EXPLORING REVENUE GENERATION MECHANISM IN MOBILE APPLICATIONS: AN ANALYSIS OF MONETIZATION METHODS
IEŅĒMUMU ĢENĒŠANAS MEHĀNISMA IZPĒTE MOBILĀS LIETOTNĒS: MONETIZĀCIJAS METOŽU ANALĪZE

Urtė Mikučiūnaitė
Kauno Kolegija Higher Education institution, urte.mik729@go.kauko.lt, Kaunas, Lithuania
*Scientific supervisor Mg. **Aistė Lastauskaitė***

Abstract. *These days, the world is constantly changing: various innovations, digitization, and new business models are rapidly developing in every country. However, the focus is mostly on digitization, where efforts are made to eliminate physical information providers and transfer all knowledge to the electronic space. As a result, most young entrepreneurs choose to start businesses by using mobile applications, but just a few delve into how these apps can generate income. The aim of this article is to analyze seven main business strategies to generate money, which are app sales, in-app purchases, in-app advertising, subscription models, freemium model, affiliate marketing, and data monetization that individuals can employ to generate income from mobile apps. Using the method of literature source analysis, it was determined that the monetizing method from apps depends on the purpose and type of the application, making it impossible to highlight the best income generation method. Therefore, it is crucial for young entrepreneurs to recognize that understanding how programs generate income is not only beneficial in personal life but also essential for developing business skills for the future.*
Keywords: *mobile apps, business, money generation, revenue, monetization.*

Introduction

A mobile app or a mobile application, is a software application designed to run on mobile devices such as tablets or smartphones and mobile applications can be downloaded from platforms such as app stores. In today's world mobile apps have become integral to daily life, providing convenient access to information *(Ally et al., 2014)*. That is why over the years, the number of mobile apps has been increasing, which means that a larger number of people are choosing to create apps. Especially young people are increasingly choosing to start their own business with the development of mobile applications *(Jayaram et al., 2015)*. Because they are often well acquainted with the latest technologies and the mobile market is large and diverse, this gives young business owners a chance to reach a large audience. Therefore, apps developers also have the opportunity to implement their ideas, experiment with it and find solutions *(Shahrasbi et al., 2021)*. However, young people may be inclined to take note only of entertainment forgetting about the fact that many mobile apps are developed with business goals. In other words, there are various ways of how mobile applications can make money.

This research aim to analyze the various strategies for mobile app monetization, providing insights into the main methods that developers can employ to generate income from their applications.

Specifically, the study seeks to achieve the following tasks:
1. Identify Monetization Strategies: Analyze the primary methods available for generating revenue through mobile applications, including in-app purchases, subscriptions, advertising, and premium features.
2. Compare Effectiveness of Strategies: Evaluate the effectiveness of these monetization methods in terms of revenue potential and user engagement.
3. Provide Recommendations**:** Offer practical recommendations tailored for young entrepreneurs looking to successfully monetize their mobile apps.

This research was conducted over a period of six months, from November 2023 to April 2024. The research method used was scientific literature, which provided a variety of relevant information and insights on the topic.

The main strategies for generating income with mobile apps

Creating a business involves addressing prevalent societal issues and incorporating values that attract consumers *(Barauskaite & Streimikiene, 2021).* However, the primary goal of business creation is always to generate profit. Mobile application developers are no exception, as they continually strive to remain profitable, leading to an increase in income-generating methods in mobile application development. Consequently, digital marketing becomes more competitive *(Veleva & Tsvetanova, 2020).* There are seven main ways to earn money from mobile applications: app sales, in-app purchases, in-app advertising, subscription models, freemium model, affiliate marketing, and data monetization *(Tang et al., 2019; Haines & Hanssen, 2013; Ravoniarison & Benito, 2019, Mattke et al. 2021; Graham et al., 2021; Sharma & Sijaryja, 2023; Panda, 2020; Ivkovic & Milanov, 2010; Ofulue & Benyoucef, 2022).* In this section, these methods are examined, outlining their advantages and disadvantages.

First strategy is **the App sales** model means that the app developer charges users to download the application *(Deng et al., 2023).* In other words, this is the paid app business model, where users must first purchase the app from the app store. According to Tang, Zhang and Akram *(2019),* the one – time fee for the app business model has its own set of advantages and disadvantages.

Pros:
- Higher revenue per download.
- Higher perceived value.
- More loyal users.
  Cons:
- Less downloads.
- Less exposure.
- Less effective for brand building.

However, the decision to charge for an app depends on the specific circumstances of the business behind it. That is why it is important to note the above points are generalizations and may not apply to every app.

The second strategy is **in-app purchasing.** It is another monetization model that allows developers to sell content within the app after a user has downloaded and installed the application *(Haines & Hanssen, 2013)* This implies that users can initially download an app for free, but to access additional features, such as a new skin for a game gun or more lives to continue game, they need to make a purchase. In-app purchase allow developers to generate additional revenue, and increased financial resources empower developers to create higher-quality games *(Ravoniarison & Benito, 2019).* In other words, as developers enhance their businesses, they simultaneously fulfil the needs of consumers. However, as noted by Ravoniarison and Benito *(2019),* there are downsides to this model, including user dissatisfaction. For instance, users may feel constantly bombarded with in-app purchase options which makes users think they spend too much, potentially leading to the loss of clients. Overall, the in-app purchase business model can be lucrative way for developers to monetize their apps, but it requires careful consideration of the benefits and downsides before implementation.

Third one is **in-app advertising** strategy of sales that businesses use to advertise their product within an app for users *(Mattke et al. 2021).* To put it another way, in-app advertising is the ads people see while playing mobile games or surfing through social media and so on. According to Mattke et al. *(2021),* apart from playable ads, there are few more in-app ads formats:
- **Interstitial video ads**: this type of ads persist until a predefined interval concludes.
- **Rewarded video ads**: users can earn virtual gifts or money, or unlock secret level by watching the ad.

- **Pre-roll ads**: these are short ads that are automatically played before the main video.
- **Banners ads**: these are image ads displayed on website or app, at the top, bottom or sides of the interface.

In-app advertising is one of the most effective way to monetize a mobile apps and allow various brands to reach the target audience for more sales or downloads *(Graham et al., 2021)*. Nevertheless, disadvantage of this business model is that consumers can use ad blockers to block ads from appearing. All in all, the in-app advertising model has more than one ad format, which helps reach broader target audience and increase profit.

Forth strategy i**s a subscription** business model that involves a recurring system where consumers pay a weekly, monthly, or yearly fee in exchange for products or services. This revenue generation model allows businesses to concentrate on customer needs and enjoy the benefit of retaining consumers for future sales *(Sharma & Sijaryja, 2023)*. In addition, as noted by Sharma and Sijaryja *(2023),* the subscription model operates quite simply: customers are charged on a recurring basis for a service and they have the flexibility to choose how long they want to receive an offer (see Figure 1). Furthermore, most subscriptions services offer the option to cancel or renew at any time.
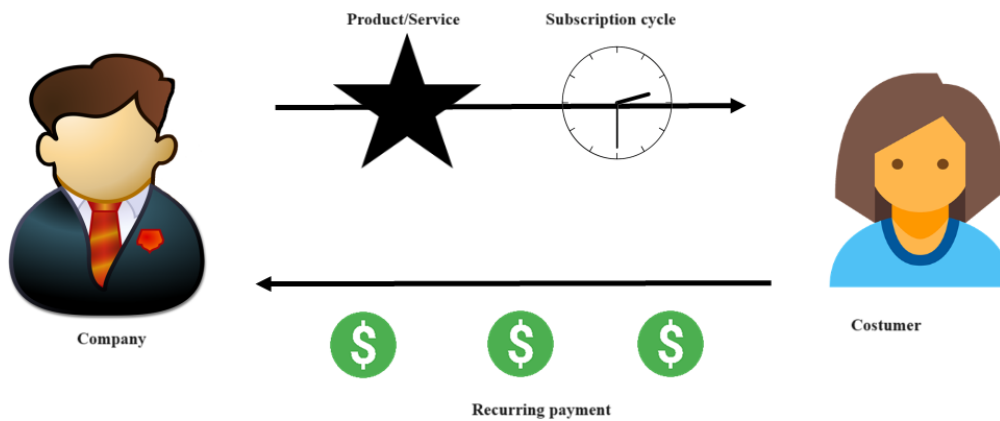

Figure 1. **Subscription model** *(compiled by authors from Sharma & Sijaryja, 2023)*

This model has been successfully employed by companies such as Netflix and Microsoft. The benefits of using this model include: steady revenue stream, customer loyalty, and flexibility, because it can be customized to meet needs of different businesses *(Sharma & Sijaryja, 2023)*. However, like any revenue generation model, subscription models have their own set of disadvantages. The main challenge is customer churn, where customers may choose to cancel their subscription if they are dissatisfied with the services, resulting in a loss of business revenue *(Sharma & Sijaryja, 2023).* In general, the subscription model is an excellent way to cultivate relationships with consumers and to establish a steady revenue stream.

Fifth one i**s the Freemium model,** as outlined by Panda *(2020),* this strategy involves offering basic app functions for free, while certain features are unlocked for a fee. For instance, Spotify employs the freemium revenue model. Users can enjoy free access to music, but their experience is interrupted by commercials and have limited skips. If users opt for the premium subscription, they gain unrestricted access, allowing them to listen any song they want without interruptions. Other successful companies, such as LinkedIn and Eventbrite, have also embraced the freemium model. However, Holm and Gunzel-Jensen *(2017)* note that many online digital companies view freemium as a potentially costly trap. According to their findings, successful freemium companies thrive through continuous innovation and a focus on growth. The case of Travel Crony serves as an example where innovative iPad travel app creators struggled to attract users and ultimately failed in the market. In essence, sustaining excellent

value for both free and premium users is essential for the success of the freemium model. The advantages and disadvantages of fermium, as highlighted by Holm and Gunzel-Jensen *(2017)*, depend on the value the business idea offers to consumers. Overall, in today's digital market, the freemium revenue model presents a real competition. Young entrepreneurs face the task of offering a valuable and robust deal to both free and premium consumers, a proposition that can attract huge crowd and has not yet been delivered by firmly established companies in the digital market.

Sixth strategy is **the affiliate marketing,** according to Ivkovic and Milanov *(2010)*, it is one of the most common techniques to promote products, services or web sites, and affiliates (publishers or marketers) are rewarded for every customer who came because of their marketing skills. This implies that people get paid for their performance of advertising other businesses. Ivkovic and Milanov *(2010)* highlighted the summed-up system of affiliate marketing:

- An affiliate endeavors to drive potential customers to a merchant's website by utilizing ad links
- Among these visitors, some engage in actions to completing a sale.
- The merchant then compensates the affiliate for each of these required actions that lead to successful sale of a specific product or service, and these actions can be tracked back to the affiliate (see Figure 2).
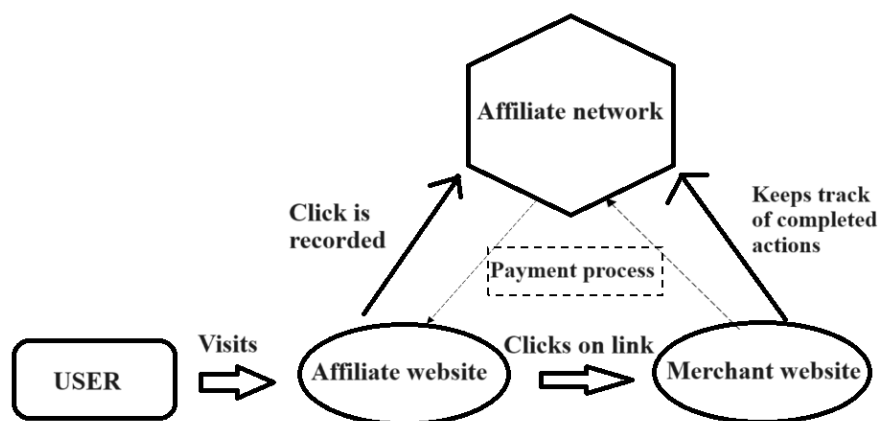

Figure 2. **Affiliate marketing process** *(compiled by authors from Ivkovic & Milanov, 2010)*

A provider of mobile service needs to have a clear idea about what the aims of the company are, and carefully prepare a plan and solution with long-term results before entering an affiliate marketing program because there are many mobile service providers that already have brand recognition and strong reputation *(Ivkovic & Milanov, 2010)*. The advantages of affiliate marketing include cost-effective, the broad reach of target audience, passive income potential, and diverse income streams. However, there are challenges, such as constant competitions, and the interdependence between affiliates and merchants. To sum up, the success of affiliate market depends on relationship between affiliates and merchants, products or services quality, and especially effective marketing strategies or performances.

Lastly there is **data monetization** and this method involves organizations deriving financial benefit in exchange for sharing their data and information assets *(Ofulue & Benyoucef, 2022).* According to her findings, large corporations like Facebook, Apple, and Amazon concentrate on business models centred about data, using it to create new services or products, enhance customer experiences, and in the process, generate extra streams of revenue. In simple terms, data monetization involves gathering and selling user data while ensuring compliance with privacy regulations. As Ofulue and Benyoucef *(2022)* noted, the primary goal of this business model is to either reduce operational costs or generate revenue by selling data. In the analysis of Ofulue's and Benyoucef's *(2022)* academic article, the advantages and disadvantages of data monetization are clearly highlighted (see Figure 3).
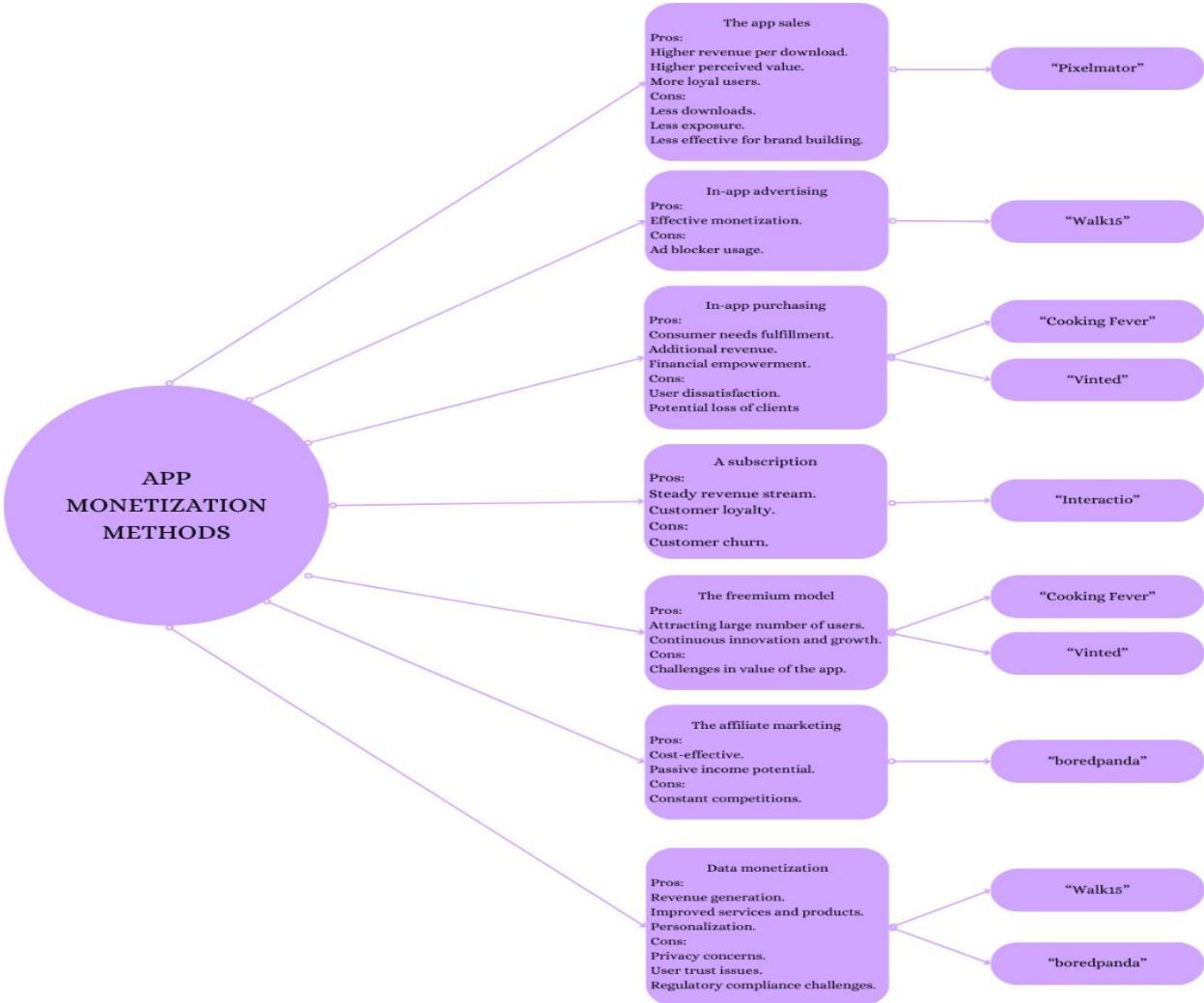

Figure 3. **Comparison of methods that generate revenue from mobile apps and examples** (*compiled by authors*)

Advantages:
- Revenue generation.
- Improved services and products.
- Personalization.
  Disadvantages:
- Privacy concerns.
- User trust issues.
- Regulatory compliance challenges.

Overall, it is crucial for app developers and businesses to prioritize user privacy and comply with relevant data protection regulations to ensure ethical data monetization and successfully get financial benefits.

Comparison of the advantages and disadvantages of money generation methods, as well as examples of Lithuanian applications and start-ups:

In addition, there is another source of money created to fund business ideas. It is called crowdfunding. The main function is financing new ideas or existing ventures *(Böckel et al., 2020)*. In simpler terms, people contribute money to these companies, and in return, the companies promise to give back the investment through their products or services. It means that, entrepreneurs, using their own business idea, can also create an application that facilitates crowdfunding, enabling businesses to secure the necessary funds.

Furthermore, crowdfunding serves as a platform to connect with potential partners or like-minded individuals. However, according to Mora-Cruz and Palos-Sanchez *(2023)*, contributors face the risk of losing their money if a project fails in a process, entrepreneurs face intense competitions for attention, and there is always a pressure to deliver because even smallest delays can lead to dissatisfaction among investors (see Figure 4).
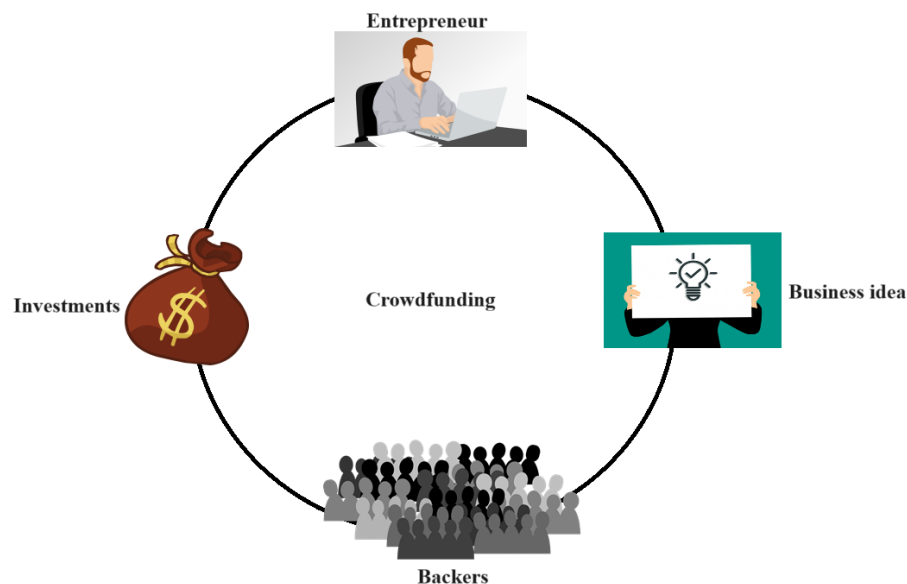

Figure 4. **Crowdfunding process** *(compiled by authors from Böckel et al., 2020)*

In general, crowdfunding helps entrepreneurs raise the necessary funds for their projects, however, it is crucial not to forget that the initial success of a project is not guaranteed in the future.

In conclusion, these income-generating methods in mobile apps underscores the competitive nature of digital marketing, urging developers to navigate the balance between financial success and delivering value to consumers. Analyzed revenue strategies have their own advantages and disadvantages that's why it is necessary to analyze these methods in detail. Moreover, to successfully adapt the most effective income-generating method for the app it depends on the function performed by the application.

Conclusions

The use of mobile apps extends beyond entertainment, as they have become business models that generate income. In this research examined seven main business strategies to generate money, which are app sales, in-app purchases, in-app advertising, subscription models, freemium model, affiliate marketing, and data monetization allows entrepreneurs dive deeper

into today's digital world. However, all these methods require thorough analysis before being applied in practice with the newly created app because each method has its advantages and disadvantages. It is impossible to determine the best money-making method in an app since it depends on the type of the application. In other words, the mobile app is like a lock, and the methods of generating revenue are like keys, but this does not mean that applications cannot adapt more than one method: one app can have three or more ways how to generate money, based on its design, purpose, and target audience.

It is also mentioned that successful mobile app cannot rely solely on money – making methods; in other words, the app must offer value to consumers. Young entrepreneurs must analyze the digital market: what is the demand of users for the new application, whether it solves customer's problem, and what the competition is in the market. Only after that, they can finalize the idea of the new app, its operational strategy, eye – catching design and revenue generation model. Only by thoroughly analyzing digital marketing and fully refining the business idea can entrepreneurs launch the application into the market. However, it is essential not to forget to regularly implement update, check the metrics system, and provide new proposals in the future that can contribute to the growth of revenue.

These mentioned processes not only allows entrepreneurs to get more profit but it also entails evaluating the app value for consumers and addressing their specific needs.

Bibliography

1. Ally, M., Grimus, M., & Ebner, M. (2014). Preparing Teachers for a Mobile World, to Improve Access to Education. *Prospects*, 44, 43-59. https://doi.org/10.1007/s11125-014-9293-2
2. Barauskaite, G., & Streimikiene, D. (2021). Corporate Social Responsibility and Financial Performance of Companies: The Puzzle of Concepts, Definitions and Assessment Methods. *Corporate Social Responsibility and Environmental Management*, *28*(1), 278-287. https://doi.org/10.1002/csr.2048
3. Böckel, A., Hörisch, J., & Tenner, I. (2021). A Systematic Literature Review of Crowdfunding and Sustainability: Highlighting What Really Matters. *Management review quarterly*, 71, 433-453. https://doi.org/10.1007/s11301-020-00189-3
4. Deng, Y., Lambrecht, A., & Liu, Y. (2023). Spillover Effects and Freemium Strategy in the Mobile App Market. *Management Science*, 69(9), 5018-5041. https://doi.org/10.1287/mnsc.2022.4619
5. Graham, C., Young, F., & Marjan, A. (2021). The Generation Z Audience for in-App Advertising. *Journal of Indian Business Research*, 13(3), 343-360. https://doi.org/10.1108/JIBR-08-2020-0275
6. Haines, J. C., & Hanssen, A. (2013). *In-Application Payment from Mobile Apps: A study of In-App Payment* (Master's thesis, Institutt for datateknikk og informasjonsvitenskap). https://ntnuopen.ntnu.no/ntnu-xmlui/handle/11250/253437
7. Holm, A. B., & Günzel-Jensen, F. (2017). Succeeding with Freemium: Strategies for Implementation. *Journal of Business Strategy*, 38(2), 16-24. https://doi.org/10.1108/JBS-09-2016-0096
8. Ivkovic, M., & Milanov, D. (2010). Affiliate Internet Marketing: Concept and Application Analysis. *International Conference on Education and Management Technology*, 319-323. https://doi.org/10.1109/ICEMT.2010.5657647
9. Jayaram, D., Manrai, A. K., & Manrai, L. A. (2015). Effective Use of Marketing Technology in Eastern Europe: Web Analytics, Social Media, Customer Analytics, Digital Campaigns and Mobile Applications. *Journal of Economics, Finance and Administrative Science*, 20(39), 118-132. https://doi.org/10.1016/j.jefas.2015.07.001
10. Mattke, J., Maier, C., Reis, L., & Weitzel, T. (2021). In-app Advertising: A Two-Step Qualitative Comparative Analysis to Explain Clicking Behaviour. *European Journal of Marketing*, 55(8), 2146-2173. https://doi.org/10.1108/EJM-03-2020-0210
11. Mora-Cruz, A., & Palos-Sanchez, P. R. (2023). Crowdfunding Platforms: A Systematic Literature Review and a Bibliometric Analysis. *International Entrepreneurship and Management Journal*, 19, 1257–1288. https://doi.org/10.1007/s11365-023-00856-3
12. Ofulue, J., & Benyoucef, M. (2022). Data Monetization: Insights from a Technology-Enabled Literature Review and Research Agenda. *Management Review Quarterly*, 74, 521-565. https://doi.org/10.1007/s11301-022-00309-1
13. Panda, B. K. (2020). Application of Business Model Innovation for New Enterprises: A Case Study of Digital Business Using a Freemium Business Model. *Journal of Management development*, 3*9*(4), 517-524. https://doi.org/10.1108/JMD-11-2018-0314

14. Ravoniarison, A., & Benito, C. (2019). Mobile Games: Players' Experiences with in-App Purchases. *Journal of Research in Interactive Marketing*, 13(1), 62-78. https://doi.org/10.1108/JRIM-06-2016-0060

15. Shahrasbi, N. B., Jin, L., & Zheng, W. J. (2021). Design Thinking and Mobile App Development: A Teaching Protocol. *Journal of Information Systems Education*, *32*(2), 92-105. https://aisel.aisnet.org/jise/vol32/iss2/2/

16. Sharma, Y., & Sijariya, R. (2023). Uncovering the Trends and Developments in Subscription Business Models Through Bibliometric Analysis. *Journal of Service Theory and Practice*, 34(2), 242-269. https://doi.org/10.1108/JSTP-02-2023-0054

17. Tang, J., Zhang, B., & Akram, U. (2020). User Willingness to Purchase Applications on Mobile Intelligent Devices: Evidence from App Store. *Asia Pacific Journal of Marketing and Logistics*, *32*(8), 1629-1649. https://doi.org/10.1108/APJML-06-2019-0411

18. Veleva, S. S., & Tsvetanova, A. I. (2020). Characteristics of the Digital Marketing Advantages and Disadvantages. In *IOP Conference Series: Materials Science and Engineering*, 940(1), 012065. doi:10.1088/1757-899X/940/1/012065