného kurzu chilského pesa. Kurzová depreciácia sa následne premietla do vyšších dovozných cien a zvýšila inflačné tlaky, čo mohlo spôsobiť, že inflačné očakávania ekonomických agentov sa začali odchyľovať od inflačného cieľa centrálnej banky. Zároveň sa v tomto období prejavila zvýšená globálna volatilita spojená s normalizáciou menovej politiky v USA a neistotou na rozvíjajúcich sa trhoch, čo ďalej zvyšovalo citlivosť očakávaní v malých otvorených ekonomikách ako Čile. Nárast CREDt tak odráža epizódu čiastočného oslabenia ukotvenia inflačných očakávaní v prostredí kombinácie komoditného šoku, kurzových pohybov a zvýšenej externej neistoty. Na rozdiel od Brazílie a Kolumbie však bola reakcia kredibility v Čile miernejšia, čo možno pripísať dlhodobu silnému inštitucionálnemu rámcu menovej politiky BCCh a relatívne vyššej dôvere v režim inflačného cielenia. Výraznejšie zvýšenie hodnoty CREDt nastalo až v pandemickom období, kedy dosiahol najvyššiu úroveň v rámci výskumnej vzorky a to konkrétne hodnotu 113,64 (pozri grafy 1; 2; 4 a tabuľku 3). Tento vývoj odráža výrazné oslabenie ukotvenia inflačných očakávaní v prostredí kombinácie pandemických šokov, expanzívnych fiškálnych a menových opatrení a následného silného rastu inflácie. Pandemická epizóda v Čile bola špecifická tým, že popri samotnom zdravotnom šoku a narušení globálnych dodávateľských reťazcov zohrali významnú úlohu aj rozsiahle domáce fiškálne stimuly a mimoriadne opatrenia na podporu príjmov domácností. Táto kombinácia expanzívnej fiškálnej politiky, uvoľnených menových podmienok a následného postpandemického oživenia sa premietla do výrazného zrýchlenia inflácie, pričom ukotvenie inflačných očakávaní sa začalo postupne oslabovať. Výsledný nárast CREDt tak odráža epizódu oslabeného ukotvenia

očakávaní v prostredí, kde pandemický šok nebol len externým narušením ponuky, ale aj výrazným domácim dopytovým impulzom. Obnova kredibility si preto vyžadovala následné sprísnenie menovej politiky a postupnú stabilizáciu inflačných očakávaní v ďalších kvartáloch. V posledných častiach sledovaného obdobia je však možné pozorovať stabilizáciu a návrat kredibility na predkrízovú úroveň.

Graf 4: Kredibilita centrálnych bánk Latinskej Ameriky počas pandémie Covid-19 (2020 – 2024)



Pozn.: Graf zobrazuje krízové obdobie (pandémia Covid-19), v rámci ktorého sú vyznačené lokálne maximá indexu CREDt.

Prameň: Vlastné spracovanie

V prípade Banxico pozorujeme vývoj kredibility, ktorý je v porovnaní s ostatnými centrálnymi bankami vo výskumnom súbore charakteristický relatívne vyššou stabilitou, avšak s výraznými epizódami oslabenia v období systémových šokov. Bezprostredne po vypuknutí globálnej finančnej krízy dochádza k zvýšeniu CREDt až na úroveň 10,10 (pozri grafy 1; 2; 3 a tabuľku 2), čo signalizuje zhoršenie ukotvenia inflačných očakávaní v prostredí výrazného poklesu globálnej ekonomickej aktivity a zhoršenia finančných podmienok. Tento nárast bol však miernejší než v prípade Čile, čo možno interpretovať v kontexte silnejšej inštitucionálnej pozície Banxico a dlhšej histórie menovo-politickej dôveryhodnosti v režime inflačného cielenia. Špecifikom Mexika počas globálnej finančnej krízy bola jeho výrazná väzba na ekonomický cyklus Spojených štátov, keďže výrazný pokles zahraničného dopytu a oslabenie exportu viedli k recesii a zvýšenej neistote. Napriek tomu sa inflačné očakávania neodchýlili od cieľa tak dramaticky ako v niektorých iných latinskoamerických ekonomikách, čo naznačuje, že Banxico dokázala v tomto období udržať relatívne priaznivé ukotvenie očakávaní. V nasledujúcich rokoch sa kredibilita Banxico postupne stabilizovala a CREDt sa pohyboval na relatívne nízkych úrovniach. Zvýšená volatilita sa však objavuje najmä v druhej polovici sledovaného obdobia, keď ekonomika čelila kombinácii externých cenových šokov,

výkyvov výmenného kurzu a rastúcej citlivosti inflačných očakávaní na vývoj cien potravín a energií, ktoré zohrávajú v mexickom spotrebnom koši významnú úlohu. Osobitne výraznejšia epizóda oslabenia kredibility nastáva v období rokov 2017Q2 – 2018Q4, keď CREDt vykazuje citel'ný nárast. Tento vývoj možno interpretovať v kontexte zvýšenej makroekonomickej neistoty spojenej s renegociáciou dohody NAFTA (neskôr USMCA), ktorá vyvolala volatilitu finančných trhov a tlak na depreciaáciu mexického pesa. Súčasne sa v tomto období prejavili aj domáce faktory, najmä liberalizácia cien pohonných hmôt a rast cien energií, ktoré prispeli k zrýchleniu inflácie a k dočasnému oslabeniu ukotvenia inflačných očakávaní od cieľa Banxico. Banxico zároveň v reakcii na tieto inflačné tlaky pristúpila k relatívne rýchlemu sprísňovaniu menovej politiky prostredníctvom postupného zvyšovania kľúčových úrokových sadzieb, čo prispelo k opätovnému ukotveniu inflačných očakávaní a k poklesu CREDt v nasledujúcom období po roku 2019. Najvýraznejší zlom nastáva počas pandémie Covid-19, keď CREDt výrazne rastie a dosahuje najvyššie hodnoty počas sledovaného obdobia na úrovni 29,97 (pozri grafy 1; 2; 4 a tabuľku 3), čo avšak predstavuje najnižšiu hodnotu lokálneho maxima počas pandemickej krízy v rámci výskumnej vzorky. Najnižšiu hodnotu lokálneho maxima CREDt v období pandémie Covid-19 v prípade Banxico možno interpretovať ako odraz relatívne silnejšieho ukotvenia inflačných očakávaní v Mexiku v porovnaní s ostatnými ekonomikami výskumnej vzorky. Banxico vstupovala do pandemickej epizódy s dlhodobo etablovaným režimom inflačného cielenia a vyššou reputáciou v oblasti cenovej stability, čo prispelo k tomu, že oslabenie ukotvenia inflačných očakávaní ekonomických agentov bolo v prostredí bezprecedentného šoku menšie než v Brazílii, Kolumbii či Čile. Zároveň Banxico reagovala v postpandemickej fáze relatívne rýchlo sprísňovaním menovej politiky, pričom postupné zvyšovanie úrokových sadzieb pomohlo obmedziť sekundárne inflačné efekty a podporilo skoršie opätovné ukotvenie očakávaní. Výsledkom bola síce viditeľná strata kredibility počas pandémie, avšak jej intenzita bola v porovnaní s ostatnými analyzovanými krajinami nižšia. Maximálna hodnota CREDt dosiahla v prípade Banxico úroveň 29,97 (pozri grafy 1; 2; 4 a tabuľku 3), zatiaľ čo pri BCCh a BanRep presiahla hodnoty 100. V postpandemickej fáze sa následne kombinácia vysokých cien energií, narušených dodávateľských tokov a rastúcej domácej cenovej dynamiky premietla do výrazného odklonu inflačných očakávaní od cieľa Banxico. Napriek tomu Banxico patrila medzi prvé centrálné banky regiónu, ktoré pristúpili k sprísňovaniu menovej politiky v reakcii na rastúcu infláciu, čo prispelo k postupnému znižovaniu CREDt v posledných kvartáloch sledovaného obdobia na predkrízovú úroveň.

Počas globálnej finančnej krízy sa reakcie kredibility analyzovaných centrálnych bánk v Latinskej Amerike výrazne líšili. Najvýraznejšia strata kredibility bola identifikovaná v prípade BCCh, kde lokálne maximum CREDt dosiahlo hodnotu 41,18 (pozri grafy 1; 2; 3 a tabuľku 2), čo poukazuje na výrazný odklon inflačných očakávaní od cieľa v prostredí silných externých komoditných a kurzových šokov. Naopak, najmiernejšiu reakciu zaznamenala BCB, pri ktorej index počas globálnej finančnej krízy kulminoval len na úrovni 3,24 (pozri grafy 1; 2; 3 a tabuľku 2), čo naznačuje relatívne stabilnejšie ukotvenie inflačných očakávaní v brazílskej ekonomike v porovnaní so zvyškom vzorky. BanRep a Banxico sa nachádzali medzi týmito pólmi, keď zaznamenali citel'nejší nárast indexu než BCB, avšak bez extrémnych hodnôt pozorovaných pri BCCh, konkrétne na úrovniach 14,12 v prípade BanRep a 10, pri Banxico. Tento vývoj poukazuje na rozdielnú mieru ukotvenia inflačných očakávaní, ako aj na odlišné štrukturálne charakteristiky jednotlivých ekonomík, najmä z hľadiska expozície voči externým finančným a komoditným šokom.

Heterogénnosť vývoja kredibility počas globálnej finančnej krízy sumarizuje aj tabuľka 2, ktorá prezentuje maximálne hodnoty CREDt v krízovom období. Tieto maximá umožňujú identifikovať centrálné banky, pri ktorých bol odklon inflačných očakávaní od inflačného cieľa najvýraznejší, a tým kvantifikovať rozsah straty kredibility v reakcii na šok globálnej finančnej krízy.

Tabuľka 2: Maximum CREDt počas globálnej finančnej krízy

<i>Názov centrálnej banky</i>	<i>Skratka centrálnej banky</i>	<i>Maximum</i>
Banco Central do Brasil	BCB	3,24
Banco de la República	BanRep	14,12
Banco Central de Chile	BCCh	41,18
Banco de México	Banxico	10,10

Prameň: Vlastné spracovanie

Pandémia Covid-19 predstavovala plošnejší a intenzívnejší šok než globálna finančná kríza, pričom vo všetkých analyzovaných ekonomikách došlo k výraznému nárastu CREDt. Najvýraznejšie oslabenie kredibility sa počas pandemickej epizódy prejavilo v Čile, kde BCCh dosiahla najvyššiu hodnotu lokálneho maxima indexu v rámci vzorky na úrovni 113,64 (pozri grafy 1; 2; 4 a tabuľku 3), čo poukazuje na výrazný odklon inflačných očakávaní od cieľa v prostredí silných ponukových obmedzení a následného inflačného zrýchlenia. Veľmi podobnú intenzitu straty kredibility zaznamenala aj BanRep, kde lokálne maximum CREDt dosiahlo hodnotu 105,69 (pozri grafy 1; 2; 4 a tabuľku 3), pričom tento vývoj možno spájať s kombináciou importovaných cenových šokov, pohybov výmenného kurzu a zvýšenej citlivosti domácej inflácie na ceny energií a potravín. BCB vykázala v pandemickom období nižšiu hodnotu lokálneho maxima indexu ako BCCh a BanRep avšak aj tu došlo k citelnému oslabeniu kredibility v dôsledku výraznej volatility menového kurzu, expanzívnej fiškálnej reakcie a postpandemických inflačných tlakov, kedy lokálne maximum dosiahlo úroveň 49 (pozri grafy 1; 2; 4 a tabuľku 3). Naopak, Banxico vykazovalo najnižšiu hodnotu lokálneho maxima indexu počas pandémie na úrovni 29,97 (pozri grafy 1; 2; 4 a tabuľku 3), čo možno interpretovať ako výsledok relatívne konzistentného menovo-politického rámca a skoršej reakcie Banxico sprísnením menovej politiky. Celkovo tento vývoj potvrdzuje, že kredibilita centrálnych bánk v latinskoamerickom regióne je výrazne časovo premenlivá a citlivá na veľké externé šoky, pričom rozdiely medzi krajinami odrážajú heterogénnosť menových režimov, fiškálnych pozícií a historickej dôveryhodnosti menovej politiky. Tabuľka 3 poskytuje súhrnný prehľad

o intenzite oslabenia kredibility počas pandémie Covid-19 prostredníctvom maximálnych hodnôt CREDt v pandemickom období. Tieto maximá umožňujú porovnať, pri ktorých centrálnych bankách došlo k najvýraznejšiemu oslabeniu ukotvenia inflačných očakávaní a k najväčšej strate kredibility v reakcii na pandemický šok.

Tabuľka 3: Maximum CREDt počas pandémie Covid-19

<i>Názov centrálnej banky</i>	<i>Skratka centrálnej banky</i>	<i>Maximum</i>
Banco Central do Brasil	BCB	49
Banco de la República	BanRep	105,69
Banco Central de Chile	BCCh	113,64
Banco de México	Banxico	29,97

Prameň: Vlastné spracovanie

Veľmi vysoké hodnoty CREDt pozorované počas pandemickej epizódy sú do značnej miery výsledkom kvadratickej penalizácie väčších odchýlok inflačných očakávaní od

inflačného cieľa. Tieto hodnoty preto zachytávajú mimoriadnu intenzitu oslabenia ukotvenia očakávaní v podmienkach bezprecedentných šokov a zvýšenej makroekonomickej neistoty. Ich interpretačný význam spočíva predovšetkým v relatívnej komparácii medzi jednotlivými krajinami a v identifikácii období najvýraznejšieho oslabenia kredibility, skôr než v doslovnom posudzovaní absolútnej úrovne indexu.

Celkovo výsledky potvrdzujú, že kredibilita centrálnych bánk vo vybraných ekonomikách Latinskej Ameriky má výrazne časovo premenlivý charakter a je vysoko citlivá na veľké externé makroekonomické a finančné šoky. Zároveň sa ukazuje, že rozsah straty kredibility sa naprieč krajinami podstatne líši, čo odráža heterogénnosť menových režimov, fiškálnych pozícií a historickej dôveryhodnosti menovej politiky v rámci latinskoamerického regiónu.

Záver

Cieľom príspevku bolo zhodnotiť vývoj kredibility vybraných centrálnych bánk Latinskej Ameriky v období 2008 – 2024 a porovnať jej dynamiku počas dvoch zásadných krízových epizód, konkrétne globálnej finančnej krízy a pandémie Covid-19. Kredibilita bola kvantifikovaná prostredníctvom indexu založeného na odchýlkach inflačných očakávaní s horizontom dvoch kvartálov od časovo premenlivých inflačných cieľov centrálnych bánk, pričom metodika zohľadňuje tolerančné pásmo okolo cieľa a nelineárnu penalizáciu väčších odchýlok.

Empirické zistenia poukazujú na výraznú heterogenitu reakcií naprieč analyzovanými ekonomikami. Počas globálnej finančnej krízy bola najvýraznejšia strata kredibility identifikovaná pri Banco Central de Chile (Čile), čo je konzistentné s vysokou citlivosťou malej otvorenej ekonomiky na externé finančné a komoditné šoky. Naopak, Banco Central do Brasil (Brazília) zaznamenala v tejto epizóde najmiernejší nárast indexu, čo naznačuje priaznivejšie ukotvenie inflačných očakávaní v podmienkach relatívne priaznivého komoditného cyklu a stabilizačnej hospodárskej politiky v bezprostrednom postkrízovom období. Banco de la República (Kolumbia) a Banco de México (Mexiko) sa nachádzali medzi uvedenými pólmi, pričom ich vývoj odrážal kombináciu kurzových kanálov, externých šokov a dôveryhodnosti menovo-politického rámca.

Pandémia Covid-19 predstavovala v porovnaní s globálnou finančnou krízou intenzívnejší a plošnejší zásah do kredibility centrálnych bánk, keďže maximálne hodnoty CREDt vo všetkých analyzovaných ekonomikách výrazne prevýšili úroveň zaznamenanú počas globálnej finančnej krízy. Vo všetkých analyzovaných krajinách došlo k výraznému nárastu indexu, pričom najvyššie maximá boli zaznamenané pri Banco Central de Chile (Čile) a Banco de la República (Kolumbia). Tento výsledok je konzistentný s kombináciou globálnych ponukových obmedzení, kurzových pohybov a domácich dopytových impulzov, ktoré v niektorých prípadoch výrazne urýchlili oslabenie ukotvenia inflačných očakávaní. Banco de México (Mexiko) vykazovala najnižšiu maximálnu hodnotu indexu počas pandemickej epizódy, čo možno interpretovať ako prejav relatívne konzistentného menovo-politického rámca a včasnejšieho sprísňovania menovej politiky v porovnaní s časťou regiónu.

Z metodologického hľadiska je potrebné zdôrazniť, že veľmi vysoké hodnoty indexu v pandemickom období sú prirodzeným dôsledkom kvadratickej penalizácie veľkých odchýlok. Index je preto vhodné čítať predovšetkým ako relatívny ukazovateľ intenzity straty kredibility v čase a medzi krajinami, nie ako mieru s priamou „úrovňovou“ interpretáciou. Získané výsledky sú v súlade s empirickou literatúrou, ktorá zdôrazňuje význam ukotvenia inflačných očakávaní ako kľúčového indikátora kredibility centrálnej banky. Levin et al. (2004) poukazujú na to, že v ekonomikách s vyššou kredibilitou sú inflačné očakávania stabilnejšie a menej citlivé na krátkodobé šoky, zatiaľ čo v prostredí nižšej dôvery dochádza k ich výraznejšiemu odchýleniu od cieľa. Podobne Ehrmann (2015) zdôrazňuje význam menovo-politickej

komunikácie ako nástroja stabilizácie očakávaní, pričom poukazuje na to, že nedostatočná alebo nekonzistentná komunikácia môže prispieť k oslabeniu kredibility najmä v období zvýšenej neistoty. Tento pohľad dopĺňajú Coibion et al. (2018), ktorí empiricky dokumentujú, že menovo-politická komunikácia má významný vplyv na formovanie inflačných očakávaní ekonomických subjektov, najmä na úrovni domácností. Výsledky tejto štúdie sú zároveň konzistentné so zisteniami Bordo & Siklos (2015), ktorí dokumentujú časovo premenlivý charakter kredibility a jej citlivosť na krízové epizódy aj vo vyspelých ekonomikách. V porovnaní s týmito regiónmi však latinskoamerické ekonomiky vykazujú vyššiu volatilitu indexu kredibility a výraznejšie extrémne hodnoty, čo možno pripísať kombinácii historicky slabšie ukotvených inflačných očakávaní, vyššej expozície voči externým šokom a väčšej úlohe kurzového kanála transmisie menovej politiky. Dopĺňajúco, De Grauwe (2012) a Blinder et al. (2008) poukazujú na to, že kredibilita centrálnej banky je úzko prepojená s dôveryhodnosťou jej záväzkov a schopnosťou konzistentne reagovať na makroekonomické výzvy, čo sa v podmienkach rozvíjajúcich sa ekonomík môže prejavovať výraznejšími výkyvmi v ukotvení inflačných očakávaní. Tieto zistenia naznačujú, že hoci základné mechanizmy formovania kredibility sú univerzálne, ich intenzita a dynamika sú výrazne determinované štrukturálnymi charakteristikami jednotlivých ekonomík.

Z pohľadu hospodárskej politiky výsledky podporujú záver, že udržiavanie ukotvenia inflačných očakávaní zostáva kľúčovým predpokladom účinného transmisného mechanizmu menovej politiky v prostredí opakujúcich sa externých šokov typických pre latinskoamerický región.

Pri interpretácii výsledkov je potrebné zohľadniť aj určité metodologické obmedzenia použitého indexu kredibility. Index je založený na odchýlkach inflačných očakávaní od inflačného cieľa, pričom implicitne predpokladá, že tieto očakávania sú spoľahlivým a homogénnym ukazovateľom dôvery v menovú politiku. V praxi však môžu byť inflačné očakávania ovplyvnené aj faktormi mimo priamej kontroly centrálnej banky, ako sú globálne cenové šoky, fiškálna politika alebo vývoj výmenného kurzu. Ďalším obmedzením je citlivosť indexu na extrémne hodnoty v dôsledku kvadratickej penalizácie, ktorá môže viesť k výraznému nárastu indexu v obdobiach vysokej volatility, čo sťažuje jeho interpretáciu v absolútnom vyjadrení. Index zároveň nezachytáva kvalitatívne aspekty kredibility, ako sú menovo-politická komunikácia, reputácia inštitúcie alebo dôvera verejnosti, ktoré môžu zohrávať významnú úlohu pri formovaní inflačných očakávaní. Napriek týmto obmedzeniam však zvolený prístup poskytuje konzistentný a komparatívny rámec na analýzu dynamiky kredibility v čase a medzi krajinami.

Budúci výskum môže nadviazať rozšírením vzorky o ďalšie krajiny, zapojením alternatívnych mier inflačných očakávaní a hlbším rozlíšením úlohy fiškálnej politiky a kurzového kanála pri obnove kredibility po krízových epizódach.

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