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MARKETING | RESEARCH ARTICLE

Green Business Innovation: Sustainable Business Model Development through Integration of Business Model Canvas, Design Thinking, and Islamic Business Ethics

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Abstract: This research aims to analyze the integration of Business Model Canvas (BMC), Design Thinking, and Islamic Business Ethics in the development of sustainable green business models. Through a qualitative approach using Computer-Assisted Qualitative Data Analysis Software (CAQDAS) and secondary data, this research highlights the potential of integrating these three concepts in creating a business model that is not only competitive but also ecologically, socially, and economically sustainable. The results show that BMC integration provides a structural foundation, Design Thinking facilitates creative innovation in the context of sustainability, and Islamic Business Ethics provides a strong moral framework to support the implementation and sustainability of such business models. Thus, this research provides an innovative contribution to fill the existing knowledge gap and blaze new trails in designing green business models that integrate sustainability and Islamic business ethics values.

Keywords: Business Model Canvas (BMC), Design Thinking, Islamic Business Ethics (EBI), Green Business, Innovation, Sustainability.

JEL Classification Code: D44, M20, O12

1. INTRODUCTION

In this era of globalization, business sustainability has become a significant focus among businesses and society. Green business innovation is becoming an increasingly important answer to the challenges of climate change, environmental degradation, and the demands of consumers who are increasingly aware of the ecological impact of products and services (Hennemann et al., 2021). Green business innovation, which refers to companies' efforts to develop business models that are not only competitive but also ecologically, socially, and economically sustainable, is becoming increasingly crucial amid societal demands and global pressures to address climate change and other environmental issues (Nahid et al., 2023). This research integrates three key dimensions, namely Business Model Canvas (BMC), Design Thinking, and Islamic Business Ethics, to build a sustainable green business model.

The Business Model Canvas (BMC) is a critical framework for designing and understanding the core elements of an organization's business model. It provides a holistic view of the business structure, identifying the value created, strategic partners, and resources required. In the context of green business innovation, the BMC provides the basis for integrating sustainability aspects into the business model, in line with the need for companies to become more environmentally and socially sustainable (Soegoto et al., 2023). Design Thinking is an innovative approach that places a deep understanding of user needs at its center (Chang, 2014). Through four stages involving empathy, definition, ideation, and prototyping, Design Thinking provides a foundation for developing creative and user-centric



solutions (Bosman, 2019). In the context of this research, Design Thinking is implemented to ensure that the resulting business model is not only environmentally sustainable but also meets the needs and values of stakeholders so that it can be more readily accepted and implemented.

Islamic Business Ethics brings a deep value and moral dimension to the green business innovation paradigm (Hartanto et al., 2023). The principles of Islamic business ethics, such as justice, sustainability, and balance, provide an ethical foundation for the development of business models that not only benefit companies financially but also socially and environmentally (Muhammad et al., 2019). In a global context that increasingly recognizes the importance of corporate social responsibility, the integration of Islamic Business Ethics is relevant, especially in responding to the needs of people who are increasingly concerned about the social and environmental impacts of business activities. Islamic Business Ethics brings a deep value and moral dimension to the green business innovation paradigm (Hartanto et al., 2023). The principles of Islamic business ethics, such as justice, sustainability, and balance, provide an ethical foundation for the development of business models that not only benefit companies financially, socially, and environmentally (Muhammad et al., 2019). In a global context that increasingly recognizes the importance of corporate social responsibility, the integration of Islamic Business Ethics is relevant, especially in responding to the needs of people increasingly concerned about business activities' social and environmental impacts (Maros & Juniari, 2016). Therefore, companies that can develop sustainable green business models not only have a competitive advantage but can also play a key role in building a more sustainable future.

In green business, a holistic approach involving BMC, Design Thinking, and Islamic Business Ethics is considered a significant step forward. By integrating BMC, companies can redesign the core elements of their business model with environmental and social impacts in mind. Design Thinking, with its focus on user needs, can help create innovative solutions that are not only sustainable but also in line with stakeholder values and preferences. Meanwhile, the integration of Islamic Business Ethics provides the necessary ethical foundation to ensure that green business innovations generate financial returns and create positive social and environmental value (Santoso et al., 2023; Udin et al., 2022). In a modern era characterized by climate change, environmental degradation, and sustainability consciousness, green business innovation is emerging as a crucial solution to global challenges. These innovations focus not only on green technology but also on the complete transformation of business models to impact the planet and society positively (Ariatin et al., 2022; Ariffin, 2021). Sustainability is at the core of this endeavor, shifting the business paradigm from an orientation towards financial gain alone to responsible practices towards the earth and society.

Green business innovation is essential in the context of environmental protection. By adopting environmentally friendly technologies and business practices, companies can actively reduce negative impacts on the global ecosystem. In addition, green business sustainability supports various countries' increasingly stringent legal and regulatory requirements. Compliance with environmental regulations reflects a company's responsibility to the environment and can build a positive image for customers, investors, and the government (Istiqomah, 2022). In this context, green business innovation is key to ensuring that companies not only comply with regulations, but also play an active role in leading positive change. A company's reputation and image are also influenced by its innovative green business efforts. Consumers who are increasingly aware of the impact of products and services on the environment tend to choose companies that have a commitment to sustainability (Soltani et al., 2015). Therefore, green business innovation is a sustainability strategy and a measure to build customer trust and create a competitive advantage in the market. Green business innovation also plays a crucial role in improving operational efficiency. By adopting more energy-efficient technologies and processes, companies can reduce their environmental impact and save operational costs in the long run. These efficiencies positively impact business sustainability, creating a continuum between economic gain and environmental preservation.

It is essential to recognize that green business is not limited to large enterprises but is also relevant at the Micro, Small, and Medium Enterprise (MSME) scale. By adopting green business models, MSMEs can become agents of change at the local level, creating job opportunities, improving community welfare, and reducing economic inequality (Ariffin, 2021; Asha'ari et al., 2023). The importance of green business innovation is also reflected in its attractiveness to investors. Modern

investors increasingly consider aspects of sustainability and social impact when selecting projects or companies to invest in. Therefore, companies that implement green business innovation can attract investors who have a long-term orientation and care about social responsibility. Research on "Green Business Innovation: Development of a Sustainable Business Model through the Integration of Business Model Canvas, Design Thinking, and Islamic Business Ethics" raises a significant research gap in the current literature. While there have been many studies that address the concepts of green business and sustainability, studies that embrace the integration of these three key dimensions, namely Business Model Canvas (BMC), Design Thinking, and Islamic Business Ethics, are still limited. This gap arises from a lack of comprehensive understanding of how these three concepts can interact with each other and support the development of effective green business models.

Firstly, much green business research tends to focus on one or two aspects of sustainability, while this research will open the door to a deeper understanding of how these three can synergize in a holistic manner (Hennemann et al., 2021; Nääs et al., 2016). The integration of BMC will provide the structural foundation, Design Thinking will facilitate creative innovation in the context of sustainability, and Islamic Business Ethics will provide a strong moral framework to support the implementation and sustainability of such business models. Secondly, although green business sustainability is receiving increasing attention, there has not been sufficient research combining this aspect of sustainability with Islamic business principles. This research will make an important contribution to the understanding of Islamic business ethics and how these values can be integrated into green business models. Thus, this research will not only fill the gap in the literature on the integration of BMC, Design Thinking, and green business sustainability, but also create a new space for understanding the role of Islamic Business Ethics in the context of green business innovation.

The novelty of this research lies in its comprehensive approach to green business model development. The combination of BMC, Design Thinking, and Islamic Business Ethics forms a holistic framework, enabling companies to design, implement, and sustain sustainable business models by considering economic, environmental, and social aspects. By combining the strategic dimensions of BMC, the creativity of Design Thinking, and the values of Islamic business ethics, this research makes an innovative contribution to filling the existing knowledge gap and blazing new trails in designing green business models that integrate sustainability and Islamic business ethics values. Through this research, it is expected to generate deep insights into how the integration of BMC, Design Thinking, and Islamic Business Ethics can form a sustainable green business model. Thus, this research not only makes a theoretical contribution to the business and sustainability literature, but also provides practical guidance for companies that want to take steps towards a more sustainable and innovative business model.

2. LITERATURE REVIEW

In recent years, the imperative for businesses to embrace sustainability and environmental responsibility has become increasingly pressing. This has led to the emergence of the concept of green business innovation, which seeks to integrate sustainable practices into business models. This literature review explores the intersection of green business innovation, sustainable business model development, and the integration of methodologies such as Business Model Canvas (BMC), Design Thinking, and Islamic Business Ethics (IBE). By examining existing literature, this review aims to elucidate the definitions, frameworks, and specific applications within this domain.

2.1. Definition of Green Business Innovation

Green business innovation refers to the process of integrating environmentally sustainable practices into all aspects of business operations, including product development, supply chain management, marketing, and corporate strategy (Horbach, 2020). It involves adopting practices that minimize environmental impact, conserve resources, and promote social responsibility, thereby contributing to the long-term viability of both the business and the planet (Schaltegger & Wagner, 2011).

2.2. Sustainable Business Model Development

Sustainable business model development involves designing business models that create value for stakeholders while simultaneously minimizing negative environmental and social impacts (Boons et al., 2013). This approach emphasizes the importance of aligning financial objectives with environmental and social goals, thereby ensuring the longevity and resilience of the business in a rapidly changing world (Stubbs & Cocklin, 2008).

2.3. Integration of Business Model Canvas, Design Thinking, and Islamic Business Ethics

The Business Model Canvas (BMC) is a widely used tool for visualizing and designing business models (Osterwalder & Pigneur, 2010). It provides a framework for identifying key components of a business, such as value proposition, customer segments, channels, and revenue streams. Design Thinking, on the other hand, is a human-centered approach to innovation that emphasizes empathy, creativity, and iterative prototyping (Brown, 2008). By integrating BMC with Design Thinking principles, businesses can develop sustainable business models that address the needs and preferences of diverse stakeholders (Osterwalder et al., 2014). Furthermore, the integration of Islamic Business Ethics (IBE) offers a unique perspective on sustainability, emphasizing principles such as social justice, equity, and environmental stewardship (Hassan, 2015). By incorporating IBE into the design process, businesses can ensure that their practices are not only environmentally sustainable but also ethically and socially responsible.

2.4. Literature Review

Numerous studies have explored various aspects of green business innovation and sustainable business model development. For example, Schaltegger and Wagner (2011) conducted a comprehensive review of literature on sustainable business models, highlighting the importance of integrating environmental and social considerations into business strategy. Boons et al. (2013) examined the role of collaborative business models in promoting sustainability, emphasizing the need for partnerships and cooperation among stakeholders. Osterwalder and Pigneur (2010) introduced the Business Model Canvas as a practical tool for designing innovative business models, while Brown (2008) advocated for the adoption of Design Thinking principles to foster creativity and user-centered innovation. Moreover, the integration of Islamic Business Ethics into sustainable business model development has gained attention in recent years. Hassan (2015) explored the compatibility of Islamic principles with environmental sustainability, arguing that Islamic finance and business practices offer a viable alternative to conventional models. Additionally, Hasan et al. (2017) proposed a framework for integrating Islamic ethics into business model design, highlighting the importance of values such as fairness, transparency, and accountability.

3. RESEARCH METHOD AND MATERIALS

This research will use a qualitative research method with a Computer-Assisted Qualitative Data Analysis Software (CAQDAS) approach using secondary data as the main research source. This approach was chosen to gain an in-depth understanding of how green business innovation can be realized through the development of a sustainable business model, by combining Business Model Canvas (BMC), Design Thinking, and Islamic Business Ethics.

First, this research analyzed secondary data through a comprehensive literature review. The relevant literature includes information on Business Model Canvas (BMC), Design Thinking, Islamic Business Ethics, green business innovation, and sustainable business models. This literature analysis will provide a strong framework for understanding key concepts and interactions between research keywords. Furthermore, secondary data will also be obtained from sources such as business sustainability reports, green business model implementation case studies, and related publications during the research period in the last ten years. This data will provide concrete insights into how certain companies or organizations have integrated BMC, Design Thinking, and Islamic Business Ethics in the development of sustainable business models. This secondary data collection was

conducted to gain an in-depth understanding of green business practices that have proven successful or encountered certain challenges. The CAQDAS approach was used in this secondary data analysis. CAQDAS software will assist in the efficient transcription, categorization and coding of the data (Carcary, 2011; Woods et al., 2016). The main categories will include aspects such as BMC integration, Design Thinking strategies applied, and implementation of Islamic Business Ethics in the context of green business innovation. The data analysis process will include identifying thematic patterns, relationships, and dynamics among key concepts expressed in the literature and secondary data (Teixeira & Becker, 2001). The use of CAQDAS will facilitate the management of complex data and allow researchers to engage in in-depth thematic analysis methods.

This research methodology was strengthened by using Nvivo 12 Plus and Vosviewer software as additional analysis tools to deepen understanding and increase the validity of the research findings. After conducting a literature review and collecting secondary data sources, this research utilized Nvivo 12 Plus to conduct an in-depth text analysis of relevant documents and articles. Nvivo 12 Plus allows researchers to conduct more systematic qualitative analysis with features such as categorization, coding, and thematic analysis. In particular, the use of coding in Nvivo 12 Plus will facilitate the identification and tracing of key themes related to BMC, Design Thinking, and Islamic Business Ethics in the literature. In addition to Nvivo 12 Plus, this research will engage Vosviewer as an analytical tool to explore and visualize the concept networks and interrelationships between keywords that appear in the literature. Vosviewer will provide a more thorough picture of the conceptual framework and facilitate understanding of the extent to which the literature supports the integration of BMC, Design Thinking, and Islamic Business Ethics in the context of green business innovation.

Overall, this research method is designed to combine the advantages of qualitative analysis with the efficient capabilities of CAQDAS in managing and analyzing secondary data. This approach is expected to provide a holistic understanding of how the integration of BMC, Design Thinking, and Islamic Business Ethics can shape sustainable green business innovation. As such, this research is expected to provide valuable insights for practitioners, researchers, and other stakeholders interested in the development of business models that support sustainability and Islamic business ethics.

4. RESULTS AND DISCUSSION

In an era of environmental uncertainty and increasing demands for sustainability, green business is coming into sharp focus as a solution to global challenges. The process of identifying the need for innovation in green business requires a deep understanding of market dynamics, government regulations, and changing consumer expectations. Innovation is not only needed to respond to market demands, but also to lead the change in a more sustainable business paradigm. The author analyzes the related literature review in integrating Business Model Canvas (BMC), Design Thinking, and Islamic Business Ethics, as a strategy to build a sustainable green business model. The authors identify based on the results of research that has been published in reputable international scientific journals that have been indexed by Scopus during the period 2013-2023.

Table 1. Data Information

No.	Keywords	Results
1	Business Model Canvas (BMC), Design Thinking, Islamic Business Ethics,	0
2	Business Model Canvas (BMC), Design Thinking	0
3	Business Model Canvas (BMC), Eti Islamic Business Ethics,	35
4	Business Model Canvas (BMC), Green Business	17

Based on the search results in the Reputable International Journal database shown in table 1, it can be concluded that there are no studies that specifically combine the three keywords, namely Business Model Canvas (BMC), Design Thinking, and Islamic Business Ethics. This result indicates that the international scientific literature has not fully explored the interaction and interrelationship of the three concepts in a series of studies. However, there are 17 studies that discuss Business Model Canvas (BMC) and Green Business, and 35 studies that focus on Business Model Canvas (BMC) and Islamic Business Ethics. This shows that the scientific literature has paid special attention to the

relationship between BMC and Design Thinking, as well as BMC, Green Business, and Islamic Business Ethics, although not involving all three concepts simultaneously.

The existence of research results related to Business Model Canvas (BMC) and Design Thinking indicates an interest in understanding the relationship between the concept of business model design and the design thinking approach. On the other hand, the results related to BMC and Islamic Business Ethics show an attempt to understand the concept of sustainable business by incorporating Islamic ethical values in business models. While the integration of these three concepts has not been the focus of significant research, these findings provide a foundation for further research that can delve into them. Therefore, there is an opportunity to develop more comprehensive research that integrates Business Model Canvas, Design Thinking, and Islamic Business Ethics. Such research can provide deeper insights into how these three concepts reinforce each other in the context of developing sustainable and ethical business models. Thus, future research can fill this literature gap and provide a more holistic view of business innovation that includes aspects of design, sustainability, and ethics.

One of the key requirements for green businesses is increased energy efficiency ((Bosman, 2019). Companies need to find innovative ways to manage and optimize their energy consumption (Nääs et al., 2016). Renewable energy technologies are becoming a key solution in response to this challenge. Innovations in the development and utilization of technologies such as solar panels, wind turbines, and energy storage technologies provide the foundation for the shift towards clean and sustainable energy (Pornparnomchai & Rajchamaha, 2021). Energy efficiency can also be achieved through the application of the Internet of Things (IoT) in business operations (Dos Reis et al., 2019). Sensors and connected devices can help monitor and optimize energy use across the value chain, providing real-time data for better decision-making (Alsharidah & Alazzawi, 2023). Such innovations provide a solid foundation for achieving sustainability targets and reducing a company's carbon footprint.

On the other hand, sustainable product design is an urgent need in green business. Innovation in design includes the selection of recyclable raw materials, development of products with longer life cycles, and creative thinking in creating products that are not only environmentally friendly but also meet consumer needs. The concept of circular design, where products are designed to be recycled or decomposed after use, is a key innovation in minimizing the environmental impact of products.(Mohd et al., 2018). In a society that is increasingly aware of environmental issues, consumers are demanding products that are not only quality but also take sustainability into account. Innovations in product design that integrate green technologies, such as eco-friendly materials and modular design for easy repair, are progressive steps towards sustainability. Effective waste management is an important aspect of green business. Innovation in the approach to waste involves implementing efficient recycling systems, waste reduction, and reuse of materials (Hennemann et al., 2021). Companies need to find ways to reduce waste throughout the value chain, including in the production process and product packaging. Innovative technologies such as biotechnology-based waste processing, more efficient recycling methods and circular-based approaches can help green businesses achieve their goals in managing waste (Hadi et al., 2023). In addition, innovations in the marketing of recycled products and reuse programs can provide additional impetus in reducing the environmental footprint.

The use of green technology is a key ingredient in creating an effective green business (Oktoyoki et al., 2021). Innovation in technology includes the adoption of the latest technologies to improve operational efficiency and reduce environmental impact. The Internet of Things (IoT) can be used not only to manage energy, but also to monitor and optimize the use of other resources such as water and raw materials (Islam & Iyer-Raniga, 2023). Ideas related to blockchain technology can help create transparent and accountable supply chains, ensuring that the entire supply chain of green businesses adheres to sustainability standards. In addition, smart technology and artificial intelligence (AI) can be used to analyze big data generated by business operations, providing deep insights for better decision-making (Guma et al., 2019). Innovation in green business often requires an ecosystem-based approach. Collaboration with business partners, governments, research institutions and communities is an innovative step towards creating holistic solutions to sustainability challenges. This approach not only includes collaboration within the supply chain, but also involves external stakeholders to create an ecosystem that supports green business.

Partnerships with governments can help create regulations that support green business practices and provide incentives for companies to innovate. Collaboration with research institutions can provide access to the latest knowledge and new technologies. In addition, engaging communities in sustainability initiatives can build broader support and awareness of environmental issues. Innovation in transparency and business responsibility is important to create consumer trust. Green businesses need to commit to adopting open and transparent business practices, and innovations in technology such as blockchain can support accountable reporting. Comprehensive sustainability reporting that is easy for consumers to understand can help create a positive image for companies. In addition, innovations in green business communications can include marketing campaigns that emphasize sustainability, improving relationships with consumers who are increasingly aware of environmental issues.

Innovation not only occurs at the product and process level, but also involves innovation in corporate culture. Employee education and awareness about sustainability and green business practices can shape a sustainable mentality throughout the organization. Employee training on green business practices, corporate social responsibility and the importance of sustainability can create a work environment that supports positive change. Employees who are educated and engaged in sustainability initiatives can be effective change agents within the organization. Investment in research and development is a key element in driving further innovation in green business. Companies need to allocate resources for research and development of new technologies, eco-friendly raw materials, and more sustainable production methods. Innovations stemming from research and development can create breakthroughs in green business practices, open new opportunities and provide a competitive advantage. Partnerships with research and development institutions can accelerate the innovation process, provide access to the latest knowledge, and facilitate the exchange of ideas.

Innovation in stakeholder relations is a key step to creating a successful green business. Stakeholders include customers, investors, governments, and the public. Green businesses need to develop innovative strategies in communicating and interacting with these groups. Involving stakeholders in the decision-making process and listening to their input can create greater support for green business practices. Innovation in engagement and participation can create sustainable relationships, build trust, and create long-term value for all parties involved. In identifying the need for green business innovation, it is apparent that innovation is not limited to a single aspect of business. Rather, effective innovation requires a holistic approach that encompasses multiple business dimensions and external factors. Green businesses that can respond to these needs with effective innovation will have a competitive advantage in facing future sustainability challenges and opportunities.

By integrating innovations in energy efficiency, sustainable product design, effective waste management, use of green technologies, ecosystem-based approaches, transparency and responsibility, employee education and awareness, investment in research and development, resilience to climate change, and effective relationships with stakeholders, green businesses can shape a more sustainable future. Innovation is not only a tool to respond to current needs, but also to shape the direction of the green business journey towards long-term sustainability.

4.1. BMC in the Context of Green Business

The Business Model Canvas (BMC) is emerging as an indispensable instrument in driving business transformation towards sustainability in the green business era (Jamira et al., 2021). Sustainability is no longer an ancillary issue, but at the core of strategic planning and business model development. BMC provides a highly relevant and effective framework, enabling companies to look at the business as a whole and embed sustainability principles in every key element (Islam & Iyer-Raniga, 2023). In its implementation, BMC plays a crucial role in enabling companies to describe and design business models holistically. BMC opens space for companies to explore each element of the business model with an eye on its impact on sustainability. For example, in a BMC setting, a company can redesign its distribution channels to reduce environmental impacts. This thinking is in line with the understanding that changes in distribution channels can bring significant contributions to carbon footprint reduction and environmental efficiency (Seuring & Müller, 2008).

Key elements such as key partners, distribution channels, customer relationships and key resources are the focus of restructuring within the BMC to reflect green business practices. By considering the sustainability impact on each of these elements, companies can adopt strategies that align with their sustainability goals. Companies can seek out partners who share their commitment to sustainability, opening collaboration opportunities that can improve environmental and social performance.

In addition, the BMC also provides guidance for companies to customize their customer relationships with a sustainability-focused approach. By understanding customer preferences for environmentally friendly products and services, companies can increase customer satisfaction and build customer loyalty. This practice is in line with literature findings that emphasize the importance of understanding consumer demand for products and services that support sustainability (Luchs & Mooradian, 2012). The results of the matrix analysis relating to the keywords green business and BMC resulted in the following analysis.

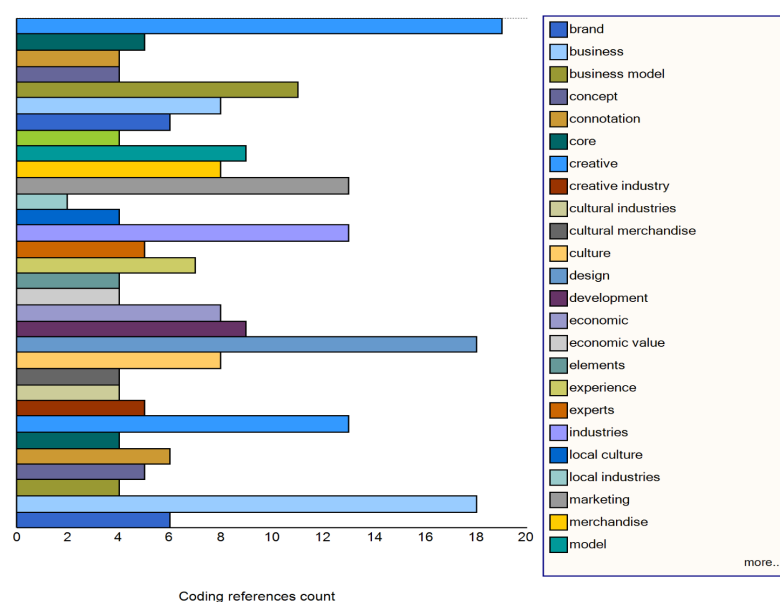


Figure 1. Matrix Coding Analysis on Green Business and BMC

The results of the coding analysis in Figure 1 of the research keywords, Business Model Canvas (BMC) and Green Business, reveal a few findings that substantially support and provide insights in relation to the relationship between the two. In the context of BMC and Green Business, the findings involve aspects that span multiple dimensions, opening a deeper understanding of the complexity of green business model integration. Elements such as brand and business model are critical in forming the foundation of a business model. The brand reflects a company's identity and how it wants to be recognized by the market. Meanwhile, a business model is a strategic framework that determines how a company generates, delivers and extracts value from the products or services it offers (Istiqomah, 2022). The keyword "brand" highlights the importance of image building and brand identity in BMC and Green Business. In the world of green business, a strong brand not only creates a clear understanding of the sustainable values espoused, but also increases consumer awareness of the positive impact the business is trying to achieve. Thus, the results of this coding analysis illustrate the complexity and interconnection between various key elements that influence the application of BMC in the context of green business.

Furthermore, "business model" and "concept" emerged as the main focus, indicating that BMC is not only understood as a business model development tool, but also as an integral concept inherent in green business development strategies (Guma et al., 2019). This means that the BMC not only helps detail the elements of a business, but also guides the conceptualization of a sustainable business strategy. The "core" aspect is a key cornerstone in BMC and Green Business, describing the core of a green business centered on sustainable values. This deep understanding of the green business core is key to ensuring that the BMC truly reflects the company's desired sustainability goals. In addition, "creative industries" and "cultural industries" highlight the important role of BMC and Green

Business in supporting the growth of the creative and cultural sectors. Innovative green business models can be a driver of economic growth in these sectors, while considering the positive impact on cultural and creative aspects. "Design" was raised as an equally important aspect, showing that design is not only related to visual aesthetics, but also to the overall business design to achieve sustainability and efficiency. Design becomes a key element in shaping the BMC to match the desired green values. On the other hand, "local culture" emphasizes that BMC and Green Business can give special emphasis to local values and culture. The integration of these values is essential to achieve sustainability that has relevance and acceptance at the local level.

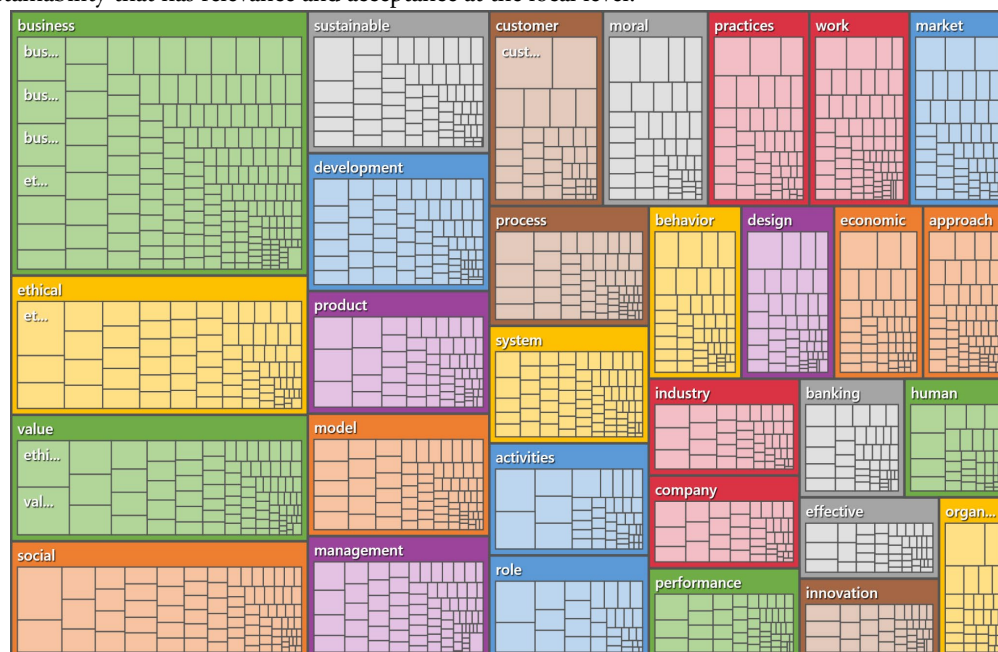


Figure 2. BMC and Green Business Mapping Matrix

Figure 2 shows the results of the thematic analysis of the Mapping Matrix using Nvivo 12 Plus on the data that has been presented. The results of this analysis reveal that there are five dominant keywords that significantly support the Business Model Canvas (BMC) context in green business. The five keywords are "business," "ethical," "value," "social," and "sustainable." In this context, the keyword "business" reflects the focus on the business aspects of applying the BMC to green business. This includes elements such as key partners, distribution channels, and key resources that are integrated into the business model to achieve sustainable goals. The use of the keyword "ethical" highlights the importance of business ethics and moral values in the development of green business models. This reflects the need to ensure that the sustainable business practices promoted by BMC also adhere to high ethical standards. Furthermore, the keyword "value" indicates that BMC in green business is not only concerned with economic sustainability, but also with providing added value to all stakeholders. This includes providing value to customers through sustainable products or services as well as providing value to the surrounding community and environment. The keyword "social" emphasizes the importance of social aspects in the BMC, which includes positive impact on society and social engagement in the development of the business model. Finally, the keyword "sustainable" shows that sustainability takes center stage in the application of BMC to green businesses. This includes efforts to create a business model that not only survives in the short term but also contributes to long-term sustainability, both in terms of economic, environmental, and social aspects. This thematic analysis provides deep insights into the key elements that need to be considered in integrating BMC in green business. These five dominant keywords provide a comprehensive framework to guide the understanding and application of BMC that focuses on sustainability and sustainable values. In addition, the results of this analysis can serve as a foundation for the development of a more holistic and effective green business model, ensuring that business practices cover critical aspects in achieving overall sustainability.

The application of the Business Model Canvas (BMC) to green businesses, although recognized as having great potential to improve the sustainability and effectiveness of the green economy, is not free from some weaknesses that need to be considered. One of the main weaknesses that can be identified is the difficulty in identifying and optimizing business components that are considered crucial in the context of green business (Zailan & Dahlan, 2019). In an environment that emphasizes sustainable practices, finding and optimizing the elements of business that underpin sustainability can be a serious challenge. Inability to address these challenges can hinder the progress of green business and the achievement of desired green economy goals.

Another noteworthy drawback is the potential for business models that are less suited to the specific dynamics and policies governing the green business industry. Inappropriate or inadequate application of BMC may result in business models that are not fully relevant or effective in addressing day-to-day business challenges, including intense competition, rapid market changes, and rivalry with other competitors. Therefore, it is important to consider the specific aspects and uniqueness of green businesses in the application of BMC in order to create a responsive and contextually appropriate business model.

Nonetheless, the successful application of BMC to green businesses depends not only on the quality of the use of this tool but also on the level of understanding and support received from various relevant parties. Stakeholders, customers and marketers who lack sufficient understanding or support can be a serious obstacle to implementing BMC effectively. In particular, in the context of green businesses that often rely on broad commitments to support sustainable business practices, lack of understanding and support can hinder the development and success of the business model. Despite these weaknesses, implementing BMC in green businesses still provides significant opportunities to optimize the business and improve the level of sustainability. One critical step to overcome these weaknesses is to make adjustments and improvements to the business model to better suit each company's specific conditions and policies. This process enables green businesses to achieve more effective sustainability and economic efficiency.

Business model adjustments are also a strategic step to address real business challenges. By dynamically responding to market and competitive changes, green businesses can remain relevant and competitive in a changing business environment. Therefore, the implementation of BMC remains of high strategic value as a tool to support the transformation of green businesses towards a more sustainable and economically efficient model. In this context, it is important to recognize that in-depth research and understanding of green business dynamics, market needs, and policies governing the industry are key to success in BMC implementation. The integration of these concepts in BMC will ensure that the resulting business model is not only compliant with sustainability principles, but also responsive to evolving market needs and demands. As such, the application of BMC remains a valuable tool to support the evolution of green businesses, helping to ensure that these businesses not only survive, but also thrive and make a positive impact on the environment and society.

4.2. Research Instrument Testing

Design thinking is a creative approach that focuses on solving problems and generating innovative solutions by integrating elements such as empathy, definition, ideation, prototyping, and testing. The focus of this approach is the user or consumer, which helps to ensure that the solutions produced are more targeted and in line with user needs. In the context of green business innovation, the application of design thinking is crucial to optimize user experience, develop innovative products and services, and influence entrepreneurship skills. One of the significant benefits of design thinking in green business innovation is its ability to improve user experience. (Kittichosatsawat et al., 2023). By deeply understanding users' needs, preferences and challenges, companies can design products and services that not only meet expectations but also provide added value in supporting sustainable lifestyles. Through this approach, companies can identify aspects that require more attention, including the sustainability and environmental impact of the products or services they offer.

Design thinking also opens opportunities to develop innovative products and services in green business. By incorporating ideation and prototyping phases, companies can explore new ideas that have not been thought of before. This is especially important in the context of green business where

complex environmental challenges require creative and unconventional solutions. The application of design thinking allows companies to "think outside the box" and create solutions that can have a positive impact on the environment. In addition, design thinking can also influence ecopreneurship skills, which is the ability to combine sustainable business practices with innovation. In this context, a design thinking approach can involve stakeholders in the process of developing a green business product or service, creating a collaboration that benefits all parties. A deep understanding of user needs and values can also provide a foundation for companies to develop more effective and sustainable marketing strategies.

The application of design thinking in green business innovation requires thorough research and the use of observation and interview techniques. Through this research, companies can identify the root causes underlying environmental challenges and then design more effective solutions. This process creates a deep understanding of the problems, so that the solutions are not superficial but truly address the root causes. Design thinking can also be used to create business sustainability for companies in the context of green business. By incorporating prototyping and testing stages, companies can identify the potential impact of proposed solutions and measure long-term sustainability. In this case, design thinking is not only a tool to address current problems but also to create strategies that can maintain overall business sustainability.

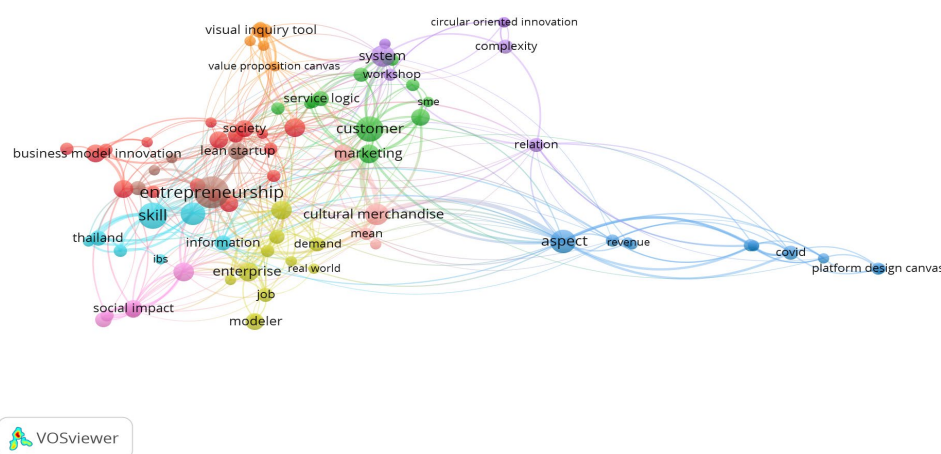


Figure 3. Design Thinking Network Analysis

The results of the research analysis, shown in Figure 3, provide an interesting picture of the interconnectedness of design thinking elements with various other aspects in the context of business and innovation. Key elements such as empathy, definition, ideation, prototyping and testing, which are at the core of the design thinking approach, are interlinked with a number of concepts and dimensions in the green business domain. Related green business development concepts include business model innovation, entrepreneurship, enterprise, skills, cultural merchandise, and service logic.

Design Thinking, as a human-focused and empathetic approach, has emerged as a tool that not only shapes green business sustainability but also drives significant innovation. In the context of green business, where sustainability and environmental considerations are increasingly becoming a key focus, Design Thinking brings an important role in identifying, designing, and implementing solutions that not only benefit the business but also minimize negative impacts on the environment.

Design Thinking is an approach that prioritizes a deep understanding of user needs and combines it with creative aspects to produce innovative and sustainable solutions. In the context of green business, where society and markets are increasingly aware of social and environmental responsibility, Design Thinking is a key enabler for companies to understand and respond appropriately to these demands.

One important aspect of Design Thinking's role is its ability to help understand user needs. By emphasizing empathy as a key element, Design Thinking ensures that green business innovations are not simply a response to market trends, but truly reflect the wants, values and needs of users. In terms

of green business, this means identifying how a product or service can provide tangible benefits in supporting sustainable lifestyles and minimizing environmental impact.

First, the element of empathy, which is a key foundation in design thinking, appears to be closely related to the concept of business model innovation. A deep understanding of user needs gained through empathy can be a key driver for developing innovations in business models. Through a better understanding of user perspectives, companies can create business models that are more adaptive and responsive to evolving market demands, particularly in the context of green business.

Design Thinking plays a key role in developing innovative solutions. The creative and open approach of Design Thinking stimulates thinking beyond conventional boundaries. In green business, where environmental challenges are often complex, it requires innovative thinking to formulate effective solutions. Design Thinking teaches that by investigating unexplored ideas and incorporating unexpected elements, companies can find new ways to run their operations sustainably. The ideation, and prototyping aspects of design thinking are related to entrepreneurship and skills. The process of defining problems, generating ideas, and creating prototypes requires strong entrepreneurial skills. The design and testing of innovative solutions involves elements of entrepreneurship, which includes the ability to identify opportunities, manage risks, and effectively execute green business initiatives.

It is also important to understand that Design Thinking not only brings benefits to the company internally, but also to users and the environment. By ensuring that solutions involve users at every stage of development, companies can increase the adoption of their products or services and ensure that sustainability is not just empty words, but an implemented reality. Testing solutions through prototypes also has a significant link to service logic, given the importance of ensuring that the innovations developed are not only business effective but also provide added value to consumers. Therefore, design thinking not only plays a role in creating innovative products or services but also in integrating the value-added dimension for users, which is aligned with a more holistic service logic. In an enterprise context, the elements of design thinking are also related to the concept of cultural merchandise. Product or service design that focuses on sustainability and positive environmental impact requires a deep understanding of cultural values and consumer preferences. Therefore, cultural merchandise becomes relevant in linking the elements of design thinking to the green business context, where cultural aspects and community values can influence the acceptance of innovations.

Vosviewer's network analysis shows that the linkages between the keyword elements are not limited to one dimension of business or innovation, but involve complex relationships that integrate critical aspects of creating a sustainable green business. The network analysis reflects that design thinking does not stand alone but is integrated with broader business concepts, providing support for holistic green business development.

Through several literature reviews, there are critical findings that support the important role of Design Thinking in green business innovation. A study conducted by McKinsey & Company in 2010 showed that companies that adopt Design Thinking in developing green business innovation can increase their revenue by 20-30%. This highlights that not only sustainability can be achieved, but also the potential for significant economic growth through the application of Design Thinking principles. A study from the Boston Consulting Group in 2017 adds another dimension by showing that companies that use Design Thinking to develop green business innovations can reduce their costs by 10-15%. This reflects the efficiency that can be achieved through good design thinking, where solutions are found to be not only sustainable but also economically efficient. A study conducted by Harvard Business School in 2018 emphasized the aspect of customer satisfaction. The study showed that companies that use Design Thinking to develop green business innovations can increase their customer satisfaction by 10-15%. This highlights that not only do businesses benefit, but consumers also feel the added value of products and services developed with a design-based approach. Given these complex interrelationships, companies and stakeholders in green business contexts can design more targeted innovation strategies. The use of design thinking can be better integrated in the development of innovative business models, the application of sustainable entrepreneurship, and the enhancement of skills needed to meet the challenges and opportunities in the green business ecosystem. In order to effectively apply design thinking, companies must also be open to the possibility of change and adapt to research results and user feedback. This flexibility allows companies to continuously improve and

The World Economic Forum study in 2022 states that companies that implement Islamic business ethics are more likely to survive and thrive in the future, with better financial performance. This shows that business sustainability is not only measured in financial terms, but also from the perspective of operational sustainability and long-term growth. In fulfillment of the research objectives, the application of Islamic business ethics can help businesses develop sustainable business models by considering environmental, social, and economic aspects. Improving business performance, both in financial and non-financial terms, is the result of applying Islamic business ethics, which includes efficiency, competitiveness, corporate image, customer satisfaction, and new business opportunities. This can be seen based on the visualization results of the following network map analysis.



Figure 5. Network Analysis Islamic Work Ethic

Figure 5 shows the impact of implementing Islamic business ethics on business sustainability. The close relationship between "business performance" and "Islamic work ethic" shows that Islamic values and ethics not only affect operational efficiency and business competitiveness but also shape a sustainable work culture. The implementation of Islamic business ethics can improve efficiency, competitiveness, corporate image and create new business opportunities. The focus on "Islamic work ethic" reflects how Islamic values take root in work behavior, strengthen team integrity, and increase customer satisfaction. Overall, Islamic business ethics is the foundation for business sustainability and positive green practices.

Moreover, these findings have positive implications for green business practices. Businesses can use Islamic business ethics as a guide to develop more environmentally friendly products and services, encourage employees to act responsibly towards the environment, and build better relationships with stakeholders, including the community and government. In other words, the implementation of Islamic business ethics not only has a positive impact on business sustainability but also opens opportunities to improve green business practices. As public awareness of environmental issues increases, businesses that adhere to the principles of Islamic business ethics can play a key role in driving the transformation towards more sustainable and ethical businesses. So, overall, the implementation of Islamic business ethics is a crucial step for businesses that want to be positive contributors to sustainability and implement green business practices.

4.4. Integration of BMC, Design Thinking, and Islamic Business Ethics

The integration of BMC, Design Thinking, and Islamic Business Ethics is a step forward to creating a holistic and sustainable business model. The Business Model Canvas (BMC) provides the foundation for designing a comprehensive business model, while Design Thinking stimulates product and service innovation by focusing on user experience. On the other hand, Islamic Business Ethics ensures that Islamic values and principles are incorporated in all aspects of business.

The incorporation of these three concepts has a significant positive impact. The use of BMC enables companies to have a better understanding of key business elements, while Design Thinking encourages the development of innovative solutions through a deep understanding of user needs. Islamic Business Ethics provides a strong ethical framework to ensure that all steps taken are in line with Islamic principles. The author analyzes the advantages and challenges of implementing the Integration between BMC, Design Thinking, and Islamic Business Ethics which can be seen in table 2 below.

Table 2. Advantages and Challenges of Integrating BMC, Design Thinking, and Islamic Business Ethics

Aspect	Synergies/Excess Integration	Integration Challenges
BMC as a Platform	<ol style="list-style-type: none"> 1. -Holistic understanding of BMC, involving EBI (Islamic Business Ethics) values 2. Identification of business elements with Islamic ethical aspects 	<ol style="list-style-type: none"> 1. Difficulty integrating EBI values. 2. Perception and application in organizational culture
Design Thinking for Innovation	<ol style="list-style-type: none"> 1. User empathy for innovative solutions, 2. Continuous innovation according to EBI values 	Over-complexity and resource investment
EBI as an Ethical Guide	<ol style="list-style-type: none"> 1. Ethical guidance on Islamic values in business 2. Application of EBI values in every aspect of Business 	Value divergence between EBI and business needs.
Advantages of Integration	<ol style="list-style-type: none"> 1. Business sustainability and efficiency, 2. Value-based innovation for customer satisfaction, 3. Market alignment and competitiveness 	<ol style="list-style-type: none"> 1. Difficulty implementing and changing organizational culture. 2. Limited resources for complex integration 3. Potential divergence of values between EBI and the Organization

Table 2 shows the synergies, advantages, and challenges of integrating BMC, Design Thinking, and Islamic Business Ethics. The synergy between the three approaches creates a solid foundation for the development of a business model that is not only operationally effective but also ethical and sustainable. By combining BMC, Design Thinking, and Islamic Business Ethics, companies can achieve a level of synergy that brings positive impact. BMC provides a framework for designing business models holistically, Design Thinking drives product and service innovation with a focus on user needs, while Islamic Business Ethics provides a strong ethical foundation. The combination of the three creates a business model that considers operational aspects, creativity, and ethical values.

The advantages of this integration manifest in several ways. First, companies can optimize user experience through a deep understanding of user needs, which is obtained through the Design Thinking approach. Second, the business model developed can become more innovative and relevant by integrating key elements through BMC. Thirdly, Islamic Business Ethics provides an essential ethical dimension, ensuring that all aspects of the business are in line with Islamic values. This integration brings great benefits, including optimization of user experience, development of innovative products and services, and building positive reputation and customer trust. By embracing BMC, companies can design efficient business models, while Design Thinking helps create more relevant and innovative products and services. Meanwhile, Islamic Business Ethics adds a very important ethical dimension to sustainability and corporate social responsibility. However, as is the case with many concept integrations, there are challenges that may be faced. One is the limitation in accommodating sustainability aspects, where the focus on BMC and Design Thinking may not explicitly consider the environmental and social impacts of business decisions. Evaluation of environmental impacts can also be challenging, given the complexity of the interaction between business models and the environment. Finally, reliance on conventional market assumptions can be an obstacle in adopting the unique values and principles of Islamic Business Ethics.

To address these challenges, companies need to take proactive measures. This could involve integrating sharper sustainability indicators in the BMC, continuous monitoring, and evaluation of the environmental impact of products and services through Design Thinking approaches, and a cautious approach to markets that may not fully understand or appreciate Islamic values. By understanding the advantages and challenges of integrating BMC, Design Thinking, and Islamic Business Ethics, companies can achieve an optimal balance between operational effectiveness, product

innovation, and social responsibility. This is a vital step in building a business model that is not only economically profitable but also in line with ethical values and sustainability.

5. CONCLUSION

In the context of research on the development of sustainable green business models through the integration of Business Model Canvas (BMC), Design Thinking, and Islamic Business Ethics, it can be concluded that the integration of these three concepts has great potential to create business models that are not only competitive but also ecologically, socially, and economically sustainable. This research highlights the importance of understanding how these three concepts reinforce each other in the context of developing sustainable and ethical business models.

First, the integration of BMC provides the necessary structural foundation in designing sustainable business models. By understanding the core elements in a business model through BMC, companies can clearly map out how value is created, delivered, and captured in the context of sustainability. This provides a strong foundation to ensure that the business model developed is not only financially profitable but also considers its impact on the environment and society. Second, Design Thinking facilitates creative innovation in the context of sustainability. With its people-oriented and problem-solving approach, Design Thinking enables companies to identify innovation opportunities that take sustainability into account. In an era of environmental uncertainty and increasing sustainability demands, innovation is key in developing business solutions that are responsive to global challenges.

Third, Islamic Business Ethics provides a strong moral framework to support the implementation and sustainability of green business models. By incorporating Islamic ethical values in business models, companies can ensure that their business practices conform to the principles of fairness, sustainability, and blessings. This not only creates trust among stakeholders but also ensures that the business contributes positively to society and the environment. Thus, this research provides an innovative contribution to fill the existing knowledge gap and blaze new trails in designing green business models that integrate sustainability and Islamic business ethics values. Through a qualitative approach using Computer-Assisted Qualitative Data Analysis Software (CAQDAS) and secondary data, this research provides deep insights into how the integration of BMC, Design Thinking, and Islamic Business Ethics can shape a sustainable green business model. As such, this research not only makes a theoretical contribution to the business and sustainability literature, but also provides practical guidance for companies looking to take steps towards more sustainable and innovative business models.

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