Digital Banking in the Marketing Mix: Improving the Approach to Evaluation as an Innovative Component

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Abstract: The article substantiates that digital banking as an innovative component of the marketing mix is becoming more popular in the conditions of significant competition in financial markets. This determines the relevance of the study to improve the evaluation approach of digital banking. The research evaluates the activity of using digital banking in components of the marketing mix of Ukrainian banks, such as «product», «place», «promotion», and «price». The developed methodological approach is based on the analysis of traditional bank's marketing mix elements and their innovative components, mainly digital banking. It has been established that banks, offering a generally standard set of primary products, introduce product innovations quite unevenly. According to the «place» component of the marketing mix, it has been noted that the pace of traditional marketing replacement by banking innovations marketing is slow. Regarding the «promotion» component of the marketing mix, the distribution of the indicators of the bank's activity in the use of social networks is uneven. Facebook is more used than Instagram, and not all banks use YouTube's capabilities. Banks are market leaders that use social networks and the Internet most actively. According to the «price» component of the marketing mix, it is recommended for Ukrainian banks to focus on the rate of return on assets from commission income due to its lower risk, as well as the possibility of using an indirect indicator of the banking innovations efficiency in the marketing mix.
Keywords: digital banking, marketing mix, component, innovation, evaluation

1. Introduction

In conditions of the significant competition in the financial markets, digital banking and innovation are an urgent need for the stable development of the banking sector. Digital banking is becoming increasingly popular. According to Visa, mobile payments and online banking are used by almost 90% of residents of Turkey, Denmark, Norway, Sweden, and Israel. In Ukraine, about 50% of citizens use the Internet for banking operations. At the same time, the growth rate of digitalization of banking services in Ukraine is higher than in Europe – 7% per year against 3%. Innovative products of virtual spaces are currently in demand.
Digitalization poses severe challenges to existing business models and marketing activities of banks. The marketing mix of banks is becoming innovative. Therefore, research on the evaluation of the marketing mix needs attention given the high rate of digital banking development. The urgency is also since Ukraine has set a course for integration into the European digital space.

2. Literature review

Researchers pay considerable attention to current trends in the national banking sector development in many countries. In Ukraine, scientists mainly cover the problems of integration processes in the banking sector (Diatlova, 2019), the consequences of crisis phenomena (Zveryakov & Zherdetska, 2019), the risks of servicing export-import operations (Fokina-Mezentseva et al, 2020), competition with foreign banks (Diatlova et al, 2021). The issues of digital banking are less studied. Meanwhile, the total digitalization of products and services is a characteristic of the modern world economy. The banking sector is at the center of such processes.

Most banking innovations are related, namely, to digital banking. Lipton, Shrier and Pentland (2016) substantiates that digital banking has forever changed the relationship with consumers. Most scholars note the benefits of digital banking for marketing activities and financial results.

Megargel, Shankararaman and Reddy (2018) believe that digital banking allows real-time marketing, for example, to reach customers and partners through digital platforms. In the digital services market, banks can no longer compete solely on products that have become commercial. On the contrary, they must compete based on service differentiation. Marketing becomes even more effective in supporting business expansion and increasing a bank's income.

In the work of Bapat (2017), it was proved that digital banking contributes to the expansion of a multi-channel banking environment for customer interaction with the bank and has a positive effect on their loyalty. Garzaro, Varotto and Pedro (2020) investigated the impact of interactivity and social presence on interaction with the bank's customers. Researchers have found that these relationships affect customer satisfaction and loyalty, but there are differences between digital service channels (websites and applications).

A study by Mbama (2018) demonstrates how digital banking increases bank profitability. The results of the study show that attributes such as perceived value, convenience, quality of functionality, quality of services, and digital banking innovations are essential for improving customer satisfaction and loyalty, the financial performance of banks.

Csikósová, Čulková and Janošková (2016) and colleagues have tried to quantify the marketing performance of the banking sector and its effectiveness. The obtained data show a lag in the growth rate of loans compared to the overall growth rate of the market and the negative growth of customer profitability.

Acar and Temiz (2017) have established a positive relationship between advertising costs and financial indicators that increase over time (interest income, total operating income, and return on assets).

However, scientists, in particular Dermine (2016), draw attention to the threat posed by digital banking in the context of a long series of innovations in the banking sector, including telephone banking, payment cards, capital markets, the Internet, smartphones, and cloud computing. Researchers believe that digital banking is currently one of the main strategic challenges facing banks regarding threats and opportunities. In particular, it is necessary to address the issue of borrowers and investors protection, and the importance of the new players, the fintechs starts-up specialised in financial services.

Given the above mentioned, the study of digital banking as an innovative component of the banking marketing mix and the development of an approach to evaluating its use is relevant. It is important to establish a system of indicators to assess the effectiveness of digital banking.

3. Methodology

The article aims to enhance the approach to evaluating digital banking as an innovative component of the marketing mix and substantiate the relationship with performance indicators of banks.

It has to be noted that in the banking sector of Ukraine, there are still no methods for assessing marketing use. Usually, the effectiveness of marketing activities is assessed on the ratio of marketing costs and results in terms of sales or profits.

The developed methodological approach is based on analyzing both traditional elements of the marketing mix and its innovative components. All indicators were evaluated according to the information of the National Bank of Ukraine and the official websites of Ukrainian banks as of January 1, 2021. As of this date, the banking sector of Ukraine is represented by 75 banks, of which 5 are state-owned, 50 are private, and 20 are foreign.

To assess the component «product», the authors used indicators of the number of banking services, such as deposits to private customers, loans to private customers, business deposits, business loans, payment services, services in the sphere of foreign economic activity, card products, and other services. The innovative component of the «products» considers the number of services available through contactless communication channels (application, Internet banking, customer banking, mobile banking).

The indicators of the «place» component include quantitative indicators of branches,

mobile applications in the Play Market and their rating, and the number of ATMs and commercial POS terminals. Data on the number of bank branches are taken from the National Bank of Ukraine's official website and for applications (innovative component) – in the mobile device «Play Market».

To assess the «promotion» component, the authors used the cost of advertising according to bank reports, as well as such innovative components as page availability and rating on social networks (number of subscribers, preferences, views, searches) on Facebook, Instagram, YouTube, Twitter, Google.

To assess the innovative component of the «price» marketing mix, the indicators calculated from the official reporting of banks, such as borrowing value, placement cost, spread, net interest margin, commission income/assets, interest income/assets, and total return (sum of two recent indicators) were used.

4. Results and discussions

The analysis of scientific works shows that banks' introduction of remote customer service systems, particularly in the European market, took place in the late XX – early XXI century. Digital banking is a characteristic of modern banks' activities using digital technologies and social networks to convergence sales and communication channels.

It is believed that banking marketing as a branch type began to evolve in developed countries, including Western Europe, in the early '60s of the twentieth century. Evolutionary processes are due to the specifics of banking services as an object of sales in the market. Digital banking services are essentially new. Therefore, the study of digital banking marketing, its innovative components, and its evaluation approach is a new direction.
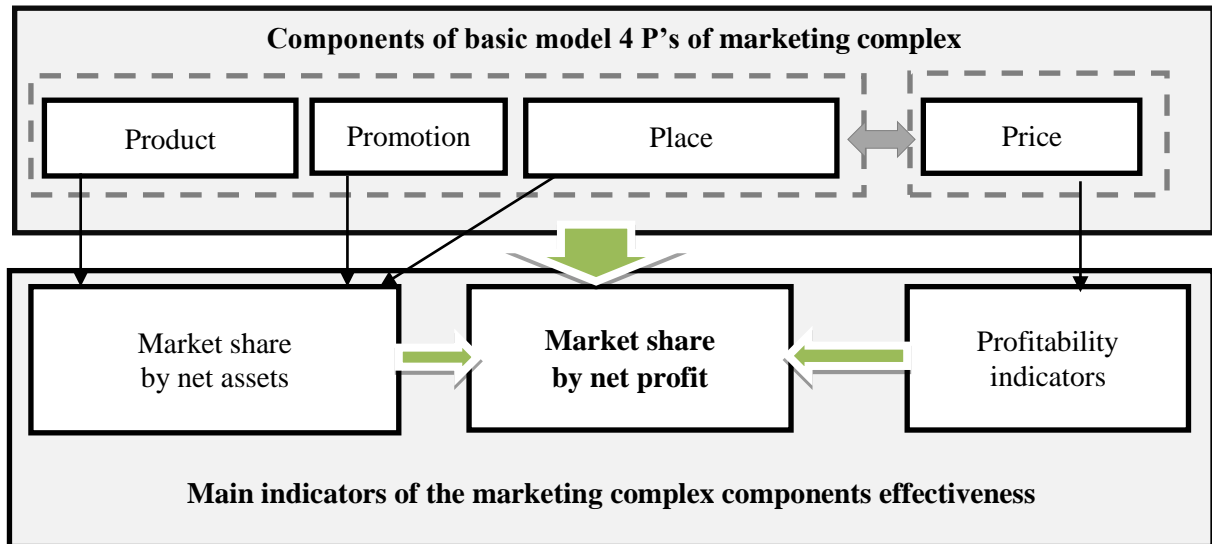
First of all, the authors studied the marketing mix of banks according to the basic model «4P» – product (product policy regarding banking services, their range, properties, quality), price (pricing policy regarding the cost of services, margins, discounts), place (distribution policy, distribution channels, competitive positions, staff), promotion (sales policy regarding promotion, advertising, sales promotion). It is vital to establish the connection between the components of the marketing complex and the leading indicators of the effectiveness of their use (Fig. 1).

The use of individual components of the marketing mix aims to maximize the bank's profit in the total profit of the banking services market. Firstly, such profit growth depends on the bank's market share and the number of customers, and secondly, on the profitability of banking services.

Among all the marketing mix components, only the price directly impacts the bank's profitability. Marketing components such as products, promotion, and place focus on increasing the number of customers and market share in specific market segments.

In the future, the evaluation of using specific components of the marketing mix of Ukrainian banks in the conditions of digital banking and the assessment of their impact on the leading indicators of banking efficiency are studied.

The results of statistical data processing for each component of the marketing mix indicate the following (Table 1).

Components of basic model 4 P's of marketing complex

Product	Promotion	Place	Price

Market share by net assets → **Market share by net profit** ← **Profitability indicators**

Main indicators of the marketing complex components effectiveness

**Fig. 1: Structural and logical scheme of the relationship
of the banking marketing mix components with the leading effectiveness indicators use**

Table 1: Results of statistical data processing for each component of the marketing mix of Ukrainian banks

Indicators	Statistical processing of indicators				
	Maximum	Minimum	Average value	Standard deviation	Coefficient of variation
1	2	3	4	5	6
Product					
Deposits to private clients, number per bank	15	1	4.31	1.53	0.36
Loans to private clients, number per bank	8	1	3.76	1.53	0.41
Business deposits, number per bank	12	1	3.71	1.35	0,36
Business loans, number per bank	30	2	7.39	3.38	0.46
Payments, number per bank	40	5	10,25	3.60	0.35
International transactions, number per bank	15	2	6.88	1.57	0.23
Cards, number per bank	40	5	10.71	3.56	0.33
Others, number per bank	13	4	7.11	1.46	0.21
Total	122	32	54.00	12.83	0.24
Innovative component	60	1	14.59	9.46	0.65
In percentage to the total	70.18	2.22	24.41	11.25	0.46
Place					
Number of branches, units	2327	0	106.67	139.10	1.30
Number of mobile applications in the Play Market, units	13	0	0.85	0.80	0.93
The rating of the application in the Play Market	4,9	0	1.78	1.70	0.95
Number of ATMs, units	20150	1	495.26	795.83	1.61
Number of trade POS-terminals, units	190850	1	4247.99	7106.70	1.67
Promotion					
Number of likes in FB, units	163890	4	21029	27796.31	1.32
Number of views in FB, units	173113	6	21899	29035.84	1.33
Number of Instagram subscribers, units	336279	0	6355	11088.42	1.74
Number of Twitter subscribers, units	5895	0	203	348.37	1.71
Number of YouTube subscribers, units	21	0	1	1.24	1.70
Number of views in YouTube, units	62433310	0	2678294	4460221.78	1.67
Number of results in Google, units	158000000	11600	4770303	6760711.22	1.42
Net assets / Advertising costs	184517	0	14969	20839.57	1.39
Price					
Cost of attracting, percentage	25	2	7	2.38	0.32
Cost of placing, percentage	47	9	20	4.86	0.25
Spread, percentage points	39	-3	12	4.98	0.40
Net interest margin, percentage	49	-5	14	6.01	0.44
Commission income / Assets, percentage	43	0	5	3.04	0.63
Interest income / Assets, percentage	39	4	12	3.15	0.27
Total income, percentage	50	7	17	4.67	0.28

According to the data on the «product» component, banks offer a wide range of services to their customers. The system is more active in attracting funds from private clients, offering more products in the business lending sector. Traditionally, banks sell a significant number of card products, while the list of transactions related to foreign economic activity is growing. The most considerable coefficient of variation has been established for banking products connected via non-contact channels. This means that banks, offering a generally traditional set of primary products and services, introduce product innovations quite unevenly. The most active in implementing innovations are large banks, whose market share exceeds at least 1%. However, there is no direct link between market share and the activity of introducing innovative products. This is because large banks actively work with corporate clients, information about which is not detailed on the site, compared to the private segment and the segment of small and medium-sized businesses.

According to the component of the «place», the following has been noted. The number of banks is declining, which is due to the policy of the National Bank of Ukraine to remove insolvent banks from the banking sector. However, large banks with an extensive network of branches remain in the market, in which the pace of replacing traditional marketing with the marketing of banking innovations is slow. Compared to the «product» component, the «place» component indicators are characterized by a greater level of variation in both traditional and innovative components. This is due to the significant difference between banks in the number of ATMs, POS terminals, and applications.

Data on individual indicators are incomparable for individual banks. Therefore, the calculation of the normalized indicator is proposed:

$$x_{i,j} = \frac{P_{i,j}}{P_e} \quad (1),$$

$$\bar{x}_i = \frac{\sum_{i=1}^{n} x_{i,j}}{j} \quad (2),$$

where $x_{i,j}$ – normalized value for each component indicator (branches, number of applications and their ratings, number of ATMs and trade POS terminals); $P_{i,j}$ – value of a separate indicator of the i-th bank; P_e – value of a separate indicator of the bank, which is the standard (the best value); $\bar{x}_i$ – average for the component of the marketing mix.

The values of normalized indicators of the «place» component indicate that the leaders are systemic banks. However, the innovation component, such as the number of applications and their rating, is high, mainly for large banks.

According to the «promotion» component of the marketing mix, the uneven distribution of indicators of the bank's activity in the use of social networks while informing consumers about the benefits of banking products has been established. Facebook is a more used channel for promoting banking products than Instagram. The capabilities of the YouTube channel are not used by all banks, which causes such variability in this indicator.

The ratio of net assets to advertising costs was used due to the need for a relative indicator for banks of different volumes and the requirement for a normalized indicator as a stimulant. Thus, the more assets per unit of advertising costs, the more effective are the bank's advertising. The values of the indicator for the innovation component show that market leaders are most active in using social networks and the Internet. Logically, the figure is higher for systemic banks.

According to the «price» component of the marketing mix, it has to be noted that bank reporting does not allow assessing the price and profitability of the sale of innovative banking products, the value of which is determined not by costs but by value for customers. To insert such trends in work, the profitability of credit and non-credit services is singled out (Table 1). According to the data, the activity of Ukrainian banks is characterized by a high level of spread and net interest margin. This is a consequence of the high level of interest rates, allowing banks to receive a higher level of profitability and indicates an increased risk to the national economy.

To assess the primary sources of bank income, the indicators of return on assets from the commission and interest income are calculated. For the banks of Ukraine, the

authors believe that the predominance of profitability from the provision of banking services is more optimal, as this component is exposed to less risk and might be an additional indirect indicator of the banking innovations' effectiveness in marketing. The practicality of using this indicator is explained by the fact that customers quickly get used to the convenience of innovative products, become more loyal, and do not look for cheaper products.

Small banks have the highest efficiency indicators in the «price» component of the marketing mix. At the same time, the highest profitability from the provision of banking services belongs to large banks - market leaders who use banking innovations.

Integral assessments of the components of the marketing mix of Ukrainian banks in general

and the innovation component, in particular, are shown in Fig. 2.

Thus, at the present stage of the banking sector development of Ukraine, the use of innovations contributes to the effective implementation of the «4P» marketing mix. This statement is supported by the high value of the correlation coefficient between the estimated data of the complex «4P» and its innovative component «4P (I)» (R = 0.9064). Leaders in the use of marketing innovations in the banking sphere are Joint Stock Companies «Privatbank», «Universalbank», «Alfa-Bank», «First Ukrainian International Bank», «Oschadbank», «A-Bank», «Raiffeisen Bank Aval», «UkrSibbank», «Commercial Bank Ukrgasbank» and «OTP-Bank».
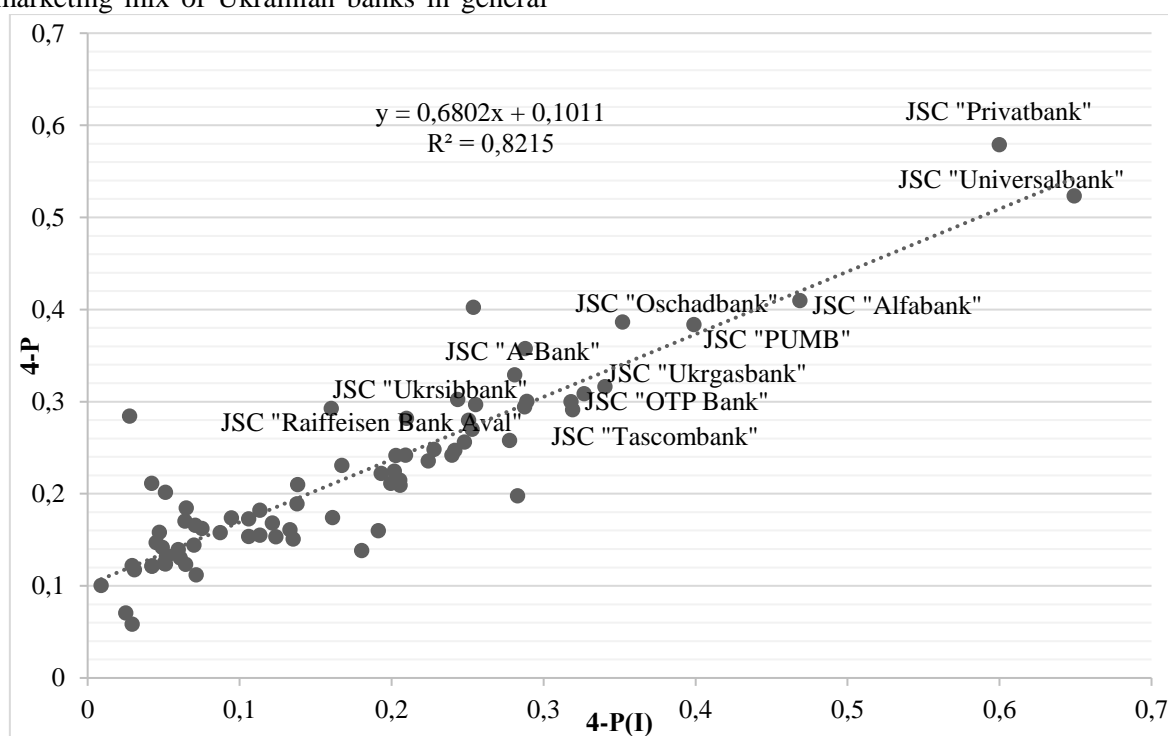
Figure 2: The relationship of integrated assessments of the «4P» banking marketing mix and its innovative component «4P (I)»

5. Conclusions

As a result of the research, the approach to evaluating digital banking as an innovative component of the marketing mix was improved. The proposed approach is based on a statistical analysis of both traditional elements of the marketing mix and its innovative components; their relationship with performance indicators of their use was substantiated. Statistical analysis was performed using official data of the National Bank of Ukraine and websites of Ukrainian banks. An innovative component includes services that are available through contactless communication channels.

It is established that only the component «price» directly impacts the bank's profitability. Components of marketing mix such as «products», «promotion», and «place» focus on increasing the number of customers and market share in specific market segments. The activity of using the marketing mix by banks is established by its components based on trends in traditional and innovative elements. It is determined that banks introduce product innovations somewhat unevenly.

The pace of replacing traditional marketing with the marketing of banking innovations is slow. Banks use social networks and the Internet to promote products; they use Facebook more often than Instagram. Not all banks use YouTube's features. More active are the big banks, which are the market leaders. According to the «price» component of the marketing mix for Ukrainian banks, it is recommended to focus on the rate of return on assets from commission income due to its lower risk and the possibility of using it as an indirect indicator of the efficiency of banking innovations in marketing.

It is established that digital banking innovations contribute to the effective implementation of the marketing mix components. This is proved based on correlation-regression analysis of the relationship between integrated assessments of the banking marketing mix and its innovation component. The leading banks in the use of banking innovations in the marketing mix have been identified.

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