

## Building a Strong Image Logo Design: Human Centered Design Approach in Logo Design for SMEs in Pematang Serai Village

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### ABSTRACT

This article delves into the pivotal role of Human-Centered Design (HCD) in logo development, specifically tailored for Small and Medium-sized Enterprises (SMEs) situated in Pematang Serai Village. Recognizing the essence of building a robust brand image, the study explores how HCD principles influence the entire process of logo design, from conceptualization to implementation. The exploration begins by emphasizing the iterative and user-centric nature of HCD, which ensures continuous refinement of logos based on user feedback. Visual elements are dissected for their impact on audience perception, acknowledging logos as significant visual cues influencing consumer behavior. Cultural considerations take center stage as the study draws insights from cross-national logo evaluation analysis, emphasizing the need to tailor logos to specific cultural contexts. This is particularly relevant for SMEs in Pematang Serai Village, ensuring resonance with the local community. The article concludes by offering actionable recommendations for SMEs, advocating for a continued user-centric approach, emphasis on visual appeal, cultural sensitivity, iterative refinement, and strategic logo implementation. It underscores the importance of these principles in creating logos that not only visually captivate but also emotionally connect with the target audience, thereby contributing to sustained business success

## **INTRODUCTION**

The presence of Small and Medium Enterprises (SMEs) in rural villages plays a crucial role in the development of these areas. SMEs are not only vital for generating employment opportunities but also for creating wealth and reducing poverty in rural regions of developing countries (Manzoor et al., 2021). However, the optimal functioning of SMEs in these areas is still a challenge, and their potential to create jobs, increase income, and improve the welfare of villagers remains underutilized.

One of the key factors influencing the performance of SMEs in rural areas is their access to finance. Manzoor et al. (2021) highlighted the significance of SMEs' access to finance in rural development. The study emphasized that access to finance acts as a mediator in the role of SMEs in rural development. This underscores the importance of addressing financial constraints faced by SMEs in rural villages to enhance their contribution to the local economy. Moreover, the adoption of Information and Communication Technology (ICT) by SMEs is another crucial aspect that has been relatively underexplored, especially in the context of rural areas in developing countries. Hoque et al. (2016) pointed out the lack of notable studies on the role of ICT in SMEs, particularly in rural areas of developing countries. Understanding and addressing the challenges related to ICT adoption in rural SMEs can significantly improve their efficiency and competitiveness.

Furthermore, the concept of absorptive capacity is essential for SMEs to effectively assimilate and implement new technologies. Zahra & George (2002) emphasized the significance of absorptive capacity and its dimensions in their review of the literature. Enhancing the absorptive capacity of rural SMEs can enable them to adapt to technological advancements, thereby improving their productivity and competitiveness.

Geographical factors and infrastructure also play a significant role in the performance of SMEs in rural areas. Sumiyarti et al. (2022) highlighted the influence of geographical factors and infrastructure on poverty in a specific region, emphasizing the need to consider these aspects when addressing the challenges faced by rural SMEs.

The significance of corporate logos and visual identity in organizational identification has been emphasized in academic literature (Foroudi et al., 2019). This underscores the role of logos in creating a distinct and recognizable image for SMEs, which can contribute to their competitiveness in the market. Anwar et al. (2018) highlighted the role of competitive advantage in SMEs, indicating that leveraging intellectual capital and entrepreneurial strategies can enhance competitiveness (Anwar et al., 2018). This suggests that visual identity, including logos, can be a part of the overall competitive strategy for SMEs.

Managers have expressed uncertainty about managing corporate visual identity systems globally (Lans et al., 2009), indicating a gap in understanding the global implications of visual identity, including logos, for SMEs. Additionally, Ngah & Wong (2020) discussed the link between knowledge management and competitive strategies in knowledge-based SMEs, providing insight into the broader strategies that SMEs can employ to enhance

competitiveness, which can include visual identity considerations (Nghah & Wong, 2020).

In the context of globalization, Chamináde and Vang (2008) highlighted the interaction between SMEs and Transnational Corporations (TNCs), noting that only a small group of firms has benefited from this interaction. This sheds light on the challenges that SMEs may face in leveraging visual identity, including logos, to compete on a global scale.

## LITERATURE REVIEW

### A. Human-Centered Design (HCD)

Human-Centered Design (HCD) is a framework that prioritizes user goals, needs, capabilities, and limitations in the product design process (Branaghan et al., 2021). In the context of graphic design, the application of HCD principles is essential for creating designs that effectively meet the needs and preferences of the target audience. emphasizes the relevance of HCD in graphic design by reporting on human-centered interventions in a design education setting, analyzing the experiences of students involved in projects incorporating HCD, and highlighting its viability as a fundamental approach to graphic design practice (Chmela-Jones, 2019).

Furthermore, the application of HCD, also known as design thinking, is increasingly being utilized in public health and intervention development to design innovative solutions to complex problems (Doyle et al., 2019). Vechakul advocates for HCD as a systematic process that helps embrace ambiguity and generate new insights and ideas, emphasizing its ability to systematize innovation, shorten planning timeframes, and co-create with community members and cross-sector partners in public health projects (Bazzano et al., 2017).

In the specific context of designing logos for Small and Medium Enterprises (UKM), the principles of HCD are highly relevant. By incorporating HCD principles, designers can ensure that the logos effectively communicate the brand message, resonate with the target audience, and fulfill the unique requirements of the UKM sector. The systematic process of HCD can aid in understanding the diverse needs and preferences of UKM stakeholders, leading to the creation of logos that are not only visually appealing but also meaningful and impactful in representing the identity of the businesses.

The application of HCD principles in graphic design is crucial for creating designs that align with user needs and preferences. The relevance of HCD in the context of logo design for UKM lies in its ability to ensure that the logos effectively communicate the brand message and resonate with the target audience. By embracing HCD, designers can create logos that are not only visually appealing but also meaningful and impactful in representing the identity of Small and Medium Enterprises.

### B. The Role of Logo Design in SME Products

The role of logo design in small and medium-sized enterprise (SME) products is a critical aspect of branding and marketing. The importance of logo design lies in its ability to attract customer attention and influence brand perception and consumer trust. Research has shown that the visual components of advertising, particularly logos, play a significant role in capturing attention

and engaging consumers (Cian et al., 2014). This underscores the crucial role of logos in the persuasive process, especially in the context of SME products where establishing a strong brand presence is essential for competing in the market.

Moreover, the impact of logo design extends to brand perception and consumer trust. Studies have highlighted the influence of logo design on consumers' cognitive, affective, and behavioral reactions, emphasizing the significance of naturalness as a critical design dimension that shapes brand personality perception (Chen & Wu, 2023). Additionally, the shape of a brand logo has been found to influence consumer behavior, particularly in the context of green consumption, where the circular-looking nature of logos has been linked to promoting green-buying behavior (Xu et al., 2020). This suggests that logo design can play a pivotal role in shaping consumer attitudes towards environmentally friendly products, which is particularly relevant for SMEs seeking to promote sustainable and eco-friendly offerings.

Furthermore, the evaluation of logos on a cross-national level has been studied, revealing the importance of factors such as harmony and naturalness in logo design (Lans et al., 2009). This emphasizes the need for SMEs to consider cultural and aesthetic preferences when designing logos for their products, especially in the context of international marketing and expansion.

The literature review underscores the critical role of logo design in SME products. Logos not only serve to attract customer attention but also significantly impact brand perception and consumer trust. Understanding the various dimensions of logo design, such as naturalness, shape, and cross-cultural evaluation, is essential for SMEs to effectively leverage logos as a strategic tool in their branding and marketing efforts.

### **C. Logo Design for SMEs at Village Level**

Logo design for small and medium-sized enterprises (SMEs) in rural environments presents both challenges and opportunities. The adoption of information technologies (IT) and information systems (IS) is critical for SMEs in rural areas (Duan et al., 2012). Factors such as relative competitive advantage, top management support, organizational size, external pressure, and competitive pressure are essential determinants for the successful adoption of IT and IS systems in rural small firms (Duan et al., 2012). However, SMEs in rural areas face obstacles such as limited access to high-speed and affordable Internet, high costs of online platforms, lack of a secure payment system, absence of a human interface in e-commerce, and insufficient information on traceability systems (Holl & Rama, 2023). These challenges can significantly impact the digitalization and online presence of SMEs in villages.

In the context of logo design for SMEs in rural areas, it is crucial to consider the development of ICT-based capabilities in response to the environment (Neirotti et al., 2018). The current technological and market environment poses challenges for SMEs, as changes in the ICT paradigm increase complexity and dynamism, affecting competition levels and leaving limited resources for growth (Neirotti et al., 2018). Therefore, the design of logo and branding strategies for SMEs in villages should align with their ICT capabilities and the evolving market environment.

Moreover, the internationalization of SMEs in emerging economies, which may include rural areas, presents additional challenges. Finance availability, market access, and business environment are significant predictors of internationalization challenges for SMEs (Sanyal et al., 2020). Understanding these challenges is essential when considering the design of logos for SMEs in rural environments, as the logos should reflect the firm's capabilities and aspirations for international expansion.

A case study of successful logo design for SMEs in villages can provide valuable insights into effective branding strategies. By analyzing successful cases, it is possible to identify the elements that contribute to the effectiveness of logos for rural SMEs. Additionally, a systematic literature review from the perspective of open innovation can offer a comprehensive understanding of the new product development process for SMEs (Iqbal & Suzianti, 2021). This can be valuable when exploring innovative approaches to logo design that resonate with the target market and reflect the unique characteristics of SMEs operating in rural settings.

Logo design for SMEs in rural environments requires a deep understanding of the challenges and opportunities specific to these settings. By leveraging ICT capabilities, addressing digitalization challenges, and considering internationalization barriers, effective logo design strategies can be developed to support the branding and visibility of SMEs in villages.

## **METHODOLOGY**

This study adopts a qualitative and quantitative approach, along with a case study method, to explore Human-Centered Design (HCD)-based logo design for SMEs in the village of Pematang Serai. Identification of SMEs involves documentation and sample selection based on specific criteria, encompassing various sectors and characteristics. Data collection encompasses interviews with SME owners, observation of the local environment and market, and questionnaires to understand consumer perceptions. Data analysis employs a qualitative approach with thematic methods for interview and observation data, while quantitative analysis utilizes descriptive and comparative statistics from questionnaire data. This methodology aims to provide a comprehensive understanding of the influence of HCD-based logo design on the image and competitiveness of SMEs in Pematang Serai Village.

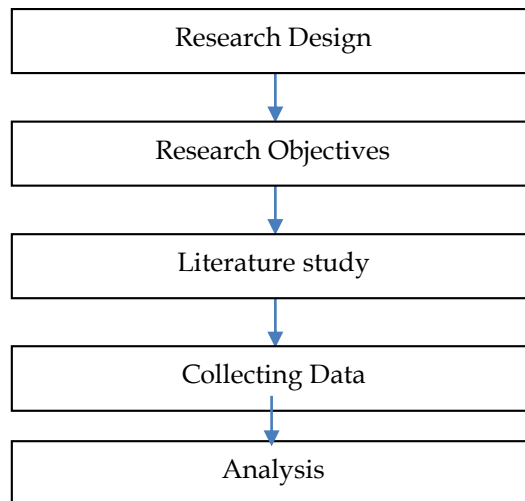


Figure 1. Research Stages

## RESULT

### A. Logo Design Development

The development of a logo involves several stages that are crucial for creating a visually appealing and effective symbol for a brand. These stages typically include conceptualization, design creation, and refinement. Throughout this process, the application of Human-Centered Design (HCD) principles plays a significant role in ensuring that the logo meets the needs and expectations of the target audience. Additionally, the iterative nature of logo development, which involves incorporating feedback into the design, is essential for creating a logo that resonates with its intended viewers.

Human-Centered Design (HCD) principles are integral to the logo design process as they emphasize the importance of understanding the end-users and involving them in the design process. According to , contemporary HCD is a robust and multifaceted discipline that is increasingly entering mainstream culture and the popular press (Lyon et al., 2020). This highlights the relevance of HCD in various design contexts, including logo development. The review by also emphasizes the integration of design thinking with research, providing valuable insights into how HCD can be applied in the context of logo design (Bazzano et al., 2017).

Furthermore, discuss the impact of visual cues, such as logos, on platforms, emphasizing the significance of logo complexity in influencing audience perception (Mahmood et al., 2019). This underscores the importance of considering the visual elements of a logo and how they are perceived by the audience, aligning with the principles of HCD, which prioritize understanding user perspectives.

The iterative nature of logo development, involving constant evaluation and refinement based on feedback, is a key aspect highlighted in the findings of (Waisnawa & Yupardhi, 2023). Their study emphasizes the continuous evaluation of design stages to ensure that the final logo aligns with the expectations of the stakeholders. Additionally, stress the importance of prototyping and rapid iterations based on evaluation at all stages of product

development, which aligns with the iterative approach in logo design (Lyon & Koerner, 2016).

The stages of logo design development involve a comprehensive process of conceptualization, creation, and refinement, with a strong emphasis on the application of Human-Centered Design (HCD) principles. The iterative nature of logo development, coupled with the integration of user feedback, ensures that the final logo effectively communicates the intended message to the target audience.

## **B. Implementation of Logo Design**

The implementation of logo design in small and medium-sized enterprises (SMEs) is a crucial aspect of branding and marketing strategies. The impact of logo design on consumer perception and brand recognition is a topic of significant interest. Several studies have delved into the various aspects of logo design and its effects on consumer behavior and brand image.



Figure 2. Discussion of Research and Implementation

Machado et al. (2015) emphasize the importance of naturalness in logo design and its influence on consumer affective responses. The study highlights that natural logos are preferred to abstract logos, indicating that the design element of naturalness significantly impacts consumer perceptions. This finding underscores the significance of incorporating natural elements into logo design for SMEs to enhance consumer appeal and emotional response (Machado et al., 2015).

Furthermore, Hagtvedt (2011) discusses the impact of incomplete typeface logos on consumer perceptions of the firm. The study suggests that incomplete typeface logos may negatively influence perceptions of trustworthiness, particularly when consumers have a prevention focus. This insight is valuable for SMEs as it underscores the importance of ensuring the completeness and coherence of logo design to maintain positive consumer perceptions and trust (Hagtvedt, 2011).

In addition, Cian et al. (2014) provide a systematic examination of the effect of design characteristics on logo evaluations. The study identifies key factors in logo design that influence recognition, affect, and meaning. Understanding these factors is essential for SMEs to create logos that resonate with consumers and effectively communicate the intended brand message (Cian et al., 2014)

Moreover, the study by Lans et al. (2009) offers insights into cross-national logo evaluation analysis, emphasizing the potential for managers to implement a global logo strategy while also optimizing logos for specific countries if desired. This suggests that SMEs with international operations can benefit from tailoring their logo designs to specific cultural contexts, thereby enhancing consumer acceptance and engagement across different markets (Lans et al., 2009)

While the references provide valuable insights into logo design and its implications for SMEs, it is essential to consider the specific context and industry of the SMEs when applying these findings. Additionally, the study by Straten & Roodenburg (2013) highlights the evaluation of the implementation of the health logo and its effects on consumers and producers. Although not directly focused on SMEs, this study underscores the broader impact of logo implementation on consumer behavior and market dynamics, which can be relevant for SMEs operating in the food and health sectors (Straten & Roodenburg, 2013)

The application of logo design to SMEs is a multifaceted process that requires careful consideration of design elements, cultural nuances, and consumer perceptions. By leveraging insights from research on logo design, SMEs can enhance their branding strategies, establish stronger connections with consumers, and ultimately drive business growth.

### **C. Logo Design Impact Analysis**

#### **a. Evaluation of Logo Design Impact on SME Image:**

Previous research, as presented by Machado et al. (2015), emphasizes the importance of naturalness in logo design and its impact on consumer affective responses. Logos that highlight natural elements are perceived more favorably than abstract logos, indicating that the naturalness design element significantly influences consumer perceptions. Therefore, in the impact evaluation phase, it is crucial to measure whether the SME's logo design integrates natural elements that can enhance consumer appeal and emotional response.

It is also important to consider findings by Hagtvedt (2011) regarding the influence of incomplete typeface logos on consumer perceptions of a company's trustworthiness. Incomplete typeface logos may negatively impact perceptions, especially for consumers with a prevention focus. Therefore, impact evaluation needs to examine the overall cohesiveness of the logo design to maintain positive consumer perceptions and trust.

The analysis of the SME's logo should include points identified by Cian et al. (2014) on critical factors in logo design that influence recognition, affect, and meaning. Understanding these factors can evaluate the extent to which the SME's logo design can convey the desired brand message and influence consumer emotional responses.

#### **b. Comparison of SME Performance Before and after Logo Design Implementation:**

The analysis of SME performance before and after logo design implementation can involve several metrics, including but not limited to:

1. **Increased Brand Recognition:** Measure how much the new logo increases brand recognition among the target audience.

2. Changes in Consumer Perceptions: Evaluate changes in consumer perceptions of the SME after seeing the new logo. This may include factors such as attractiveness, trust, and brand identification.
3. Impact on Sales: Examine whether the implementation of the logo design has led to increased sales or market share for the SME.
4. Market Response: Investigate market responses to logo changes, whether positive or negative, by analyzing consumer reviews, social media feedback, or surveys.
5. Integration of Brand Values: Ensure that the logo design effectively integrates the SME's brand values and identity, and understand whether this is reflected in market responses.

Through this performance comparison, it can be assessed to what extent the implementation of the logo design has a positive impact on the SME's image and success. A holistic analysis of the data will help identify successes and areas for improvement to maximize the benefits of logo design changes.

## DISCUSSION

The examination of logo design development and its application in small and medium-sized enterprises (SMEs) provides valuable insights into the intricate process of creating and implementing logos. By integrating Human-Centered Design (HCD) principles into logo development, businesses can ensure that the final design resonates effectively with the target audience through iterative refinement based on user feedback.

### **Logo Design Development:**

Incorporating HCD principles, as emphasized by Lyon et al. (2020), is critical in understanding end-users and involving them in the design process. This aligns with the iterative nature of logo development, ensuring that the final design effectively communicates the intended message. Mahmood et al.'s (2019) study underscores the significance of visual cues, highlighting that logos play a crucial role in influencing audience perception. Considering user perspectives is vital in the design process, aligning with the principles of HCD.

### **Implementation of Logo Design in SMEs:**

Implementing logo design in SMEs strategically influences brand perception and consumer behavior. Insights from various studies contribute to a nuanced understanding of this process. Machado et al.'s (2015) emphasis on the naturalness of logo design indicates that incorporating elements from the environment positively affects consumer responses. SMEs can leverage this knowledge to enhance consumer appeal. Hagtvedt's (2011) exploration of incomplete typeface logos underscores the importance of completeness and coherence in logo design for maintaining positive consumer perceptions and trust.

Cian et al.'s (2014) examination of design characteristics in logos provides SMEs with valuable insights into factors influencing logo recognition and meaning, helping create logos that effectively convey the desired brand message. Lans et al.'s (2009) insights into cross-national logo evaluation suggest tailoring logos to specific cultural contexts for SMEs with international operations. Straten

& Roodenburg's (2013) study, though not SME-focused, highlights the broader impact of logo implementation on consumer behavior.

### **Overall Impact and Future Implications:**

Analyzing the impact of logo design on SMEs involves evaluating the integration of natural elements, completeness, and cohesiveness in design, considering cross-cultural aspects. This holistic approach ensures that logos not only appeal to the target audience but also positively influence consumer perceptions, trust, and brand recognition.

Future implications for SMEs include leveraging the iterative nature of logo design to adapt to changing consumer preferences, incorporating user feedback for continuous improvement, and considering cultural nuances in international operations. SMEs should recognize the broader impact of logo changes on consumer behavior, emphasizing the need for strategic and thoughtful design decisions.

## **CONCLUSION AND RECOMMENDATION**

### **Conclusion**

The exploration of logo design with a Human-Centered Design (HCD) approach for Small and Medium-sized Enterprises (SMEs) in Pematang Serai Village reveals the significance of aligning design processes with user needs and expectations. The integration of HCD principles in logo development proves crucial for creating visually appealing and emotionally resonant logos that connect with the target audience.

#### **Key Findings:**

1. **Iterative Design Process:** The iterative nature of logo design, guided by HCD principles, ensures continuous refinement based on user feedback. This approach contributes to the creation of logos that effectively communicate the intended brand message.
2. **Visual Elements Impact:** The study acknowledges the importance of visual elements, emphasizing that logos serve as significant visual cues influencing audience perception. Understanding how these elements are perceived by the audience is essential for effective design.
3. **Cultural Considerations:** Insights into cross-national logo evaluation analysis suggest the importance of tailoring logos to specific cultural contexts. This aspect is particularly relevant for SMEs in Pematang Serai Village, ensuring resonance with the local community.

#### **Recommendations**

1. **User-Centric Approach:** SMEs in Pematang Serai Village should continue embracing an HCD approach, placing user needs at the forefront of logo design. Regular user feedback sessions and usability testing should be integral to the design process.
2. **Visual Appeal Emphasis:** Given the impact of visual elements on audience perception, SMEs should prioritize visually appealing design elements in their logos. Incorporating natural elements that resonate with the local environment can enhance consumer appeal.
3. **Cultural Sensitivity:** Tailoring logos to align with specific cultural contexts is recommended. SMEs should be attentive to cultural nuances within

Pematang Serai Village, ensuring that logos reflect the values and identity of the local community.

4. Iterative Refinement: The iterative design process should be an ongoing practice. SMEs should consistently gather feedback, analyze market responses, and refine logos accordingly to adapt to changing consumer preferences.
5. Strategic Implementation: SMEs should strategically implement logo changes, considering the potential broader impact on consumer behavior. Well-thought-out design decisions can contribute to positive brand perception and market dynamics.

## REFERENCES

- Anwar, M., Khan, S., & Khan, N. (2018). Intellectual capital, entrepreneurial strategy and new ventures performance: mediating role of competitive advantage. *Business & Economic Review*, 10(1), 63-94. <https://doi.org/10.22547/ber/10.1.3>
- Aziz, M., Shuib, A., Rahaman, A., Abdullah, A., & Fuad, I. (2022). Design thinking method: a case study of tourism logo development for perak tengah district council. *International Journal of Academic Research in Business and Social Sciences*, 12(9). <https://doi.org/10.6007/ijarbss/v12-i9/14579>
- Bazzano, A., Martin, J., Hicks, E., Faughnan, M., & Murphy, L. (2017). Human-centred design in global health: a scoping review of applications and contexts. *Plos One*, 12(11), e0186744. <https://doi.org/10.1371/journal.pone.0186744>
- Branaghan, R., O'Brian, J., Hildebrand, E., & Foster, L. (2021). Qualitative human factors research methods., 17-47. [https://doi.org/10.1007/978-3-030-64433-8\\_2](https://doi.org/10.1007/978-3-030-64433-8_2)
- Chen, T. and Wu, Z. (2023). The visual naturalness effect: impact of natural logos on brand personality perception. *International Journal of Consumer Studies*, 47(4), 1351-1363. <https://doi.org/10.1111/ijcs.12912>
- Chmela-Jones, K. (2019). Students' experiences of human-centred interventions in a design education setting. *South African Journal of Higher Education*. <https://doi.org/10.20853/33-6-2936>
- Cian, L., Krishna, A., & Elder, R. (2014). This logo moves me: dynamic imagery from static images. *Journal of Marketing Research*, 51(2), 184-197. <https://doi.org/10.1509/jmr.13.0023>
- Cromhout, D. and Duffett, R. (2022). Exploring the impact of student developed marketing communication tools and resources on smes performance and satisfaction. *Small Business International Review*, 6(1), e422. <https://doi.org/10.26784/sbir.v6i1.422>

- Doyle, A., Mulhern, E., Rosen, J., Appleford, G., Atchison, C., Bottomley, C., ... & Weinberger, M. (2019). Challenges and opportunities in evaluating programmes incorporating human-centred design: lessons learnt from the evaluation of adolescents 360. *Gates Open Research*, 3, 1472. <https://doi.org/10.12688/gatesopenres.12998.2>
- Duan, X., Deng, H., & Corbitt, B. (2012). Evaluating the critical determinants for adopting e-market in Australian small-and-medium sized enterprises. *Management Research Review*, 35(3/4), 289-308. <https://doi.org/10.1108/01409171211210172>
- Foroudi, P., Foroudi, M., Nguyen, B., & Gupta, S. (2019). Conceptualizing and managing corporate logo: a qualitative study. *Qualitative Market Research an International Journal*, 22(3), 381-404. <https://doi.org/10.1108/qmr-04-2017-0080>
- Hagtvedt, H. (2011). The impact of incomplete typeface logos on perceptions of the firm. *Journal of Marketing*, 75(4), 86-93. <https://doi.org/10.1509/jmkg.75.4.86>
- Holl, A. and Rama, R. (2023). Spatial patterns and drivers of SME digitalisation. *Journal of the Knowledge Economy*. <https://doi.org/10.1007/s13132-023-01257-1>
- Hoque, M., Saif, A., AlBar, A., & Bao, Y. (2016). Adoption of information and communication technology for development. *Information Development*, 32(4), 986-1000. <https://doi.org/10.1177/0266666915578202>
- Iqbal, M. and Suzianti, A. (2021). New product development process design for small and medium enterprises: a systematic literature review from the perspective of open innovation. *Journal of Open Innovation Technology Market and Complexity*, 7(2), 153. <https://doi.org/10.3390/joitmc7020153>
- Lans, R., Cote, J., Cole, C., Leong, S., Smidts, A., Henderson, P., ... & Schmitt, B. (2009). Cross-national logo evaluation analysis: an individual-level approach. *Marketing Science*, 28(5), 968-985. <https://doi.org/10.1287/mksc.1080.0462>
- Lyon, A., Brewer, S., & Areán, P. (2020). Leveraging human-centered design to implement modern psychological science: return on an early investment.. *American Psychologist*, 75(8), 1067-1079. <https://doi.org/10.1037/amp0000652>
- Machado, J., Carvalho, L., Torres, A., & Costa, P. (2015). Brand logo design: examining consumer response to naturalness. *Journal of Product & Brand Management*, 24(1), 78-87. <https://doi.org/10.1108/jpbm-05-2014-0609>

- Mahmood, A., Luffarelli, J., & Mukesh, M. (2019). What's in a logo? the impact of complex visual cues in equity crowdfunding. *Journal of Business Venturing*, 34(1), 41-62. <https://doi.org/10.1016/j.jbusvent.2018.09.006>
- Manzoor, F., Wei, L., & Sahito, N. (2021). The role of smes in rural development: access of smes to finance as a mediator. *Plos One*, 16(3), e0247598. <https://doi.org/10.1371/journal.pone.0247598>
- Neirotti, P., Raguseo, E., & Paolucci, E. (2018). How smes develop ict-based capabilities in response to their environment. *Journal of Enterprise Information Management*, 31(1), 10-37. <https://doi.org/10.1108/jeim-09-2016-0158>
- Ngah, R. and Wong, K. (2020). Linking knowledge management to competitive strategies of knowledge-based smes. *The Bottom Line Managing Library Finances*, 33(1), 42-59. <https://doi.org/10.1108/bl-08-2019-0105>
- Pittard, N., Ewing, M., & Jevons, C. (2007). Aesthetic theory and logo design: examining consumer response to proportion across cultures. *International Marketing Review*, 24(4), 457-473. <https://doi.org/10.1108/02651330710761026>
- Sanyal, S., Hisam, M., & Baawain, A. (2020). Challenges facing internationalization of smes in emerging economies: a study on oecd model. *Journal of Asian Finance Economics and Business*, 7(2), 281-289. <https://doi.org/10.13106/jafeb.2020.vol7.no2.281>
- Straten, J. and Roodenburg, A. (2013). Innovation in food and health: study into challenges and opportunities for dutch small and medium sized enterprises. *Journal of Food Research*, 3(1), 28. <https://doi.org/10.5539/jfr.v3n1p28>.
- Su, H., Zhu, X., & Gong, S. (2017). Deep learning logo detection with data expansion by synthesising context.. <https://doi.org/10.1109/wacv.2017.65>
- Sumiyarti, S., Susilowati, S., & Hakim, L. (2022). Influence of geographical factors and iinfrastructure on poverty in the bodebek region in west java province. *Penanomics International Journal of Economics*, 1(1), 89-104. <https://doi.org/10.56107/penanomics.v1i1.18>
- Waisnawa, I. and Yupardhi, T. (2023). Logo design werdha priyamitra elderly group north kuta district. *JADAM*, 3(1), 37-48. <https://doi.org/10.58982/jadam.v3i1.343>.
- Xu, L., Yu, F., & Ding, X. (2020). Circular-looking makes green-buying: how brand logo shapes influence green consumption. *Sustainability*, 12(5), 1791. <https://doi.org/10.3390/su12051791>

- Yusup, M. (2023, December). The Importance of Using Logo Design as a Brand Image in Marketing MSME Products Using Digital Technology in Kelambir V Village. In *International Conference on Sciences Development and Technology* (Vol. 3, No. 1, pp. 79-84).
- Zahra, S. and George, G. (2002). Absorptive capacity: a review, reconceptualization, and extension. *Academy of Management Review*, 27(2), 185. <https://doi.org/10.2307/4134351>