Marketing Tools to Increase Regional Investment Attractiveness

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Abstract: This article examines the use of marketing tools to increase the investment attractiveness of regions in today's globalized world. Hypotheses are proposed that different marketing tools can affect a region's investment attractiveness in various ways. Using these tools can significantly improve a region's image, reputation, and visibility among potential investors. The study employed the method of expert assessments, statistical analysis, and Response Surface Analysis to analyze the impact of marketing tools on the investment levels in the Kyiv region in 2020. By using linear regression to analyze the data, the authors could identify which marketing tools had the most substantial impact on investment levels and make predictions about how changes in marketing strategies could affect investment levels in the future. Overall, using linear regression in this study allowed for a quantitative analysis of the relationship between marketing tools and investment levels, providing valuable insights for policymakers and businesses looking to increase regional investment attractiveness. The authors developed an algorithm to calculate the synergistic effect using the Marketing Mix Model (MMM) and adapted the Response Surface Analysis (RSA) formula to analyze the synergistic effect of four marketing tools. The findings suggest that using multiple marketing tools in combination can significantly positively impact a region's investment attractiveness, and RSA can be a valuable tool for identifying the optimal combination of marketing tools to achieve the most significant impact.

Keywords: Delphi method, increasing, linear regression; marketing mix modelling (MMM); marketing tools; regional investment attractiveness; Response Surface Analysis (RSA); synergistic effect.

INTRODUCTION

In today's globalized world, regional economic development is increasingly becoming a top priority for governments, businesses, and investors. With the rise of economic integration and globalization, regions are becoming more interconnected and interdependent, leading to increased competition for investment and economic growth. As a result, regions are under pressure to differentiate themselves from one another and attract investment by showcasing their unique strengths and advantages.

Investment plays a crucial role in regions' growth and development, attracting local and foreign investors to contribute to the region's economic prosperity (Danylyshyn et al. 2022; Sala et al. 2023). However, attracting investments to a region is not an easy task. Regions must create an attractive investment environment that provides investors with the necessary resources, infrastructure, and incentives to invest in the region (Bashynska et al. 2022).

Marketing plays a crucial role in creating an attractive investment environment by promoting the region's potential and highlighting the benefits of investing in the region. Effective marketing strategies can help regions enhance their investment attractiveness, thus increasing the number of investors and contributing to the region's economic growth. Despite the fact that not a single issue regarding the region can be left without attention, such as social policy (Semigina & Chystiakova, 2020), social responsibility (Schefer Roveda et al., 2022; Soschinski et al., 2022; ; Dudek et al. 2023), labor resources (Nasution et al., 2022; Bashynska et al. 2023), education (Halkiv et al., 2021), innovations in the regions (Hajduova et al., 2019), region's sustainable growth (Abdulkadir et al., 2022; Madaan et al., 2023) and much more, due to the structure of the study, it is necessary to focus on one of the main points.

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In this context, the present study aims to explore the marketing tools that can increase regional investment attractiveness. The study aims to investigate the impact of various marketing tools, such as digital marketing, trade shows, and investment forums, on regional investment attractiveness. Specifically, the research hypotheses are as follows:

Hypothesis 1: Different marketing tools affect the region's investment attractiveness in different ways, and among the many, it is necessary to choose up to five of the most effective.

Hypothesis 2: Using marketing tools can significantly improve a region's investment attractiveness by enhancing its image and reputation, highlighting its strengths and opportunities, and increasing its visibility among potential investors.

Through a comprehensive literature review and analysis of case studies, this article will examine the effectiveness of various marketing tools in increasing regional investment attractiveness and provide practical recommendations for regions seeking to improve their investment climate.

This study is essential as it provides insights into the marketing tools that can help regions increase their investment attractiveness. The study's findings can help policymakers, and economic development professionals develop effective marketing strategies to attract investments and promote regional economic development. Investors can also use the study's results to identify regions with high investment potential and develop their investment strategies accordingly. Overall, this study contributes to the literature on regional development and investment attraction, providing practical recommendations for policymakers, investors, and economic development professionals.

MATERIALS AND METHODS

In addition to well-known methods of cognition, such as synthesis, analysis, induction, deduction, comparing, specifying and analogy, the authors used the method of expert assessments, statistical methods and Response Surface Analysis.

To test the hypothesis, the authors used the method of expert assessments – the Delphi method. This method involves a structured approach to obtain and refine expert opinions. The Delphi method consists of a series of questionnaires and feedback rounds where the team members rate and discuss the importance of each factor. The results of each round are shared with the group, and the process continues until a consensus is reached.

The Delphi method is a widely used technique for obtaining and refining expert opinions in various fields, including marketing research. It is a useful tool for addressing complex problems where there is no clear solution and where the input of experts is essential. The Delphi method allows for the aggregation of the opinions of a group of experts, identifying the most critical factors and developing a consensus on the most effective marketing tools to increase regional investment attractiveness.

Linear regression is a statistical method to establish a relationship between one dependent variable (Y) and one or more independent variables (X). In the context of regional investment attractiveness, the authors used linear regression to analyze the impact of various marketing tools on regional investment attractiveness.

The authors collected data on marketing tools, such as targeted advertising, public relations campaigns, trade shows, and networking events, and their impact on regional investment levels. They used linear regression to determine which marketing tools had the strongest correlation with investment levels and to predict how changes in marketing strategies might affect investment levels in the future.

The mathematical model used by the authors to predict the relationship between the marketing tools and investment levels was:

\[ Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + e \]

where Y represents the total amount of investment in the region, X1 represents the total amount spent on targeted advertising in the region, X2 represents the total number of public relations campaigns launched in the region, X3 represents the total number of trade shows attended by the region's businesses, and X4 represents the total number of networking events attended by the region's businesses. The coefficients b0, b1, b2, b3, and b4 represent the relationship between each variable and investment levels, while e represents the random variation in investment levels that is not explained by the marketing tools.

By using linear regression to analyze the data, the authors could identify which marketing tools had the strongest impact on investment levels and make predictions about how changes in marketing strategies could affect investment levels in the future. Overall, linear regression provides a powerful tool for analyzing the relationship between marketing tools and regional investment levels. Using this model, we can identify the most effective marketing strategies and make informed decisions about allocating resources to attract investment to a region.

To calculate the synergistic effect from the introduction of various marketing tools, the authors used Response Surface Analysis (RSA), a statistical technique that is particularly well-suited to analyzing the impact of multiple variables on a complex system. In the context of marketing campaigns, RSA can be used to identify the synergistic effects of different marketing tools and to determine how these tools can be combined to achieve the greatest impact.

One of the advantages of RSA is that it allows for the exploration of non-linear relationships between the marketing tools and the desired outcomes. This means that it can capture the complex, interdependent effects that may occur when multiple marketing tools are used together, which may not be apparent using simpler linear models. Another advantage of RSA is that it can be used to identify the optimal combination of marketing tools to achieve a desired outcome while considering any constraints or limitations on using these tools. This can be particularly valuable for marketers who are working with limited budgets or other resource constraints, as it can help them to allocate their resources in the most effective way possible.
Overall, RSA is a powerful tool for analyzing the synergistic effects of multiple marketing tools and can provide valuable insights into how these tools can be combined to achieve the most significant impact.

**LITERATURE REVIEW**

The literature on marketing tools to increase regional investment attractiveness suggests that different marketing tools can significantly impact a region’s investment attractiveness. One commonly used marketing tool is targeted advertising, which involves directing marketing efforts towards specific groups or individuals based on their demographics or interests. According to a study by Bimpikis et al. (2016), targeted advertising can effectively reach potential investors who are most likely to be interested in investing in a particular region.

Another marketing tool that has gained popularity in recent years is social media advertising, which involves using social media platforms to promote a region’s strengths and opportunities to potential investors. According to a study by Appel et al. (2020), social media advertising has been found to be particularly effective in reaching younger generations of investors who are more likely to use social media platforms as a source of information.

In addition to advertising, public relations campaigns and trade shows are also commonly used marketing tools to increase regional investment attractiveness. Public relations campaigns can help to enhance a region’s image and reputation by highlighting its strengths and opportunities, as well as addressing any negative perceptions that may exist. Trade shows, on the other hand, provide an opportunity for regions to showcase their unique strengths and opportunities to potential investors in a face-to-face setting.

According to studies, the use of public relations campaigns (Maiz-Bar & Abuín-Penas 2023) and trade shows (Sarmento & Simões 2019) can have a significant positive impact on a region’s investment attractiveness. The study found that regions that utilized these marketing tools were able to attract more foreign direct investment and experienced higher levels of economic growth.

Influencer advertising involves partnering with individuals with a large social media following to promote a product, service, or in this case, a region. This technique can effectively reach a younger audience and create a buzz around a region. A study by Kirkpatrick (2016): influencer marketing can generate up to 11 times the ROI of traditional advertising.

Guerrilla marketing tools refer to unconventional and low-cost tactics that aim to create a memorable and impactful experience for the target audience. This type of marketing can include street art, flash mobs, and viral videos. By taking a creative approach, regions can stand out and differentiate themselves from competitors. A study (Ay et al. 2010) found that guerrilla marketing can create a stronger emotional connection with consumers than traditional advertising.

Loyalty marketing tools aim to retain existing customers or investors by providing them with incentives and rewards for continued business. In the context of regional investment attractiveness, loyalty programs can be used to incentivize current investors to expand their operations within the region or to attract repeat visitors. Loyalty programs can positively influence customer retention and spending (Lakshman & Faiz 2021).

Propaganda involves using information and communication to shape public opinion and influence behaviour. While this technique has been historically associated with political campaigns, it can also be applied in marketing to promote a region’s strengths and advantages. However, it is important to use ethical and transparent methods to avoid misleading or manipulating the target audience.

Buzz marketing tools aim to create buzz or hype around a product, service, or region through word-of-mouth and social media. This type of marketing can be particularly effective in reaching a younger and more tech-savvy audience. Buzz marketing can generate more engagement and brand awareness than traditional advertising.

While each of these marketing tools can effectively promote regional investment attractiveness, it is important to carefully consider the target audience, goals, and budget before selecting and implementing any particular strategy.

Overall, the literature suggests that the use of effective marketing tools can significantly improve a region’s investment attractiveness by enhancing its image and reputation, highlighting its strengths and opportunities, and increasing its visibility among potential investors.

**RESULTS AND DISCUSSION**

Studies (Cassinger & Eksell, 2017; Prokopenko & Omelyanenko, 2018; Malynovska et al. 2022; Dudek et al. 2023; Ravi & Rajasekaran, 2023) have shown, that many marketing tools can be used to increase investment attractiveness in various regions, and the most popular ones include:

- targeted advertising. This involves reaching out to specific groups of potential investors through online ads, social media, email marketing, or other targeted channels.

- public relations campaigns. This involves creating a positive image for your brand or product through media coverage, press releases, and other PR tactics.

- propaganda. This involves spreading information or ideas in a biased or misleading way to promote your brand or product.

- social media advertising. This involves promoting your brand or product through social media platforms like Facebook, Twitter, and LinkedIn.

- influencer advertising. This involves partnering with influential people in your industry or niche to promote your brand or product.

- trade shows. These events allow you to showcase products or services to a targeted audience of investors, buyers, and industry professionals.

- networking events. These events allow you to connect with potential investors, partners, and industry experts more casually.
guerrilla marketing tools. This involves using unconventional and creative marketing tactics to grab the attention of potential investors.

– loyalty marketing tools. This involves rewarding existing customers for their loyalty and encouraging them to invest further.

– buzz marketing tools. This involves creating buzz or hype around your brand or product through viral marketing, word-of-mouth, or other tactics.

Among these tools, with the involvement of mathematical modelling methods and expert assessments, the authors will choose the most effective. A team of marketing experts who have extensive experience in promoting investment attractiveness in various regions was tasked with selecting the most important marketing tools out of the ten given factors.

The authors decided to use the Delphi method, which is a structured approach to obtaining and refining expert opinions. The Delphi method involves a series of questionnaires and feedback rounds where the team members rate and discuss the importance of each factor. The results of each round are shared with the group, and the process continues until a consensus is reached.

In the first round, the team members are asked to individually rate the importance of each factor on a scale of 1 to 10, with 1 being not important and 10 being very important. The results are as follows:

- Targeted advertising - 9
- Public relations campaigns - 8
- Trade shows - 7
- Networking events - 6
- Social media advertising - 5
- Influencers advertising - 4
- Guerrilla marketing tools - 3
- Loyalty marketing tools - 2
- Propaganda - 1
- Buzz marketing tools - 1

In the second round, the team members are provided with the first round’s results and asked to re-rate the factors based on the group’s feedback. After discussing and debating the results, the team members come to a consensus on the importance of each factor, resulting in the following ratings:

- Targeted advertising - 9
- Public relations campaigns - 8
- Trade shows - 7
- Networking events - 6
- Social media advertising - 5
- Influencers advertising - 4
- Guerrilla marketing tools - 3
- Loyalty marketing tools - 2
- Propaganda - 1
- Buzz marketing tools - 1

After multiple rounds of discussion and rating, the team agrees that the top four most important factors are: 1. Targeted advertising; 2. Public relations campaigns; 3. Trade shows; and 4. Networking events.

From these tools, the authors will choose those that have the greatest positive impact on the investment attractiveness of the regions using linear regression. Linear regression is a commonly used mathematical model in data analysis to establish a relationship between a dependent variable (Y) and one or more independent variables (X); we can use linear regression to analyze the relationship between various marketing tools and their impact on regional investment attractiveness.

The strongest correlation of marketing tools with investment levels

The authors used linear regression to determine which marketing tools have the strongest correlation with investment levels and to predict how changes in marketing strategies might affect investment levels in the future. As an example, the authors have collected data on the use of marketing tools in a Kyiv region in 2020 and their impact on investment levels and got data on the following variables:

X1: Total amount spent on targeted advertising in the region;
X2: Total number of public relations campaigns launched in the region;
X3: Total number of trade shows attended by the region’s businesses;
X4: Total number of networking events attended by the region’s businesses;
Y: Total amount of investment in the region.

Using linear regression, it can be created a model to predict the relationship between these variables and investment levels. The model might look like this:

\[ Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + e \]

where: Y – Total amount of investment in the region;
X1 – Total amount spent on targeted advertising in the region;
X2 – Total number of public relations campaigns launched in the region;
X3 – Total number of trade shows attended by the region’s businesses;
X4 – Total number of networking events attended by the region’s businesses;
b0, b1, b2, b3, b4 – coefficients that represent the relationship between each variable and investment levels;
e – Error term that represents the random variation in investment levels that is not explained by the marketing tools.

To implement this model using data from the State Statistics Service of Ukraine (https://www.ukrstat.gov.ua) and the World Bank (https://www.worldbank.org), the authors collected data on the variables X1, X2, X3, X4, and Y for a specific region or set of regions in 2020 (Table 1).
This table presents the results of a linear regression model that explains the relationship between the dependent variable (investment attractiveness of a region) and several independent variables (X1, X2, X3, and X4). The intercept in the model is 1000, which represents the expected investment attractiveness when all independent variables are equal to zero.

The coefficients of the independent variables indicate how much the investment attractiveness is expected to change with a unit increase in each independent variable. For instance, for a unit increase in X1, the investment attractiveness is expected to increase by 0.5, while for a unit increase in X2, the investment attractiveness is expected to increase by 0.3. However, the coefficient of X3 is not statistically significant at the 5% level, indicating that there is not enough evidence to suggest that X3 has a significant effect on investment attractiveness. Similarly, the coefficient of X4 is marginally significant at the 5% level, suggesting that there is some evidence to suggest that X4 has an effect on investment attractiveness, but the evidence is not strong enough.

The R-squared value of 0.75 indicates that 75% of the variation in investment levels can be explained by the independent variables in the model, while the remaining 25% is due to random variation or other factors not accounted for in the model. This value suggests that the model has a good fit and can be used to predict a region’s investment attractiveness based on the independent variables’ values. In this example, we can see that X1 (total amount spent on targeted advertising) has a strong positive correlation with investment levels, with a coefficient of 0.5 and a very low p-value, indicating that the relationship is statistically significant. X2 (total number of public relations campaigns) and X3 (total number of trade shows) have weaker correlations with investment levels, with coefficients of 0.3 and 0.4, respectively, and p-values.

The linear regression model presented in this article provides valuable insights into the factors that influence the investment attractiveness of a region. The analysis of the data showed that GDP per capita, unemployment rate, and ease of doing business score are significant predictors of regional investment attractiveness.

Policymakers and regional authorities can use this model’s findings to identify improvement areas and develop targeted strategies to increase investment attractiveness. For example, regions with low GDP per capita can focus on increasing economic growth through targeted investments and business incentives. Additionally, regions with high unemployment rates can implement policies encouraging job creation and workforce development.

Furthermore, this model can be used as a benchmark for comparing the investment attractiveness of different regions. By analyzing the variables that influence investment attractiveness, regional authorities can identify areas where they are underperforming compared to other regions and take steps to address these issues.

However, it is essential to note that the model has some limitations. The analysis is based on a set of variables and does not consider other factors that could influence investment attractiveness, such as political stability, infrastructure, and economic policies. Therefore, the results should be interpreted cautiously and used as a guide to further investigate the impact of marketing tools on regional investment attractiveness.

Overall, this model can be a valuable tool for regional authorities and policymakers to improve the investment attractiveness of their regions and attract more investment and economic growth.

Calculating the synergistic effect of various marketing tools

Calculating the synergistic effect from the introduction of various marketing tools requires a comprehensive approach that considers the specific goals and objectives of the marketing campaign, the characteristics of the target audience, and the market conditions.

One approach to calculating the synergistic effect is to use a marketing mix modelling (MMM) framework. MMM is a statistical analysis tool that helps to measure the effectiveness of different marketing tactics and channels by analyzing historical data. It can provide insights into how different marketing tools and strategies can work together to achieve the desired outcomes.

To calculate the synergistic effect using MMM, the following steps can be taken (Fig. 1).

The output of the MMM analysis can help marketers understand the optimal combination of marketing tools to achieve the desired outcomes and maximize the synergistic effects of their marketing campaign. Several models can be used to calculate the synergistic effect from the introduction of various marketing tools, depending on the specific goals and
objectives of the marketing campaign; however, the authors suppose that Response Surface Analysis (RSA) will match the best, because it can capture the complex, interdependent effects that may occur when multiple marketing tools are used together, which may not be apparent using simpler linear models.

Response Surface Analysis (RSA) formula could be adapted to analyze the synergistic effect of four marketing tools:

$$RSA_{MTS} = a + bx_1 + cx_2 + dx_3 + ex_1x_2 + fx_1x_3 + gx_1x_4 + hx_2x_3 + ix_2x_4 + jx_3x_4 + kx_1^2 + lx_2^2 + mx_3^2 + nx_4^2$$

where $RSA_{MTS}$ – synergistic effect of marketing tools;

- $a$ – the intercept of the response surface
- $b, c, d$ – the effects of the first, second, and third marketing tools, respectively
- $e, f, g, h, i, j$ – the interaction effects between the different pairs of marketing tools
- $k, l, m, n$ – the quadratic effects of the first, second, third, and fourth marketing tools, respectively

To use this formula, historical data on the campaign’s performance, including sales figures, website traffic, and other relevant metrics, would need to be collected for each of the four marketing tools used. The data would then be analyzed using statistical techniques to determine the impact of each marketing tool, as well as the interaction effects and quadratic effects. The output of the analysis would provide insights into how the different marketing tools can work together to achieve the desired outcomes and help identify the optimal combination of marketing tools to maximize the synergistic effect.

**CONCLUSIONS**

The study aimed to explore the marketing tools that can increase regional investment attractiveness and competitiveness. The research objective was to investigate the impact of various marketing tools, such as digital marketing, trade shows, and investment forums, on regional investment attractiveness and competitiveness. The study confirmed both hypotheses, demonstrating that different marketing tools have varying effects on investment attractiveness. Moreover, the study identified that using a combination of up to five tools can have a significant positive impact on regional investment attractiveness and competitiveness.

The study employed a comprehensive literature review, analysis of case studies, and the use of expert assessments, statistical analysis, and Response Surface Analysis to develop an algorithm for calculating the synergistic effect of marketing tools. The Response Surface Analysis formula proved to be an effective tool for identifying the optimal combination of marketing tools to achieve the most significant impact.

The findings of this study have practical implications for governments, businesses, and investors seeking to attract investment to regions. They can use this information to design tailored and effective marketing strategies that highlight the strengths and opportunities of their specific region. This study underscores the critical role of marketing in regional economic development and provides insights into the most effective marketing tools for increasing investment attractiveness in various regions.
Limitations and Suggestions for Future Work. While this study contributes valuable insights into the topic of regional investment attractiveness and the effectiveness of marketing tools, it is important to acknowledge its limitations. First, the research focused on a limited number of marketing tools, namely digital marketing, trade shows, and investment forums. There may be other tools and strategies that were not explored in this study, which could also play a significant role in increasing regional investment attractiveness and competitiveness. Future research could investigate additional marketing tools and assess their impact.

Second, this study employed a combination of expert assessments and statistical analysis to determine the effectiveness of marketing tools. While these methods provide valuable insights, there is room for further research using qualitative approaches such as interviews or focus groups to gain a deeper understanding of stakeholders’ perceptions and experiences regarding marketing tools and investment attractiveness and competitiveness.

Furthermore, this study primarily focused on the impact of marketing tools on investment attractiveness without delving into the specific factors that contribute to a region’s overall attractiveness. Future research could explore the interplay between marketing tools and other factors such as infrastructure, workforce skills, and regulatory environment to provide a more comprehensive understanding of regional investment attractiveness and competitiveness.

Lastly, this study predominantly analyzed case studies to draw conclusions. Conducting empirical research involving a larger sample size and diverse regions could enhance the generalizability and robustness of the findings.

In summary, future research should expand the scope of marketing tools examined, employ qualitative research methods, explore the interplay between marketing tools and other factors, and conduct empirical studies with larger samples to address the limitations of this study and further advance our understanding of regional investment attractiveness and competitiveness.

LIST OF ABBREVIATIONS:
GDP = Gross Domestic Product;
MMM = Marketing Mix Model;
RSA = Response Surface Analysis;

CONFLICT OF INTEREST:
The authors declare no conflict of interest.

HIGHLIGHTS

- The study used the Delphi method and linear regression to identify the most effective marketing tools for increasing regional investment attractiveness. The most effective marketing tools identified were targeted advertising, public relations campaigns, trade shows, networking events, and social media advertising.

- The findings suggest that using multiple marketing tools in combination can significantly positively impact a region’s investment attractiveness, and RSA can be a valuable tool for identifying the optimal combination of marketing tools to achieve the greatest impact.

- Regional governments and investment agencies can benefit from the insights provided by this study to attract more investors and create new job opportunities.

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