Original Scientific Paper/Originalni naučni rad UDC/UDK: 316.334.56:352
Paper Submitted/Rad primljen: 16.10.2024.
Paper Accepted/Rad prihvaćen: 28.01.2025.
DOI: 10.5937/SJEM2501049M

Primjena PDCA ciklusa u kreiranju i razvoju brenda grada

Mirjana Miljanović[1]

[1]University of East Sarajevo, Faculty of Production and Management Trebinje

Apstrakt: Ovaj rad predstavlja primjenu PDCA ciklusa (Planiraj-Uradi-Provjeri-Djeluj), kao metodološkog pristupa u kreiranju i razvoju Brenda grada. Faze PDCA ciklusa su prilagođene procesu brendiranja grada, kroz četiri ključna koraka. Faza planiranja (Planiraj), obuhvata analizu imidža grada, identifikaciju ciljnih korisničkih grupa i definisanje strategije brenda. Druga faza (Uradi) fokusira se na implementaciju strategije, uključujući razvoj vizuelnog identiteta i sprovođenje marketinških kampanja. U trećoj fazi (Provjeri), mjeri se uspjeh napora u brendiranju prikupljanjem povratnih informacija i analizom tržišta. Završna faza (Djeluj), usmjerena je na kontinuirano prilagođavanje i unapređenje strategije brenda, na osnovu dobijenih rezultata. Predložena primjena PDCA ciklusa omogućava sistematsko upravljanje procesom brendiranja, prilagođeno dinamičnim promjenama i potrebama različitih korisničkih grupa. Na teorijskom nivou, ovo istraživanje pruža okvir za dalja istraživanja u oblasti upravljanja brendom, posebno u pogledu efikasnosti različitih modela upravljanja. Istraživanje ukazuje da gradske vlasti i menadžeri Brenda, treba da razmotre primjenu PDCA ciklusa, kao alat za kontinuirano unapređenje svojih strategija brendiranja.

Ključne riječi: PDCA ciklus, brendiranje grada, lokalni razvoj, korisnici usluga grada, kontinuirano unapređenje.

Application of the PDCA cycle to the creation and development of a city brand

Abstract: This paper presents the application of the PDCA cycle (Plan-Do-Check-Act) as a methodological approach in the creation and development of a city brand. The stages of the PDCA cycle are adapted to the city branding process through four key steps. The planning phase (Plan) involves the analysis of the city's image, identification of target user groups, and defining the brand strategy. The second stage (Do) focuses on the implementation of the strategy, including the development of a visual identity and execution of marketing campaigns. In the third phase (Check), the success of the branding efforts is measured through feedback collection and market analysis. The final stage (Act) is aimed at continuous adjustment and improvement of the brand strategy based on the obtained results. The proposed application of the PDCA cycle allows for systematic management of the branding process, tailored to dynamic changes and the needs of different user groups.At a theoretical level, this research provides a framework for further studies in the field of brand management, particularly regarding the efficiency of various management models. The research indicates that city authorities and brand managers should consider the application of the PDCA cycle as a tool for the continuous improvement of their branding strategies.

Keywords: PDCA cycle, city branding, local development, city service users, continuous improvement.

1. Introduction

Economic growth and the development of production depend on innovation and the spread of knowledge, which drive the transformation of local production systems. Local firms are key to introducing innovations into development processes, and the knowledge accumulated within organizations forms the foundation for progress (Miljanović, 2016).

Strong cities-brands-play a crucial role in global economic development, attracting foreign investments and enhancing their nations. Their ability to recognize changes in both internal and external environments, through local economic plans, enables the building of a city brand, creating conditions for the implementation of development strategies.

A city, as a system with a complex structure, stochastic nature, dynamic, open, and with real functional characteristics, will be viewed through the lens of a process approach. This approach allows for an understanding of the city not only as a static entity but as an organism in constant interaction with its environment. This emphasizes the importance of continuous processes that shape its development, including economic, social, and cultural dynamics, which together define the city as a changing and complex whole. The application of the PDCA (Plan-Do-Check-Act) cycle to the building and development of a city brand can be understood as a key process framework that enables continuous improvement and adaptation in line with changes in the city's internal and external environments. The PDCA cycle, consisting of phases of planning, implementation, result checking, and adjustment, can be related to various aspects of city development and branding.The PDCA cycle is an important part of quality management theory. It represents the core idea of total quality management, divided into four phases: Plan, Do, Check, and Act (Xiao et al., 2024).

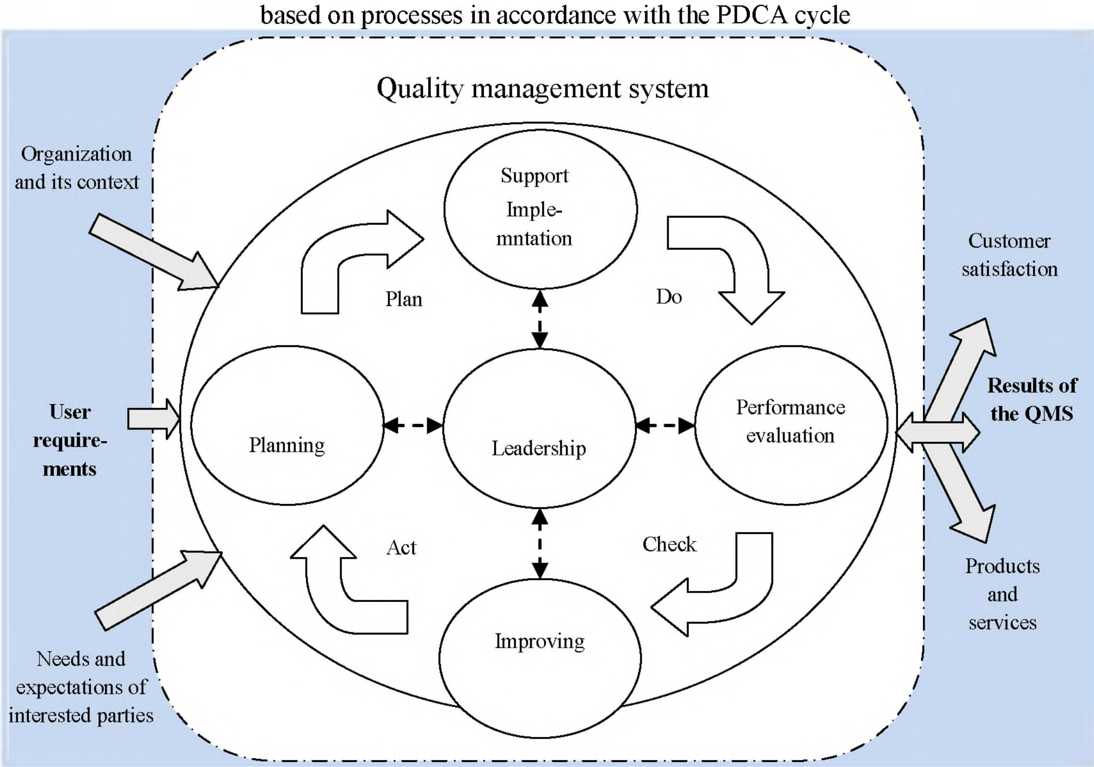
This study provides a theoretical framework for the application of the PDCA cycle in the city branding process, highlighting its potential for long-term development and brand recognition. Further research will focus on the empirical verification of the effectiveness of this methodological approach to determine how much the PDCA cycle contributes to the optimization of branding strategies and enables city authorities and experts to better understand market dynamics and user needs.

2. The PDCA cycle

The PDCA cycle, also known as the Deming cycle, is a key concept in Lean Manufacturing, first developed in the 1930s by Walter A. Shewhart and later refined by William Edward Deming in the 1950s (Realyvásquez-Vargas et al., 2018). PDCA stands for Plan, Do, Check, Act, emphasizing problem-solving without assuming pre-determined solutions.

The Planning phase involves setting SMART goals and creating a detailed plan to meet them. In the Do phase, the plan is tested on a small scale, allowing for controlled implementation and data collection, identifying potential issues (Gray, 2021). The Check phase evaluates the results, comparing actual outcomes with expectations, determining if changes are effective and sustainable (Hock et al., 2024). The iterative nature of PDCA enables continuous improvement, and in the Act phase, successful changes are standardized. If the results are unsatisfactory, the cycle begins anew with adjustments (Protzman et al., 2022).

Figure 1: Schematic representation of the quality management system model based on processes in accordance with the PDCA cycle



Source: (SRPS ISO 9001:2015)

PDCA is widely applied across industries to improve management, processes, and products due to its systematic, adaptable nature (Ružičić & Micić, 2020). The cycle aligns with the ISO 9001:2015 standard, which emphasizes process management and interaction through the PDCA framework (Vučurević, 2023), representing a shift from a functional to a process-oriented quality management approach, Figure 1.

The Deming Circle provides a systematic approach to continuous improvement. If expected results are not achieved after a cycle, a new cycle should begin with an improved plan based on accumulated knowledge from previous cycles. Identifying and managing processes within an organization forms the foundation of the principles of process approach.

3. City Branding

Cities, as complex social organizations, can be analyzed from various angles, including spatial, economic, cultural, and social relations. City branding focuses management on broader urban issues, aiming for long-term competitiveness and sustainable community development within a wider market context.

City branding is increasingly important as cities recognize the need to promote themselves as brands, not just to residents but also to businesses and visitors. Research explores both online and offline city branding, seeking to understand how visitors perceive cities and gather information (Molina et al., 2017). Efforts include creating a favorable city image through visuals, storytelling, and events to gain a competitive edge (Boisena et al., 2018).

City branding has three key dimensions: physical attributes like logos or architecture, functional attributes such as business opportunities and cultural activities, and personality traits tied to emotional and cultural connections (Li X, 2017). These dimensions work together to foster positive relationships between the city and its target audience, encouraging engagement (Alhamari et al., 2022).

City branding is also a dialogue between governments and residents, aiming to build public support for political structures and governance (Budnitsky & Jia, 2018). Social participation plays a key role in achieving branding goals (Kolotouchkina & Seisdedos, 2018). While assessing quality of life can be challenging, city rankings still impact competitiveness, making it essential for administrations to emphasize the city's benefits (Portugal, 2019).

4. Research methodology

The research methodology in this paper is centered on the development of the PDCA cycle as a model for the systematic construction and development of a city brand, as detailed in the doctoral dissertation by Miljanović (2016). This model was designed to continuously adapt branding strategies to various target groups (residents, tourists, businesses, investors), thus enhancing the city's recognition and competitiveness in the market. Miljanović's dissertation provides a theoretical foundation for applying the PDCA cycle in city brand management, enabling strategic development based on evaluations and improvements.

The PDCA (Plan-Do-Check-Act) cycle serves as a tool for the continuous improvement of the branding process through four key phases: planning, implementation, monitoring, and evaluation, followed by strategy adjustment. The methodological approach in this paper follows these steps:

Planning: in this phase, strategic branding goals for the city are defined, the needs of target groups (residents, tourists, businesses) are analyzed, current city image research is conducted, and opportunities for positioning are identified;

Implementation: this phase focuses on executing branding through concrete activities, such as developing visual identity, marketing campaigns, and city promotions. The defined strategies are put into action;

Checking: in this phase, the effectiveness of the implemented activities is evaluated using various quantitative and qualitative methods (e.g., surveys, statistical analyses);

Acting: based on the evaluation results, strategies are adjusted, incorporating necessary improvements and innovations to enhance branding effectiveness and sustainability in the long term.

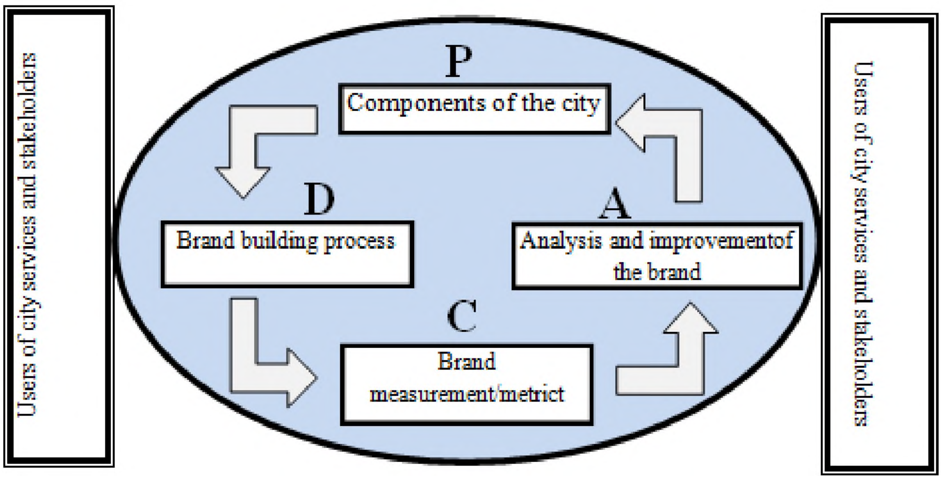
The goal of this methodology is to foster a flexible and adaptive approach to city branding that continuously aligns with the changing needs and expectations of users. This contributes to the long-term strengthening of the brand and its impact on local economic development. The cyclical nature of the model allows cities to consistently evaluate and improve their branding strategies, enhancing the city's image, recognition, and attractiveness as a destination for investment, tourism, and living.

Cities that regularly implement the PDCA approach to branding become more competitive in attracting investments, residents, and tourists compared to those that do not adopt such a methodology. From this methodological foundation, we can infer that applying the PDCA cycle in city branding leads to better alignment of strategies with target groups (residents, tourists, businesses, investors) and that continuous adaptation of city brand strategies based on PDCA evaluations enhances the city's competitiveness in attracting investments, residents, businesses, and tourists.

4.1 Application of the PDCA Cycle to Brand Building and Development

The application of the PDCA cycle (Plan-Do-Check-Act) to the construction and development of a city brand can be explained through four key stages, Figure 2 (Miljanović, 2016).Starting from user requirements on both sides of the model, the PDCA cycle applied to city branding processes is outlined. Effective collaboration between users and employees is essential to create a city brand that reflects genuine user satisfaction. A strategic analysis of the city's characteristics, focusing on the basic needs of urban service users, provides a foundation for branding. This includes considering the expectations of residents, tourists, the economy, and investors.

Figure 2: PDCA cycle applied to the city brand-building processes



Source: (author)

Residents prioritize job opportunities, cost of living, infrastructure, education, healthcare, environmental preservation, and quality of life. Tourists value recreation, hospitality, cultural and natural attractions, and city authenticity. The economy requires efficient public services, fair management, and financial and non-financial support, while investors seek qualified human resources, business-friendly regulations, and well-equipped investment locations. Based on these needs, the branding opportunities for Trebinje will be explored.Figure 2. - PDCA cycle applied to the city brand-building processes.

Plan

In the model, city branding develops through interconnected processes, considering fundamental components like infrastructure, institutions, economy, natural environment, and attractions.

The planning phase involves defining the needs of urban service users, assessing the city’s identity and image, and setting brand development goals. This includes:

Research and analysis: conducting SWOT and PEST analyses, and gathering GIS data to assess the city's current state.

Target group identification:defining key demographics like tourists, investors, and business owners, and developing the city's positioning strategy;

Brand strategy: forming a strategy based on brand mission and value, focusing on what users truly want, and prioritizing actions to achieve branding goals.

Do

This phase involves the process of building the city's brand, which requires time, dedication, and perseverance. Giffin notes that successful branding relies on building strong, lasting relationships based on trust and consistency. Key steps include:

Understanding core attributes: identifying the products and services the city offers and anticipating the needs of target users;

Developing a visual identity: creating a logo, slogan, colors, and other visuals that represent the brand's values;

Marketing and promotion:developing and executing a marketing plan through social media, events, and fairs, involving professionals to align with the city's goals and vision;

Community collaboration: engaging residents and businesses through workshops and joint events to strengthen the brand.

Check

In this phase, progress is monitored and evaluated against established goals, which includes:

Data collection: employing quantitative and qualitative methods (such as surveys, social media analysis, and visitor statistics) to assess branding effectiveness. Various methods exist for calculating a city's brand value, allowing for evaluation of its image, strength, and overall value. This assessment highlights the role of cities in local economic development, though evaluating a city's brand is more complex than that of a business due to the wide array of services and revenues involved. Brand value, while intangible, can be gauged by analyzing consumer attitudes and market behaviors, along with financial indicators;

Evaluation of results: comparing the outcomes with the set goals to determine branding success and areas needing improvement. Measuring brand value is a complex process that involves analyzing current conditions and dynamic changes to forecast future trends. Key elements from the consumer perspective include market recognition, image, affinity, and awareness, which help understand the brand's competitive position, identify weaknesses, and outline developmental directions for enhancing business operations.

Act

This phase emphasizes proactive actions based on the findings from the checking phase, aiming to enhance the city branding strategy. Key steps include:

Updating the strategy: The strategy is revised based on evaluation results to better align with the target audience's needs and expectations while considering new market trends and competitive activities. This may involve redefining priorities, altering marketing approaches, or targeting new market segments;

Implementing improvements: Specific measures are introduced to strengthen the brand based on identified opportunities and weaknesses. This could involve launching new campaigns, innovating service offerings, improving visual identity, or collaborating with partners to enhance the city's recognition. Implementation should be systematic and focused to positively influence brand perception and value;

Continuous improvement: Brand development is an ongoing process requiring constant adaptation and refinement. In this phase, the city fosters a culture of continuous learning and innovation through regular result analysis, environmental monitoring, and readiness to adapt. This dynamic approach ensures the brand's long-term sustainability and relevance in a changing market.

Applying the PDCA cycle to city brand development provides a systematic method for effective planning, implementation, and evaluation of branding activities. This approach aids in identifying and addressing issues, as well as adjusting strategies based on feedback, contributing to the long-term success and recognition of the city brand.

5. Discussion

Based on the theoretical application of the PDCA cycle in city branding, several key conclusions can be drawn that may guide future research and testing of this model:

Increased brand recognition: Cities that systematically implement the PDCA cycle across all brand development stages (planning, implementation, evaluation, and improvement) are likely to achieve higher recognition among target groups. Continuous strategy adjustments can enhance responsiveness to environmental changes and user needs, leading to an improved city image;

Flexibility of branding strategies: The PDCA model fosters greater flexibility in adapting to market changes. Cities that effectively incorporate feedback from the evaluation phase can respond swiftly to competitive pressures and shifts in consumer behavior, keeping their branding strategies dynamic and competitive over the long term;

Long-term economic impact: Cities with a strong brand, built through the PDCA model, may experience positive economic outcomes, such as increased tourism and investment, enhanced perceptions as attractive places to live and work, and greater local community involvement. These insights suggest that the PDCA cycle can strengthen the city brand while directly contributing to economic development;

Role of visual identity and marketing: During the implementation phase of the PDCA model, developing a visual identity and strategic marketing is crucial for successful branding. Cities that maintain a consistent visual identity and execute marketing campaigns through various channels (social media, events, promotional activities) can expect higher engagement and favorability from their target audience.

These conclusions provide a foundation for further research and empirical testing of the PDCA model in city branding, aiming to validate theoretical insights with practical examples.

6. Conclusion

Based on the application of the PDCA cycle to city brand development, it can be concluded that successful branding requires a comprehensive and systematic approach focused on continuous improvement and strategy adaptation. This cycle allows cities to effectively plan, implement, monitor, and adjust brand-related activities, offering flexibility to respond to the changing needs and expectations of various user groups—residents, tourists, businesses, and investors.

The PDCA model's primary strength lies in its ability to help city authorities identify improvement opportunities, respond swiftly to market changes, and adjust strategies according to actual user needs. Cities adopting this model can enhance their image and recognition, making them more attractive for living and business, which in turn supports long-term economic development.

In the initial phase, strategic planning helps understand needs and lays the groundwork for a strong brand. The implementation phase highlights the importance of consistency in visual identity, marketing, and community engagement. The evaluation phase allows for objective monitoring of progress and identification of areas for improvement. The final phase of the PDCA cycle emphasizes taking action based on insights gained, adjusting strategies, and promoting continuous enhancement.

The next step after applying the PDCA cycle is to focus on the "Act" phase, where strategies should be updated based on prior results. This includes implementing specific improvements and continuously monitoring progress to adapt strategies to current user needs and market trends. Strengthening the brand can be achieved through new marketing campaigns, enhanced visual identity, and increased community involvement. This ongoing process ensures that the city brand remains relevant and competitive.

Such an approach positions city branding as a dynamic process that evolves with changes in the environment and user needs, fostering a sustainable and enduring brand that contributes to local and regional development.

This study adds to the literature on city branding, especially regarding the application of the PDCA cycle. Theoretically, it provides a framework for further research in brand management, particularly concerning the effectiveness of different management models. The findings suggest that city authorities and brand managers should consider the PDCA cycle as a tool for continuously improving their branding strategies.

Literature

1. Alahmari AM, Li XL, Schivinski B. (2022). Personality traits and city branding: Examining religious belief in authentic stakeholder engagement. International Place Branding Association. 2022: 119
2. Belabas W, Eshuis J, Scholten P. (2020). Re-imagining the city: branding migration-related diversity. European Planning Studies. 28(7):1315–32.
3. Boisen, M., Terlouw, K., Groote, P., &Couwenberg, O. (2018). Reframing place promotion, place marketing, and place branding-moving beyond conceptual confusion. Cities, 80, 4–11. https://doi.org/10.1016/j.cities.2017.08.021.
4. Budnitsky S, Jia L. (2018). Branding Internet sovereignty: Digital media and the Chinese–Russian cyberalliance. European Journal of Cultural Studies, 21(5):594–613.
5. Carrera Portugal, A. (2019). The role of city rankings in local public policy design: Urban competitiveness and economic press. Global Media and China, 4(2), 162–178. https://doi.org/10.1177/2059436419853892.
6. Czarnecka B, Schivinski B. (2019). Do consumers acculturated to global consumer culture buy more impulsively? The moderating role of attitudes towards and beliefs about advertising. Journal of Global Marketing, 32(4):219–38.
7. Fabián H. N. Díaz (2024). City Branding as a Determining Factor for City Marketing, RGSA – Revista de Gestão Social e Ambiental, 18(2), 1- 16, https://doi.org/10.24857/rgsa.v18n2-099.
8. Gray, D. E. (2021). Doing research in the real world. Doing research in the real world, 1-100.
9. He, W., Deng, L., Zeng, X., &Zhang,L. (2020) PDCA circulation in the prevention of clinical rust effect observation. American Journal of Nursing Science, 9 (3), 6764-6765. https://doi.org/10.11648/j.ajns.20200903.20.
10. Ho Song, M., & M. Fischer, (2020). Daily plan-do-check-act (PDCA) cycles with level of development (LOD) 400 objects for foremen. Advanced Engineering Informatics, 44(C), 5520-5521. https://doi.org/10.1016/j.aei.2020.101091.
11. Hock H. D., Amalina, N., Muhammad, N. (2024). Synergizing FMEA and PDCA for superior risk management and process improvement in the semiconductor industry: a case study. International Journal of Production Management and Engineering, 12(2), 180-19https://doi.org/10.4995/ijpme.2024.21469
12. Hong C., Ping W., Qi J. (2022). Analysis of the Application Effect of PDCA Cycle Management Combined With Risk Factor Management Nursing for Reducing Infection Rate in Operating Room.J .Front Surg, 9: 837014.
13. Johnston KA. (2018).Toward a theory of social engagement. The handbook of communication engagement. 1:19–32.
14. Kolotouchkina O, Seisdedos G. (2018). Place branding strategies in the context of new smart cities: Songdo IBD, Masdar and Skolkovo. Place Branding and Public Diplomacy, 24(2):115–24.
15. Koudela P. (2024). Good Stories Overwrite Creativity: The Three Eras Of City Competition. Creativity Studies 17(2), 395-406, https://doi.org/10.3846/cs.2024.16671

16. Kurnia, H., Jaqin, C., &Purba, H. H. (2022). The PDCA approach with OEE methods for increasing productivity in the garment industry. JurnalIlmiah Teknik Industri, 10(1), 57-68.
17. Li X(Leah), Alahmari A, Schivinski B. (2024). Place branding: Religion in shaping the three-dimensional essence of a city brand through stakeholder engagement. PLoS ONE 19(1): e0296162. https://doi.org/10.1371/journal. pone.0296162
18. Li X. (2017). From Beijing to Rio: rebranding China via the modern Olympic Games. The Journal of International Communication, 23(2):252–71.
19. Lundholt MW, Jørgensen OH, Blichfeldt BS. (2020). Intra-organizational brand resistance and counter-narratives in city branding–a comparative study of three Danish cities. Qualitative Market Research, 23(4), 1001- 1018. https://doi.org/10.1108/QMR-01-2018-0012
20. Miljanović M., (2016), Modelizgradnje brenda kao odrednice privrednog razvoja, doktorska disertacija, Univerzitet u Novom Sadu, Fakultet tehničkih nauka.
21. Molina, A., Fernández, A. C., Gómez, M., & Aranda, E. (2017). Differences in the city branding of European capitals based on online vs. offline sources of information. Tourism Management, 58, 28-39. doi: http://dx.doi.org/10.1016/j.tourman.2016.10.005
22. Patfield, S., Gore, J., & Harris, J. (2023). Shifting the focus of research on effective professional development: Insights from a case study of implementation. Journal of Educational change, 24(2), 345-363. https://doi.org/10.1007/s10833- 021-09446-y
23. Protzman, C., Whiton, F., &Kerpchar, J. (2022). Sustaining Lean: Creating a Culture of Continuous Improvement. CRC Press. https://doi.org/10.4324/9781003186090
24. Qinfeng L., Tan M. (2024). Application Evaluation and Analysis of PDCA Cycle Quality Management in RICU Instrument and Equipment Management Academic Journal of Management and Social Sciences 7(3), 103- 106.
25. Realyvásquez-Vargas, A., Arredondo-Soto, K. C., Carrillo, T., & Ravelo, G. (2018). Applying the PDCA cycle to reduce the defects in the manufacturing industry. A case study. Preprints.https://doi.org/10.20944/preprints201810.0347.v1
26. Ružičić, V. S., Micić, Z. M. (2020). Knowledge management assessment using PDCA based in global and local standards: In the case of technics and informatics studies. KSII Transactions on Internet and Information Systems (TIIS), 14(5), 2022-2042. https://doi.org/10.3837/tiis.2020.05.009
27. SRPS ISO 9001:2015, https://www.academia.edu/23758678/SRPS_ISO_9001
28. Usman, I &Windijarto. (2019). Developing green operations to minimize energy consumption by PDCA cycle of iso 50001. A case study with delphi method approach. Journal of Security and Sustainability Issues, 9(May), 451-459. https://doi. org/10.9770/jssi.2020.9.M(34)
29. Vučurević R. (2023). Upravljanjekvalitetompraćenjemstabilnostiisposobnostiprocesa,Trebinje:Univerzitet u IstoFakultet za proizvodnjuimenadžment Trebinje
30. Xiao Z., Li H., Yuan X, et al. (2024). The Application of PDCA Cycle Theory Combined with Subjective and Objective Empowerment Method in Teaching Quality Assessment System of Higher Vocational Colleges and Universities. J. Applied Mathematics and Nonlinear Sciences, 9(1). https://doi.org/10.2478/amns-2024-1581.
31. Xiaoming K., Xiaolu Z., Yidan Z. (2021). The application of plan, do, check, act (PDCA) quality management in reducing nosocomial infections in endoscopy rooms: It does work. J .Int J Clin Pract, 2021, 75: e14351.