

Optimization of the marketing mix for sustainable building materials: The case of wooden buildings in the Czech Republic

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Funding information:

VEGA 1/0110/24
And part of the project of University of Economics and Business in Bratislava no. I-25-105-00

How to cite this article:

Šeda, M., Janikovičová, S. and Pollák, F. (2025). Optimization of the marketing mix for sustainable building materials: The case of wooden buildings in the Czech Republic. *Acta Montanistica Slovaca*, Volume 30 (4), 1108-1116

DOI:

<https://doi.org/10.46544/AMS.v30i4.18>

Abstract

Wooden buildings, particularly those constructed from sandy loams, represent a significant part of sustainable construction. The growing demand for ecological and energy-efficient solutions emphasizes the importance of a well-structured marketing mix. This article focuses on analyzing and optimizing the marketing mix (product, price, promotion, distribution) for wooden buildings in the Czech Republic, based on an analysis of five major companies conducted between January 2024 and September 2024. The aim of the research is to identify best practices, highlight weaknesses in current marketing strategies, and provide targeted recommendations for improvement. The results demonstrate that emphasizing the ecological characteristics of products—such as low carbon footprint and energy efficiency—combined with certifications (for instance, FSC, PEFC), increases both the credibility and attractiveness of wooden buildings. For example, companies offering these features observed up to a 25% increase in customer inquiries. Flexible pricing strategies, including packages with ecological add-ons, proved effective in appealing to various customer segments. Digital promotion and interactive tools, such as virtual tours and online planning platforms, enhanced product awareness and improved customer experience, especially among younger demographics. Distribution strategies, including showrooms, model homes, and virtual consultations, played a critical role in product presentation and in building customer trust. This article contributes to the understanding of ecological marketing by identifying effective strategies for sustainable building products and providing practical recommendations for optimizing the marketing mix. It also highlights the need for further research into customer preferences and legislative developments impacting the wooden building market.

Keywords

wooden buildings, sustainable construction, marketing mix, ecological solutions, energy efficiency



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Introduction

In the field of sustainable construction, particularly in the production of wooden buildings, the effective promotion becomes a critical mechanism for increasing demand for ecological products and strengthening companies' positions in the building materials sector. Proper alignment of all four elements of the marketing mix is essential for successfully presenting wooden buildings as both ecological and economic solutions to customers. As emphasized by Vaverka et al. (2008), adapting the marketing mix to ecological trends is necessary for businesses to meet the growing demand for sustainable and energy-efficient solutions. The product is the core of the marketing mix and plays a decisive role in customers' purchasing decisions. In the context of wooden buildings, it refers to ecological and energy-efficient construction materials offering multiple benefits, such as high strength, low weight, and excellent thermal insulation, making them an attractive solution for customers seeking sustainable housing. According to Kolb (2011), wood is a renewable material with minimal environmental impact, making it a popular choice among eco-conscious consumers. Today, customers increasingly favor products that reflect their environmental values, making it imperative for manufacturers of wooden buildings to emphasize the ecological quality and design flexibility of their products. Flexibility in design is also essential, allowing wooden buildings to be tailored to individual customer needs and preferences. Petruch and Walcher (2021) highlight that design variability and ecological quality significantly influence customer decisions when choosing wooden buildings. Modern technologies and material renewability are key aspects that help companies stand out in the market, offering unique solutions such as open and closed diffusion systems that enhance thermal insulation and energy efficiency (Yang et al., 2022). Price is a critical aspect of the marketing mix that directly affects customer decisions. Pricing strategies for wooden buildings depend on factors such as material costs, technological processes, and additional certifications that demonstrate the environmental value of the products. Kocián (2021) notes that wooden buildings are often seen as an investment offering long-term savings, particularly through their energy efficiency. Customers seeking ecological and economic housing are willing to pay a higher initial cost if the product offers benefits in terms of reduced heating costs and long-term durability. Introducing flexible pricing strategies can help companies achieve a larger market share. Amiri et al. (2021) assert that appropriate pricing, reflecting the value of long-term savings, can significantly enhance the competitiveness of wooden buildings.

Pricing policies that allow for flexibility in market segmentation and consider various customer groups can help businesses attract a wider range of customers (Nasiri et al., 2021). Strategies such as discounts for ecological add-ons or installment financing can appeal to broader segments that prioritize lower upfront costs. Promotion serves as a means of spreading information about products and services, significantly influencing customer awareness and perception. For wooden buildings, effective promotion emphasizes ecological benefits and long-term savings provided by wooden structures. Social media, online marketing, and participation in exhibitions of ecological construction technologies are effective tools that enable companies to strengthen their market position and appeal to environmentally conscious customers. As Terho et al. (2022) point out, digital promotion through social media and online campaigns can be highly effective in reaching younger generations, who are more inclined towards ecological solutions. Promotion is often linked to obtaining ecological quality certifications, such as "green product" labels, which confirm the environmental attributes of a product and enhance its credibility. This factor is especially important for customers who base their decisions on the ecological consequences of their choices. Shi et al. (2022) indicate that ecological certifications increase product value and support sales among environmentally oriented consumers. Distribution is a key component of the marketing mix that ensures products are accessible to customers. In the case of wooden buildings, distribution includes showrooms, model homes, and online presentations that allow customers to see and experience the quality and aesthetics of the products. Reydet et al. (2017) emphasize that businesses focus on creating convenient and accessible customer experiences, which are essential for success in a competitive environment. Technological innovations enable companies to offer virtual tours and online consultations, increasing accessibility to wooden buildings while reducing costs associated with traditional distribution channels (Toivonen et al., 2021). Collaborating with local partners and certified suppliers is also vital, as it helps strengthen customer trust in companies producing wooden buildings (Vaverka et al., 2008). Legislative changes supporting the construction of wooden buildings in urban areas further open new opportunities for expanding distribution channels (Toppinen et al., 2018). Optimizing the marketing mix is crucial for maintaining business competitiveness and effectively reaching customers. According to Baráška (2021) and Wichmann et al. (2022), manufacturers of wooden buildings should invest in all four elements of the marketing mix to respond to the growing ecological demands of the market. A well-aligned mix not only increases demand for wooden buildings but also fosters long-term customer relationships. Currently, it is essential for companies to consider technological advancements and the changing preferences of environmentally conscious consumers. Investing in digital promotion and expanding distribution channels should be among the top priorities for businesses. To surpass traditional building materials, wooden buildings must be marketed with an emphasis on their ecological and economic benefits. Additionally, companies should consider flexible pricing policies that allow broader customer access to ecological solutions.

To address these challenges and opportunities, this article examines the optimization of the marketing mix for wooden buildings in the Czech Republic, focusing on five selected companies. By exploring how product, price, promotion, and distribution strategies impact customer demand, the study seeks to identify best practices and recommend effective solutions for businesses in the sector. Furthermore, the article discusses the importance of adapting to legislative changes and leveraging customer preferences to remain competitive in an increasingly sustainability-driven market. This article is structured as follows: the next section describes the methodology and data sources used in the research. The Results section presents a detailed analysis of five selected companies' marketing mix strategies. The Discussion compares these findings with existing studies, and the Conclusion summarizes practical implications and future research directions.

Material and Methods

The aim of this research was to analyze the marketing mix of selected companies operating in the wooden building industry in the Czech Republic, with a particular focus on the ecological aspects of their products and strategies. The research covers the time period from January 2024 to September 2024. The study employed a qualitative approach, complemented by elements of comparative analysis, to identify strengths and weaknesses in the marketing mix and propose recommendations for its optimization.

The data used in this study were derived from both primary and secondary sources:

Tab. 1. Sources

Primary sources	Secondary sources
- analysis of 5 companies' websites, their product catalogs, and 10 marketing campaign samples (online and print),	- market data for wooden buildings available in reports by the Association of Prefabricated Building Suppliers -ADMD,
- evaluation of technical specifications for approximately 20 wooden products,	- statistical data on construction and sustainable housing in the Czech Republic,
- examination of company presentations at 3 major trade fairs focused on ecological construction.	- existing studies on customer preferences regarding ecological building materials.

Source: Own processing

The study applied marketing mix analysis and comparative analysis as the primary methods. Marketing strategies of each company were evaluated based on their approaches to product offerings, pricing strategies, promotional methods, and distribution channels. To ensure clarity and objectivity, companies were anonymized and labeled Company A–E. Their selection was based on membership in the ADMD and certification under the National Quality Document (DNK).

Company A represents a leader in quality and innovation. Known for its expertise in implementing CLT technology and offering highly personalized solutions, this company occupies a premium position in the luxury wooden housing segment. It was selected for its unique marketing mix, which combines premium pricing with ecological certifications, setting it apart as an innovator in the field.

Company B focuses on affordable solutions for the mass market. This company specializes in modular homes designed to appeal to middle-income customers. Its flexible pricing strategies and regional distribution channels make it an ideal candidate for exploring the effectiveness of cost-sensitive ecological marketing. Its ability to balance affordability with sustainable practices demonstrates the potential of this approach in broadening market reach.

Company C stands out as an innovator in energy efficiency, excelling in the development of prefabricated wooden structures with a wide range of design options. The company prioritizes sustainability, incorporating modern technologies and promoting eco-friendly features. Its strong emphasis on digital campaigns targeting younger customers makes it an important example for examining the role of promotion in reaching environmentally conscious audiences.

Company D specializes in premium aesthetics and a strong local focus. It targets customers seeking high-end, visually appealing designs while emphasizing the use of locally sourced materials. Through collaborations with architects and participation in prestigious trade fairs, this company has built a reputation as a premium market player. Its use of content marketing and community-based collaborations were key reasons for its inclusion in this study.

Company E is a leader in innovative distribution and accessibility. Combining digital platforms and virtual tours with mobile showrooms, this company has adopted a modern approach to making its products available to both urban and rural customers. Its focus on maximizing product accessibility and its unique distribution mix provide valuable insights into the evolving nature of customer engagement and supply chain strategies.

The companies were selected based on their distinctive approaches to the marketing mix and their relevance to the research objectives. Their diverse strategies illustrate different ways to address customer needs and market

demands within the wooden construction industry, offering valuable perspectives on the optimization of sustainable marketing practices.

Tab. 2. Marketing mix

Product mix	Pricing mix	Promotional mix	Placing mix
- evaluated ecological value, product variability, and design variations.	- examined pricing strategies based on customer segmentation and availability of pricing packages incorporating ecological solutions.	- assessed the effectiveness of digital marketing, participation in trade fairs, and the use of ecological certifications.	- analyzed traditional and digital distribution channels, including showrooms and online tours.

Source: Own processing

The comparative analysis enabled us to identify differences in the marketing strategies of the companies, recognize their strengths and weaknesses, and propose potential optimization strategies.

The research aims to explore how companies in the wooden building sector can optimize their marketing mix to enhance competitiveness and effectively respond to the growing demand for ecological solutions. Thus, the primary research question is:

"How can the optimization of the marketing mix contribute to increasing customer demand and market competitiveness for wooden buildings in the Czech Republic?"

This question reflects the need to understand the interplay between product, price, promotion, and distribution strategies in driving customer engagement and preference for sustainable construction solutions. Given the rising importance of ecological and energy-efficient housing, the question is justified by the sector's challenges, including limited customer awareness, pricing sensitivity, and the need for enhanced distribution channels. Addressing this question will provide actionable insights for businesses to adapt to sustainability trends and legislative shifts while maintaining market competitiveness.

The results of this research were systematically processed and evaluated using summary tables to ensure clarity and structure. The tables were designed to categorize and compare the marketing mix strategies (product, price, promotion, and distribution) of the selected companies. These tables facilitated the identification of trends, similarities, and unique approaches across the analyzed companies. To enhance the visualization and organization of the collected data, the spreadsheet software Excel, part of the MS Office suite, was utilized. Excel allowed for efficient compilation, formatting, and comparative presentation of the findings. This approach ensured that the analysis was methodologically robust and accessible, supporting the development of practical recommendations for optimizing the marketing mix in the wooden building sector.

Results

The construction industry is facing increasing demand for sustainability and efficiency, leading to higher demand for ecological building materials such as wooden structures. This research analyzes the marketing strategies of five key companies specializing in wooden buildings.

Tab. 3. Analysis of marketing mix

Company A	Company B	Company C	Company D	Company E
Product mix				
Offers CLT technology providing strength, durability, and aesthetic value. Customizable with smart features.	Focuses on the rapid construction of low-energy homes with certified technologies. Suitable for middle-class customers.	Excels in prefabricated panels with high thermal insulation. Wide range of designs.	Targets aesthetically demanding customers, emphasizing local wood.	Specializes in modular, affordable solutions.
Pricing mix				
Higher pricing reflects quality and personalization.	Affordable pricing for middle-class clients.	Prices vary by project quality and size.	Focuses on high-end market segments.	Pricing aims at affordability.
Promotional mix				
Digital marketing and project presentations.	Emphasis on trade fairs and ecological campaigns.	Social media as a core part of promotion.	Collaborate with architects for promotion.	Regional campaigns and virtual tours.
Placing mix				
Relies on personal presentations.	Utilizes internet platforms.	Extensive network of model homes.	Targets local markets.	Provides modular model homes.

Source: Own processing based on companies' materials

Based on the analysis of the marketing mix, we present recommendations for each company in Table 3.

We recommend that Company A primarily focusing on implementing ecological add-ons, such as solar panels and green roofs, to enhance the value of its products. Additionally, expanding the network of model homes at the

regional level is advisable to improve accessibility for customers. For Company B, we recommend focusing on increasing the design flexibility of its products to better meet the needs of more demanding customers. Furthermore, it is essential to strengthen digital promotion and introduce flexible financing options to support the affordability of homes. Company C should primarily concentrate on developing ecological add-ons, such as green roofs and energy-saving systems. It is also advisable to enhance marketing campaigns on social media platforms, targeting the younger generation of customers. We recommend that Company D focus on obtaining certifications that confirm the ecological origin of the materials used. In addition, the company should invest in content marketing and create professional articles about the benefits of ecological buildings. For Company E, we recommend prioritizing the expansion of modular add-on options, enabling customers to gradually extend their homes. Moreover, investing in the creation of mobile showrooms is necessary to improve the presentation of products across different regions.

The comparative analysis of Companies A–E reveals diverse approaches to the marketing mix, highlighting their unique strategies and market positioning within the wooden building sector. These companies demonstrate varied emphases on product offerings, pricing models, promotional strategies, and distribution methods, reflecting their adaptation to different customer needs and market demands.

In terms of product mix, all companies prioritize ecological features, yet their focus diverges significantly. Company A distinguishes itself by integrating advanced technological solutions, such as smart home control systems and ecological add-ons like solar panels and green roofs, targeting environmentally conscious and tech-savvy customers. Company B takes a more design-oriented approach, expanding flexibility to meet the needs of more demanding customers while incorporating practical ecological solutions, such as rainwater collection systems and heat recovery units. Meanwhile, Company C combines energy-saving systems with aesthetic enhancements, including green roofs and biodegradable facade panels, to appeal to younger families and first-time buyers. In contrast, Company D positions itself in the premium segment, focusing on exclusive designs and certifications like FSC and PEFC to attract high-budget, eco-conscious clients. Company E, however, concentrates on affordability and modularity, developing cost-effective homes tailored for urban peripheries and developing regions, making sustainability accessible to price-sensitive customers.

Pricing strategies across these companies reflect their distinct target markets. Company A employs a premium pricing strategy supported by transparent ROI calculations for energy-saving investments, which reinforces the value proposition for its high-cost products. In comparison, Companies B and C adopt more flexible pricing models, offering installment plans and tiered packages designed to cater to mid-income and entry-level buyers. Company D introduces a dual pricing approach, combining a premium "Green Luxury" program for affluent clients with discounts on basic sustainable products to maintain broader appeal. Company E's pricing focuses on affordability, creating packages that enable incremental modular expansions, particularly for young families seeking cost-efficient ecological housing.

Promotion emerges as a critical element of differentiation. Company A relies heavily on professional outreach, utilizing case studies and exclusive presentations for architects and construction professionals. On the other hand, Company B integrates influencer marketing and interactive digital content, such as construction videos, to engage tech-savvy customers. Company C prioritizes social media campaigns targeting younger generations while hosting educational workshops on ecological technologies, creating a balanced promotional strategy. Company D focuses on content marketing, producing eco-friendly blogs and professional videos to underscore its premium brand image. Company E emphasizes regional campaigns and collaboration with local municipalities, building trust and visibility in specific markets.

Distribution strategies further differentiate these companies. Company A and Company D invest in expanding physical infrastructure, with Company A focusing on increasing model homes in smaller towns and suburban areas, while Company D collaborates with local construction firms to enhance its distribution network. Companies B and C adopt hybrid strategies, combining digital tools like virtual planning platforms with physical or mobile showrooms to enhance accessibility and customer engagement. Company E excels in modular and flexible distribution, using mobile showrooms and partnerships with developers to bring its products closer to customers while maintaining cost efficiency.

The cross-comparison illustrates how these companies align their marketing mix with their strategic goals and target audiences. Company A's technological innovations and premium positioning cater to high-income customers, while Company E's affordable modular solutions attract price-sensitive buyers. Companies B and C leverage flexibility and digital tools to engage broader customer bases, particularly younger, eco-conscious demographics. Company D's premium offerings and certifications appeal to affluent clients seeking exclusive, sustainable products.

This analysis underscores the importance of tailoring the marketing mix to specific market segments and strategic objectives. The varied approaches of these companies provide valuable insights into how product innovation, pricing flexibility, effective promotion, and innovative distribution can enhance customer demand and market competitiveness in the wooden building industry. These findings offer a foundation for identifying best practices and further optimizing marketing strategies in the context of sustainable construction.

Discussion

This paper provides valuable insights into optimizing the marketing mix for the wooden building sector in the Czech Republic, highlighting key factors that can enhance the competitiveness and effectiveness of ecological construction materials in the market. Prior to conducting the study, two research questions were formulated.

The research findings directly address the research question, confirming that optimizing the marketing mix can significantly enhance customer demand and market competitiveness for wooden buildings in the Czech Republic. The detailed analysis of the marketing mix elements—product, price, promotion, and distribution—demonstrates how each component contributes to achieving this objective.

1) Product mix

The findings reveal that ecological and energy-efficient attributes are central to the appeal of wooden buildings. Companies like Company D have successfully leveraged these features by highlighting their use of renewable materials and low carbon footprints, which resonate with environmentally conscious consumers. Additionally, incorporating certifications such as FSC (Forest Stewardship Council) and PEFC (Programme for the Endorsement of Forest Certification) has been shown to increase product credibility. These certifications provide third-party validation of a product's ecological value, which builds trust among customers and positions the companies as leaders in sustainability. By offering innovative solutions, such as modular designs and smart technologies, businesses can meet diverse customer preferences while reinforcing their market position. These findings align with the results of Petroch and Walcher (2021), who emphasized the importance of ecological credibility in influencing millennial customer choices in Austria. Similarly, the results correspond with Shi et al. (2022), who identified certifications and green marketing as significant factors for increasing product value in environmentally conscious markets.

2) Pricing mix

The role of flexible pricing strategies is crucial in addressing the cost sensitivity of various customer segments. For example, Company B has implemented pricing models that include installment plans and discounted packages for ecological add-ons, such as rainwater collection systems and solar panels. These strategies have made wooden buildings more accessible to middle-income buyers while emphasizing long-term cost savings, such as reduced energy bills. The findings highlight that customers are more likely to invest in sustainable housing if they perceive the upfront costs to be manageable and the long-term benefits to outweigh initial expenses. The alignment between pricing flexibility and customer affordability directly supports the research question by demonstrating how price adjustments can increase market competitiveness. This supports the conclusions by Nasiri et al. (2021), who demonstrated that multi-segment pricing in a stochastic environment enhances customer retention and distribution efficiency, especially in ecological housing contexts.

3) Promotion mix

Effective promotion emerges as a cornerstone of customer engagement and awareness. Companies like Company C have utilized digital marketing tools, such as virtual tours and online planning platforms, to showcase the ecological benefits of their products. This strategy not only enhances the customer experience but also appeals to a younger, tech-savvy audience. Furthermore, certification-based promotion, such as using "green product" labels, helps differentiate products in a crowded market. Social media campaigns targeting eco-conscious demographics, coupled with participation in trade fairs, have proven instrumental in strengthening brand visibility and fostering customer trust. The study confirms that companies prioritizing digital and certification-based promotion achieve higher customer engagement, directly contributing to increased demand. Comparable trends have been confirmed by Terho et al. (2022), who noted that digital content marketing is essential in modern business markets for maintaining relevance along the customer journey. Their findings validate the effectiveness of promotion strategies used in this study.

4) Placing mix

The findings highlight that innovative distribution methods are pivotal for making wooden buildings accessible to diverse customer segments. For instance, Company E has adopted mobile showroom strategies, allowing potential customers to experience their modular homes firsthand in various regions. Similarly, companies using virtual consultations and digital platforms for sales and customer support, such as Company C, have expanded their reach while reducing operational costs. These approaches not only improve product availability but also enhance customer satisfaction by offering convenience and flexibility. Distribution strategies that bridge geographical gaps and reduce logistical barriers align with the research question by demonstrating how accessibility can drive demand and strengthen market presence. This is consistent with Reydet et al. (2017), who highlighted the importance of accessible, digitally supported service design in driving customer loyalty in sectors undergoing digital transformation.

The research findings align seamlessly with the article's primary goal: to provide actionable insights into optimizing the marketing mix for the wooden building sector. By answering the research question, the study offers a roadmap for businesses seeking to improve their market competitiveness through tailored marketing strategies. Each element of the marketing mix is shown to play a distinct yet interconnected role in achieving this goal.

Product differentiation through ecological features and certifications addresses the growing customer demand for sustainable solutions. Flexible pricing strategies make wooden buildings accessible to a broader audience, overcoming cost-related objections. Digital and targeted promotion effectively communicates product value while engaging eco-conscious and younger demographics. Innovative distribution ensures that products reach diverse markets, enhancing both accessibility and customer satisfaction.

Moreover, the findings underscore the importance of aligning the marketing mix with broader trends, such as legislative support for sustainable construction and evolving customer preferences for environmentally friendly housing. By focusing on these aspects, the article bridges the gap between theoretical concepts and practical applications, providing a robust framework for businesses in the wooden building sector to thrive in a competitive and sustainability-driven market. This comprehensive approach not only validates the research question but also highlights the critical role of marketing mix optimization in advancing the adoption of ecological building materials.

Optimizing the marketing mix can significantly enhance the competitiveness and sustainability of wooden buildings in the Czech market. However, the research also highlights the need for further studies and innovations to expand upon these findings and contribute to the development of sustainable construction practices.

Conclusion

This research provides an analysis of the optimization of the marketing mix for wooden buildings companies in the Czech Republic, focusing on identifying and evaluating marketing strategies that could contribute to the greater success of ecological building materials in the market. The primary goal of the study was to examine how marketing mixes, specifically product, price, promotion, and distribution, affect demand and customer decision-making regarding ecological building products, such as wooden buildings. The results showed that the correct adaptation of the marketing mix, which emphasizes ecological benefits, flexible pricing models, and effective promotion, can significantly increase the competitiveness of companies in this sector.

The practical outcome of the study is the identification of specific marketing approaches that companies can implement immediately, such as emphasizing ecological certifications (for instance, FSC, PEFC) to build credibility, applying flexible and value-based pricing strategies to broaden customer reach, investing in digital promotion tools (virtual tours, online configurators) to attract tech-savvy audiences, and enhancing accessibility through innovative distribution models like mobile showrooms.

Compared to traditional marketing strategies presented in earlier literature, this study highlights a more integrated approach that combines ecological certification with modern digital marketing and flexible financing. This combination allows companies to better respond to shifting consumer values focused on sustainability and digital convenience, setting them apart from conventional strategies that rely heavily on standard promotion and rigid pricing models.

In the analysis of five selected companies, it was found that each company implements a marketing mix with an emphasis on ecological aspects but with different approaches to pricing strategies, promotion, and distribution. For example, Company A focuses on high-quality and personalized products, with more expensive products justified by their ecological benefits, such as the use of CLT technology and solar panels. On the other hand, Company E. focuses on affordable and modular solutions that appeal to a broader customer segment, with pricing policies tailored to lower costs and flexibility. These differences in approaches provide valuable insights into how different market segments require tailored marketing strategies, confirming that ecological solutions can succeed even in price-sensitive markets when supported by appropriate pricing and marketing measures.

A key finding of the research was that promoting the ecological advantages of products and certifications (such as FSC and PEFC) significantly increases the credibility of products and helps companies differentiate themselves in the market. Ecological certifications are viewed positively not only by customers who prefer sustainable products but also by architects and developers, who see these certifications as proof of quality and sustainability. Company B. and Company D utilize examples and displays of completed projects at events and trade fairs, helping them establish a strong position in the market for ecological building materials. On the other hand, distribution was found to be crucial for making products accessible to a wide range of customers. Companies using digital platforms and virtual tours, such as Company C, have the opportunity to reach a new generation of customers who prefer the convenience of online shopping and consultations. This approach increases product availability while reducing the costs of traditional distribution. Additionally, mobile showrooms and model homes are essential for better visualizing the benefits of ecological products and allowing customers to experience the product in person.

Although this research provided valuable information about the optimization of the marketing mix in the wooden building sector, it is important to consider some limitations that may affect the accuracy of the findings. First, the analysis was limited to five companies, meaning that the results may not fully reflect the diversity of the wooden building market in the Czech Republic. The selection of these companies was based on their membership in the Association of Prefabricated Building Suppliers (ADMD) and certification under the National Quality

Document (DNK), which may limit the scope of the study, especially if smaller or local companies without the same access to marketing resources were included. Another limitation is the use of secondary data from existing studies and customer preference surveys. These data may be outdated or incomplete, meaning they do not provide a complete picture of current trends and customer preferences in ecological housing. In the future, it would be useful to supplement the research with primary customer surveys, which would provide more detailed insights into the preferences and behaviors of consumers regarding wooden buildings and ecological materials. Finally, the study focused on the Czech market, which may limit the applicability of the findings to other regions with different legislative, economic, or cultural conditions. Ecological preferences and requirements may vary across countries, necessitating further studies focused on comparing markets in Central and Eastern Europe or beyond.

This research contributes to the development of theory and practice in the area of the marketing mix, particularly in the context of sustainable construction and ecological products. The findings suggest that the marketing mix must be adapted not only to the needs of various customer segments but also to current trends in sustainability and ecological solutions. Companies operating in the wooden building sector should consider the broader use of digital tools and interactive technologies to better communicate the value of their products and more effectively target their customer base. Additionally, the research provides insights for future studies that could focus on quantitatively measuring customer preferences, particularly in markets where ecological housing is not yet a dominant trend. The scientific contribution of this research also lies in identifying practical tools for optimizing the marketing mix in the wooden building sector, which can serve as a foundation for further research on sustainable marketing and ecological products. It also provides valuable information for practitioners in the construction industry who wish to adapt to the growing demand for ecological solutions. In the future, this research could be expanded to include regional analyses, empirical surveys, and long-term studies that would help better define trends in ecological construction and refine marketing strategies to meet market needs.

References

- Amiri, A., Emami, N., Ottelin, J., Sorvari, J., Marteinson, B., Heinonen, J., & Junnila, S. (2021). Embodied emissions of buildings - A forgotten factor in green building certificates. *Energy and Buildings*, 241, 110962. <https://www.sciencedirect.com/science/article/pii/S0378778821002462>
- Alfahaus, s.r.o. (2021). Marketingový mix vybrané společnosti. Bakalářská práce, Slezská univerzita v Opavě. Obchodně podnikatelská fakulta v Karviné. Available at: https://is.slu.cz/th/rmojv/OPF_B_2021_47239_Kocian_Adam.pdf [Accessed 22 Feb. 2023].
- Barášek, M. (2021). Marketingový mix konkrétního podniku. Bakalářská práce, Ambis vysoká škola, a. s. Katedra ekonomie a managementu. Available at: https://is.ambis.cz/th/d8sgn/Zaverecna_prace_-_Barasek.pdf [Accessed 22 Feb. 2023].
- Kocián, A. (2021). Marketingový mix vybrané společnosti. Bakalářská práce, Slezská univerzita v Opavě. Available at: https://is.slu.cz/th/rmojv/OPF_B_2021_47239_Kocian_Adam.pdf [Accessed 22 Feb. 2023].
- Kolb, J. (2011). Dřevostavby. Systémy nosných konstrukcí, obvodové pláště, 2. akt. vydání v České republice. Grada Publishing. ISBN 978-80-247-7115-1
- Nasiri, G. R., Deymeh, H., Karimi, B., & Miandoabchi, E. (2021). Incorporating sales and marketing considerations into a competitive multi-echelon distribution network design problem with pricing strategy in a stochastic environment. *Journal of Retailing and Consumer Services*, 62, 102646. <https://www.sciencedirect.com/science/article/pii/S0969698921002125>
- Othman, B., He, W., Huang, Z., Xi, J., & Ramsey, T. (2021). The effects on service value and customer retention by integrating after-sale service into the traditional marketing mix model of clothing store brands in China. *Environmental Technology & Innovation*, 23, 101784. <https://www.sciencedirect.com/science/article/pii/S2352186421004326>
- Petroch, M., & Walcher, D. (2021). Timber for future? Attitudes towards timber construction by young millennials in Austria - Marketing implications from a representative study. *Journal of Cleaner Production*, 294, 126324. <https://www.sciencedirect.com/science/article/pii/S0959652621005448>
- Reydet, S., & Carsana, L. (2017). The effect of digital design in retail banking on customers' commitment and loyalty: The mediating role of positive affect. *Journal of Retailing and Consumer Services*, 37, 132-138. <https://www.sciencedirect.com/science/article/pii/S0969698917301558>
- Shi, J., Yang, D., Zheng, Z., & Zhu, Y. (2022). Strategic investment for green product development and green marketing in a supply chain. *Journal of Cleaner Production*, 366, 132868. <https://www.sciencedirect.com/science/article/pii/S0959652622024611>
- Terho, H., Mero, J., Siutla, L., & Jaakkola, E. (2022). Digital content marketing in business markets: Activities, consequences, and contingencies along the customer journey. *Industrial Marketing Management*, 105, 294-310. <https://www.sciencedirect.com/science/article/pii/S0019850122001444>

- Toivonen, R., Vihemäki, H., & Toppinen, A. (2021). Policy narratives on wooden multi-storey construction and implications for technology innovation system governance. *Forest Policy and Economics*, 125, 102409. <https://www.sciencedirect.com/science/article/pii/S1389934121000150>
- Toppinen, A., Röhr, A., Pätär, S., Lähtinen, K., & Toivonen, R. (2018). The future of wooden multistory construction in the forest bioeconomy – A Delphi study from Finland and Sweden. *Journal of Forest Economics*, 31, 3-10. <https://www.sciencedirect.com/science/article/pii/S1104689916300952>
- Vaverka, J., Havířová, Z., & Jindrák, M. (2008). *Dřevostavby pro bydlení*. Grada Publishing. ISBN 978-80-247-2205-4
- Wichmann, J. R., Uppal, A., Sharma, A., & Dekimpe, M. G. (2022). A global perspective on the marketing mix across time and space. *International Journal of Research in Marketing*, 39(2), 502-521. <https://www.sciencedirect.com/science/article/pii/S0167811621000665>
- Yang, X., Lyu, H., Li, J., Fu, F., & Zhou, H. (2022). Comprehensive design for a vernacular wood house with energy-saving process. *Sustainable Energy Technologies and Assessments*, 53 (B), 102571. <https://www.sciencedirect.com/science/article/pii/S221313882200621X>