Building Brand Loyalty and Recommendation through the Establishment of Brand Communities

Ulani Yunus[1]

Yuniarti Rahayu

RA Christanti Taurina

LSPR Institute of Communication & Business, Indonesia

Abstract

This research investigates the intricate dynamics governing loyalty and recommendation behaviors. The primary objective is to discern the impact of community development on user loyalty and its subsequent influence on product recommendations, using the Indonesian online brand community of the software Micromine as a case study. The technology acceptance model, which argues that adoption is done because of perceived ease, and cognitive dissonance theory, which describes how individuals adjust to reduce discomfort, provide the framework for this study. Utilizing a quantitative methodology, all 300 members of the online Micromine Indonesia community population were surveyed. The findings reveal that community members establish emotional connections through active participation in community forums. Satisfaction with the software's solutions in mining endeavors is prevalent among Micromine community members. Regression analysis showed that a positive attitude about the brand community was positively correlated with both brand loyalty (R^2 = .83) and the likelihood of recommending the brand (R^2 = .78). This supports both theories, where brand community members adopt technology and reduce discomfort by supporting community activities.

Keywords: brand community, loyalty, recommendations, software, Indonesia, mining industry, Micromine

---

[1] All correspondence concerning this article should be addressed to Ulani Yunus at LSPR Institute of Communication and Business Institute Jl. K.H Mas Mansyur, Kav. 35, Jakarta Pusat 10220 or by email at Ulani.y@lspr.edu.

In today's competitive business landscape, fostering customer loyalty and generating positive recommendations are critical for the success of companies. The establishment of brand communities has emerged as a strategic approach to achieve these goals.

Yuniarti et al. (2020) stated that Indonesia is one of the largest producers of mined minerals such as coal, nickel, tin, and bauxite, and also holds the distinction of being the second-largest gold producer in the world, after China. Additionally, Indonesia is the largest producer of palm oil, a major agricultural commodity (Shigetomi et al., 2020). These data effectively communicate that Indonesia holds the distinction of being the largest producer of mined minerals in the worldwide and is specifically acknowledged as the second-largest contributor to gold production after China. In addition to gold, Indonesia ranks in the top three globally in nickel output. Loferski (2023) stated that Indonesia is among the top ten mined mineral producer in worldwide. The prominence of Indonesia in the global mining industry suggests that mining plays a crucial role in the country's economy. Meiryani et al. (2023) mentioned 63 gold mining companies registered on the Indonesia Stock Exchange distribute their shares to the public. This statement provides valuable insight into the business landscape of mining in Indonesia by emphasizing the existence of mining companies in Indonesia.

Operating a mining business in the modern technological era necessitates the utilization of mine-specific technology. Dimitrakopoulos (2018) and Qi et al. (2023) state that there are six mining application brands have been identified as recommended by practitioners to optimize the operations of the Indonesian mining industry. These brands include:1) RedERP, capable of simplifying and optimizing mining operational activities, 2) ArcGis, application design from ESRI (Environmental Systems Research Institute), an international geographic software service provider for information systems based in California, USA. 3) Micromine Applications, capable of simplifying and optimizing mining operational activities. 4) Surpac, a program developed for a series of resource modeling and mine planning. 5) Leapfrog Geo application, excellent for geological modeling in three dimensions. 6) Geoslope, a mining application under the auspices of the company Seequent Limited. This describes the competition that occurs in the mining software world in Indonesia.

The technology acceptance model is a theoretical framework that assesses users' acceptance of new technologies. It was originally developed to explain and predict users' acceptance of information systems and technology. The technology acceptance model can be extended to include social influence factors, as the decision to join or participate in a brand community is often influenced by the opinions and behaviors of others. Social media platforms, as part of the technological landscape, can amplify these social influences (Marchesani et al., 2024) The creation of a brand community could involve bringing together professionals, stakeholders, or enthusiasts who share a common interest in mining technology and Micromine's solutions. A brand community serves as a platform to convey a company's values and foster a positive connection with its members. Leading technology companies like IBM and Microsoft leverage brand communities to ensure the longevity of their businesses. For instance, IBM's brand community, TechXchange, actively engages members in discussions on topics of interest through a blog-based communication platform. Rockwell (2007) and Zaitsev (2021) mentioned members benefit from shared innovations, webcasts, presentations, and research. Similarly, Microsoft's Brand Community unites employees, product enthusiasts, IT professionals, and tech enthusiasts to discuss best practices, new product launches, and provide feedback. Kuo and Huo (2017) and Buchal and Songsore (2018) mentioned members also have the opportunity to attend Microsoft events, facilitating collaboration within the community. This not only enhances the individual member's understanding of Microsoft products and services but also promotes a sense of community and shared learning.

Micromine set up the Micromine Students Club (MMC) in Indonesia in 2018, partnering with 14 universities. With over 300 members, MMC organizes training sessions, student competitions, and conferences. The community actively shares knowledge and ideas, creating a vibrant ecosystem. This shows Micromine's dedication to education and collaboration through MMC. This aligns with the discourse presented by Marikyan et al. (2023) regarding cognitive dissonance theory, which pertains to the psychological mechanisms influencing individual attitudes and interactions within the community. The discourse acknowledges the presence of a gap regarding the outcomes of technology utilization when performance fails to meet initial expectations. It further

aims to investigate the adaptive strategies that users may deploy in response to such circumstances.

Xue et al. (2023) discuss how the community's ability to foster shared understanding, provide social validation, and navigate differing perspectives contributes to a dynamic and adaptive environment that helps individuals manage cognitive dissonance in the face of evolving knowledge and ideas. This environment, in turn, assists individuals in managing cognitive dissonance effectively as they encounter and embrace evolving knowledge and ideas within the community.

The competition in the mining software business is fierce, so a well-crafted communication strategy with stakeholders is crucial. Based on the research about communication strategies among the six software brands mentioned, Micromine stands out as an intriguing brand to examine. This is due to its commitment to forming a brand community, with specific branches established in Indonesia. This study concentrates on Micromine Software Australia, a key player in the software industry, to analyze the impact of its Indonesian brand community on user loyalty and recommendations. The choice to concentrate on Micromine Software Australia for the study is likely driven by several key factors. Micromine is identified as a key player in the software industry, suggesting its significant influence and market presence.

This choice is also influenced by the availability of data and accessibility to Micromine's brand community. Micromine has a well-established and accessible community, which provides a practical case study for researchers to gather meaningful insights into the dynamics of brand communities and their impact on user behavior. The Micromine Software, originating from Australia, is the focal point of this research, requiring an examination of products that are not from Indonesia but have communities in Indonesia. The research question is:

RQ: How does the establishment of brand communities contribute to the building of brand loyalty and recommendations, and what are the key factors influencing these outcomes?

We endeavor to stimulate the exchange of insights, best practices, and case studies

pertinent to applications within the mining sector. The establishment of a feedback mechanism aims to solicit insights from the community regarding products and services, thereby facilitating a process of continuous improvement.

Literature Review

Technology Acceptance Model

The technology acceptance model focuses on users' acceptance of new technology and suggests that perceived ease of use and perceived usefulness are critical factors influencing their adoption. The strength of the relationship observed in our study provides empirical support for the theoretical underpinnings that posit brand communities as influential drivers of brand loyalty (Y. Song et al., 2023).This not only validates existing theoretical models but also enhances our understanding of the nuanced dynamics at play within the realm of brand-consumer relationships. A comprehensive analysis that integrates the technology acceptance model with the establishment of brand communities enables a nuanced understanding of how technology acceptance within the community influences brand loyalty and recommendation. It explores the synergies between technological factors and community-building efforts in shaping consumer perceptions and behaviors towards a brand.

Cognitive Dissonance Theory

Cooper (2019) stated that cognitive dissonance theory suggests that individuals strive for consistency in their beliefs and attitudes, leading to discomfort (cognitive dissonance) if there are conflicting thoughts. In this study, brand can influence post-purchase behavior to reduce dissonance. The resolution of cognitive dissonance within brand communities is crucial for the cultivation of brand loyalty. Confente and Kucharska (2021) stated when community members find coherence between their brand expectations and the actual community experience, it fosters a positive attitude towards the brand. This alignment is likely to contribute to an increased commitment to the brand and the community it represents.

Coelho et al. (2018) stated that a brand community serves as a platform where consumers can freely share their opinions, thoughts, feelings, and experiences, exchanging brand information based on their knowledge of the brand. Brands are essentially shaped by the insights and experiences of consumers, and the brand image reflects what consumers think, feel, and expect from a brand, often expressed within a brand community. Hanson et al. (2019) stated the brand image is formed through associations in consumers' minds; it is crucial for marketers to maintain a consistent and clear brand image within brand communities, as it directly influences the perceptions of other consumers. This shows the strength of the relationship, whether based on attachment or engagement, frequently leads to brand loyalty. This loyalty encompasses two significant components: behavioral loyalty and attitudinal loyalty, reflecting the consumer's internal, psychological involvement with a brand. Consequently, brand communities play a role in assisting brand management by predicting some consumer behaviors. Ozuem (2024) mentioned consumers within brand communities exhibit varying levels of commitment to the brand, providing valuable insights into different consumer types—buyers or users of a specific product or service. This is also similar to Constantin and Platon (2014) who wrote that establishing long-term relationships founded on trust, fostering interactions between brands and customers, and achieving a high level of brand strength are key factors contributing to the consolidation of brand equity through the utilization of brand communities.

McAlexander et al. (2002) stated that the formation of brand communities represents a strategic investment that requires additional efforts in the marketing communication process to ensure long-term success. Nevertheless, the outcome will appear as elucidated by Lee et al. (2024); activities within these communities not only foster brand loyalty but also establish a profound emotional connection between the company and its community members. Essential to this process is the establishment of a communication platform, including social media and other forums, to facilitate brand community development. Qiao et al. (2021) mentioned such communities serve not only as a conduit for company decision-making but also as a powerful word-of-mouth marketing strategy. The emphasis on activities within these communities fostering brand loyalty and establishing emotional connections reflects a comprehensive understanding

of the multifaceted benefits. Patwa et al. (2024) recognized the pivotal role of a communication platform, encompassing social media and forums, in driving brand community development. Moreover, the acknowledgment of these communities serving as conduits for decision-making and powerful word-of-mouth marketing underscores their significant impact on overall brand success.

Brand Community as an Effective Marketing Communication Approach

Roy Bhattacharjee et al. (2022) mentioned that brand communities serve as a highly effective marketing communication approach, offering companies a dynamic strategy to connect with their audience and cultivate lasting brand loyalty. In this approach, consumers with shared interests, values, and experiences coalesce around a particular brand, forming a virtual or physical community. This collective engagement not only fosters a sense of belonging among community members but also establishes a strong emotional connection with the brand. By actively participating in discussions, events, and activities within the community, individuals develop a deeper understanding and appreciation for the brand. B. Song et al. (2021) stated that the interactive and communal nature facilitates two-way communication, enabling companies to gain valuable insights into consumer preferences and expectations. As consumers share their positive experiences and recommendations within the community, it amplifies the brand's reach and credibility. In essence, leveraging brand communities as a marketing communication approach provides companies with an authentic and engaging method to strengthen brand-consumer relationships, enhance brand loyalty, and drive overall brand success in a competitive market landscape.

In the contemporary era dominated by social media, the growth of brand community followers occurs organically. Consequently, brands must actively engage with their communities to sustain loyalty and leverage them as sources of recommendations. Haverila et al. (2023) mentioned that the emotional bond and comfort offered by brand communities transform their members into a dedicated customer base, serving as potent conversion tools for brands. In the context of the mining software industry, this statement highlights a crucial aspect of brand communities that holds relevance for fostering customer loyalty. In an industry where technical solutions and reliability are paramount,

the emotional bond and comfort derived from brand communities can play a unique role. The notion that these communities transform members into a dedicated customer base aligns with the need for trust and dependability in mining software solutions.

A brand community serves as a medium for communicating a company's values and cultivating a favorable relationship with its members. According to some researchers, this phenomenon represents a strategic approach; this methodology is demonstrated by prominent technology enterprises such as IBM and Microsoft, who utilize brand communities to secure the sustained prosperity of their businesses (e.g., Buchal & Songsore, 2018; Y.-F. Kuo & Hou, 2017; Rockwell, 2007; Zaitsev, 2021). This effectively captures the essence of a brand community as a strategic platform for communicating a company's values and nurturing positive connections with its members.

This activity is not only a worthwhile investment for the company, but also strengthens the emotional bond between the brand and its customers, fostering a more robust and sustainable relationship. It is crucial to realize that the impact of brand recognition and community interaction can vary depending on the specific sector and business situation. Previous studies (Anaya-Sánchez et al., 2020; Niyonkomezi & Kwamboka, 2020) underscore the significance of trust and loyalty in online brand communities, emphasizing that beliefs disseminated in the cyber community profoundly impact customer-brand relationships.

According to prior research (Sathi, 2022) there is a significant relationship between brand community and brand loyalty, suggesting that emotional bonds' existence within a brand's community significantly influences customers' purchasing decisions. When customers develop an emotional connection with a brand, they become loyal and more likely to prioritize that brand when shopping. Positive experiences from community members can also increase customer trust in a brand, which makes them more confident in the quality of the products or services offered. To harness the potential of brand communities in amplifying brand recommendations, companies must ensure robust support for these communities by providing effective communication platforms and facilitating interaction among members. Augmenting member engagement can positively influence brand recommendations to a broader audience.

Impact of Brand Communities on Awareness, Loyalty, and Recommendations

Wu et al. (2018) stated the brand community serves as a tool for promoting a brand through informal communication, specifically word-of-mouth. In this context, community members share their positive experiences, opinions, and recommendations about the brand with others. This informal and personal communication is often more influential and authentic than formal advertising.

The impact of brand communities on awareness, loyalty, and recommendations refers to the influence that communities centered around a brand can have on key aspects of consumer behavior and perception. As Roy Bhattacharjee et al. (2022) mentioned, brand communities are groups of individuals who share common interests, values, or experiences related to a particular brand. Therefore, fostering interactions among community members will cultivate an understanding of their influence on awareness, loyalty, and recommendations, ultimately becoming crucial for businesses seeking to establish and uphold a robust brand presence.

According to Kaur et al. (2020), brand communities contribute to increased awareness by creating a space where consumers actively engage with the brand and its offerings. Through discussions, shared experiences, and user-generated content, brand communities amplify the visibility of the brand, reaching a broader audience and fostering brand recognition. Thus, brand communities play a significant role in cultivating brand loyalty. The sense of belonging and shared identity within these communities fosters emotional connections between members and the brand. Kim and Sullivan (2019) highlight how when individuals feel like they are a part of something larger, they are more likely to remain loyal to the brand, consistently choosing its products or services over competitors. Thus, brand communities serve as powerful platforms for word-of-mouth marketing. Bhandari et al. (2024) highlight that satisfied and engaged community members are more likely to share positive experiences, product reviews, and recommendations within the community and beyond. This user-generated content acts as authentic endorsements, influencing others to consider and trust the brand, thereby expanding the customer base.

According to previous research on the coffee shop business in Surabaya, there is a

positive relationship between brand communities and brand recommendations (Kurniawan & Adiwijaya, 2018). In their study, an active brand community produced a strong word-of-mouth effect. Recommendations made by community members to friends or family can significantly influence potential customers' purchasing decisions. Moreover, brand communities contribute to increase brand awareness, serving as a conduit for word-of-mouth promotion and ongoing brand usage recommendations (Laroche et al., 2012). Additionally, they have a positive impact on brand recommendations (Vigripat & Chan, 2007) .

We postulate the subsequent hypotheses:

H1: Establishing and actively engaging in a brand community correlates positively with brand loyalty among community members.

H2: A strong sense of emotional connection within the brand community correlates positively with the likelihood of community members recommending the brand to others.

H1 aligns with the principles of the technology acceptance model, which posits that users are more likely to accept and adopt a technology if they find it easy to use and perceive it as beneficial. In the context of a brand community, the community itself can be considered a form of technology or platform, and the more engaging and user-friendly it is, the higher the likelihood of fostering brand loyalty among its members.

H2 is in line with cognitive dissonance theory, which posits that individuals seek consistency between their attitudes and behaviors. In the context of a brand community, a strong emotional connection creates a positive attitude, leading community members to endorse and recommend the brand to align their actions with their positive feelings.

In summary, both hypotheses tie into aspects of user acceptance and behavior predicted by the technology acceptance model and cognitive dissonance theory. H1 emphasizes the role of community engagement as a factor influencing brand loyalty, aligning with the technology acceptance model's focus on user acceptance. H2 highlights the impact of emotional connection on brand advocacy, in line with the emphasis in cognitive dissonance theory on aligning attitudes and behaviors to reduce cognitive dissonance.

Methodology

This study employs a quantitative approach. We conducted a survey, which was designed after we interviewed Micromine personal and conducted a pilot test of our survey. Research and interviews with internal stakeholders were conducted during the first week of August 2023. The research started with interviews with Micromine management, such as the General Manager Asia Pacific, Business Development and Sales Leadership, Geology Customer Specialist and Senior Mining Engineer - Technical Specialist. They were chosen to be able to provide a comprehensive overview of the mineral mining business, in management decisions, business development and sales, how to manage customers, and software usage. Their data provides insights for analysis of the mining software industry in Indonesia. We aimed to find key players, trends, and areas relevant to our research. We reached out to Micromine for necessary data, involving key personnel, seeking permission for questionnaires, and accessing information.

We distributed the pilot survey to 30 respondents to ensure validity and reliability. A validity test was performed on each question item available for each variable (indicator). This test involves testing convergent validity, discriminant validity, and average variance extracted (AVE). Reliability tests use of SmartPLS 3.0 instruments with Composite Reability and Cronbach's Alpha indicators.

The survey was fielded in the Bahasa Indonesian language using Google Forms from August 15 to September 29, 2023. Respondents included all 300 members of the Micromine Students Club (MMC). This community is unique because it consists of Indonesian students and was specifically founded by a brand from Australia. This can be a model for foreign brands that want to develop markets in Indonesia. Moreover, it is a learning for Indonesian brands who want to develop marketing, either locally or abroad. All respondents are active community members in the Indonesian Micromine brand community. All members actively communicate in the Bahasa Indonesian language via a Whatsapp Group and therefore could be easily contacted to complete the survey.

The survey items were designed to measure specific dimensions of the brand community within the context of our research. According to the operationalization of variables, the brand community is defined using the structural functionalism perspective,

viewing the public as a comprehensive system with integrated functions. The dimensions and indicators we focus on include:

1. Adaptation: This dimension evaluates how well members of the community adjust to changes and integrate new information or practices related to the brand.

2. Goal Achievement: This assesses the extent to which community members achieve their individual and collective goals through participation in the brand community.

3. Integration: This measures the degree of cohesion and connection among community members, reflecting how well they work together and support each other within the brand community.

Each dimension was assessed using a 5-point Likert scale, which allows us to quantify the levels of adaptation, goal achievement, and integration among community members. These elements are critical in understanding the overall functioning and effectiveness of the brand community in fostering strong, interconnected relationships among its members.

To assess the brand community variable, six statements were formulated and measured using the statements in Table 1. The level of loyalty of brand community members was measured by the statements in Table 2. The willingness of community members to recommend products was measured through the statements in Table 3. Even though not all items in the questionnaire explicitly mention the word "recommendation," the subheading in the questionnaire distributed does include the term "Brand Recommendation." This indicates that when respondents agree with the statements, it is understood as a recommendation by members of the brand community for the Micromine software product.

Table 1

Statements and Responses to Items about Brand Community

Statements	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Total		M	Description
	n	%	n	%	n	%	n	%	n	%	n	%		
"I am ready to adapt and contribute to this community."	100	29.1	166	51.2	22	6.4	2	0.6	0	0.0	300	100	4.3	AGREE
"I am always flexible and ready to adapt to change for the team's success in this community."	162	47.1	124	36.1	10	2.9	4	1.2	0	0.0	300	100	4.5	AGREE
"I am committed to building good relationships with team members and living out mutual agreements in this community."	100	29.1	174	50.6	26	7.6	0	0.0	0	0.0	300	100	4.3	AGREE
"I believe a mutual agreement between members is a strong foundation for smooth work in this community."	124	36.1	160	46.5	16	4.7	0	0.0	0	0.0	300	100	4.4	AGREE
"I am proud to be a member of this community and committed to protecting its reputation and positive image."	104	30.2	156	45.4	32	9.3	8	2.6	0	0.0	300	100	4.2	AGREE
"The experience in this community greatly influenced my knowledge of mining technology."	104	30.2	184	53.5	12	3.5	0	0.0	0	0.0	300	100	4.3	AGREE

Note: 5 = *strongly agree; 4= Agree; 3= Neutral; 2=Disagree; 1 = strongly disagree*

Table 2

Statements and Responses to Items about Brand Loyalty

Indicator	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Total		M	Description
	n	%	n	%	n	%	n	%	n	%	N	%		
"We feel that there is good cooperation between members in sharing about the use of software, and therefore we become productive and feel positive in the community environment."	92	30.6	180	60.0	28	9.3	0	0.0	0	0.0	300	100	4.2	AGREE
"We feel that interacting, sharing experiences, and getting advice from fellow community members has enriched our insights into the use of mining technology, such as Micromine Software."	128	37.2	160	46.5	4	1.1	8	2.6	0	0.0	300	100	4.3	AGREE
"I would like to use this brand again in the future because of the positive experience."	66	19.2	196	57.0	34	9.9	0	0.0	4	1.1	300	100	4.1	AGREE
"I feel like I've been part of this community."	74	24.6	198	66.0	26	8.6	2	0.6	0	0.0	300	100	4.1	AGREE
"I believe this brand is superior to other mining software."	80	26.6	176	58.6	40	13.3	4	1.3	0	0.0	300	100	4.1	AGREE

Note: 5 = strongly agree; 4= Agree; 3= Neutral; 2=Disagree; 1 = strongly disagree

Table 3

Statements and Responses to Items about Brand Recommendation

Statements	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Total		M	Description
	n	%	*n*	%	*n*	%	*n*	%	*n*	%	*N*	%		
"This brand is the right high-performance solution for the mining industry."	56	18.6	200	66.6	38	12.6	6	2.0	0	0.0	300	100	4.0	AGREE
"The brand is constantly innovating and keeping abreast of industry developments."	86	28.6	185	61.6	26	8.6	0	0.0	2	0.6	300	100	4.1	AGREE
"I recommend mining companies in Indonesia use Micromine Software."	86	28.6	194	64.6	30	10.0	0	0.0	0	1.3	300	100	4.3	AGREE
"I am satisfied that I can use this brand as my mining technology solution.'	98	32.6	180	60.0	20	6.6	2	0.6	0	0.0	300	100	4.2	AGREE
"I would like to recommend this brand to my friends and relatives."	108	36.0	176	58.0	16	5.3	0	0.0	0	0.0	300	100	4.3	AGREE
"I get the best value for the money that I spend."	136	45.3	156	52.0	8	2.6	0	0.0	0	0.0	300	100	4.4	AGREE

Note: The instructions to this section stated, "Instructions to share your opinion. If you agree with the statements below; you directly recommend Micromine Software for the mining industry." 5 = *strongly agree; 4= Agree; 3= Neutral; 2=Disagree; 1 = strongly disagree*

Validity and Reliability Testing

Following the dissemination of the survey to 30 respondents for the purpose of assessing the validity and reliability of the questions aligned with the predetermined study indicators, the outcomes of the validity test were acquired and are presented in Table 4.

Table 4

Validity Test Results of Each Question on the Variable (Pilot Survey; N = *30)*

Variable	Average Variance Extracted	Results
Brand Community	.556	VALID
Brand Loyalty	.676	VALID
Brand Recommendation	.620	VALID

The results of numbers generated by the SmartPLS 3.0 more than valued 1, therefore all statements representing these variables are declared valid. These reflections encompass various dimensions and characteristics associated with brand community, brand loyalty, and brand recommendation. The comparative analysis of the statistical test results and Table 4 serve as confirmation that the scales used are distinctly discernible from other constructs measured in this research.

Subsequently, all statements encompassing brand community, loyalty, and brand recommendations underwent meticulous scrutiny to ensure their reliability. The outcomes of the reliability test are presented meticulously in Table 5.

Table 5

The Reliability Test Result of Each Question on the Variable (Pilot Survey; N = *30)*

Variable	Cronbach's Alpha	Results
Brand Community	.841	Reliable
Brand Loyalty	.904	Reliable
Brand Recommendation	.875	Reliable

The results of statistical tests show that all statements in this study are valid for use as research instruments.

Results and Discussion

Brand Community

The analysis reveals a high level of engagement within the Micromine brand community, with members actively participating in discussions, sharing insights, and seeking support.

We calculated from the respondents' response, ranging from 1 to 5, ranging from *strongly disagree* (1) to *strongly agree* (5), we obtained an average score of 4.3 for suggests an overall positive sentiment among Micromine's brand community members, indicating satisfaction and perceived value in their association. The highest average score (4.5) for flexibility and adaptability reflects a positive view on the community's collaborative and adaptable nature. The lowest average score (4.2) was for pride

While indicators related to flexibility and adaptability show successful evocation of positive emotions, the lower score in pride and commitment highlights a potential misalignment between emotional engagement and brand image perception. This is in line with cognitive dissonance theory (Davis et al., 2023; Marikyan et al., 2023) and also the research results of Kim and Sullivan (2019). Bridging this gap is crucial for building a resilient brand community. While the data suggests areas where improvement could be made, it is important to note that the scores were all within 1 point of the maximum, indicating that these aspects may not represent significant weaknesses. Therefore, this discussion will concentrate on the theoretical implications of these findings. Specifically, the analysis should explore how these results contribute to our understanding of the Technology Acceptance Model and Cognitive Dissonance Theory, and whether they support the hypotheses presented. The relevance of these findings should be understood in the context of academic inquiry rather than immediate practical application. Initiatives like showcasing success stories, recognizing member contributions, and involving the community in activities promoting a positive brand image can be considered (Wu et al.,

2018). Facilitating open communication channels for feedback and suggestions can be beneficial in aligning community sentiments with the desired brand image. This inclusive approach fosters a sense of ownership among members, contributing to a more positive brand perception.

The data reveals a unanimous positive response from all respondents regarding brand loyalty, with an overall average score of 4.2, indicating a high level of loyalty among community members.

The consistently positive responses, coupled with a mean score of 4.2, demonstrate a robust sense of loyalty within the brand community. On average, member express positive sentiments and commitment to the brand.

The Relationship Between Brand Community and Brand Loyalty

trust and loyalty in an online brand community is closely linked to the manner in which brands communicate and engage with their members. The way messages are crafted and interactions are managed plays a crucial role in shaping these relationships. Below, we discuss the indicators within the brand loyalty variable, highlighting both the lowest and highest scoring aspects.

Highest Average Value (4.4): Enriched Insights

The highest average score in the second indicator suggests that community members highly value interactions, experience-sharing, and advice, particularly regarding mining technology. This indicates that community engagement significantly contributes to enriching members' insights, as discussed by others   (Ozuem et al., 2021; Qiao et al., 2021; B. Song et al., 2021).

Lowest Average Value (4.1): Future Use Due to Positive Experience

The slightly lower average score the future use indicator suggests that while respondents are generally loyal, there is a slightly lower commitment to using the brand again solely based on positive community experiences. This implies that community experiences may not be the sole driver for future brand use.

The results of this study illustrate that community members feel that the interaction that occurs in the community forum becomes something that emotionally binds them in a way that is similar to what has been described by others (Bhandari et al., 2024; Haverila et al., 2023). Community members share experiences and get advice from fellow members, so this interaction activity has enriched insights into the use of mining technology. However, in this situation, it is still necessary for brand owners to be aware that some of the members of community are not very enthusiastic about using the product in the future. This happens because some members feel that there are shortcomings in the quality of the product, less optimal in use to support their work, or some members still have doubts about the effectiveness of Micromine's software.

Influence on Recommendations

From the results of the survey conducted it can be seen that members who are active in the community try to suggest the use of Micromine software when they work for a company because they are used to using that software. The community catalyzes positive word-of-mouth marketing. The brand recommendation responses shed light on how Micromine's mining technology product is perceived by community members. The overall average score of 4.2 indicates a positive inclination among users to recommend Micromine's product, suggesting that users find value in it and are willing to advocate for its adoption.

To see how brand recommendations are happening in the communities studied, we discuss which indicators get the highest and lowest answers on the brand recommendation variable. This is intended that we can see which indicators are still weak in this community and which indicators are strong to be maintained in the interactions that occur in the community.

Highest Average Value (4.4): Get the Best Value

The highest average score in the sixth indicator of brand recommendation suggests that users highly regard Micromine's product as the most sought-after mining technology because it provides the best value. This positive indication reflects the brand's prominent position in the market as a top choice within the mining technology landscape.

Lowest Average Value (4.0): Correct High-Performance Solution

The lower average score in the first indicator implies that users may not universally perceive Micromine's product as the optimal high-performance solution for the mining industry. While still relatively positive, it signals an area with potential for improvement. The contrast between the highest and lowest average values suggests that while Micromine's product is considered sought-after, users may not unanimously see it as the absolute high-performance solution.

The data indicates that Micromine's mining technology product is valued and sought after in the community members. However, there is an opportunity for the brand to focus on innovation to ensure users perceive it as the optimal high-performance solution within the mining industry. Balancing efforts to maintain existing strengths while addressing areas for enhancement is crucial for sustained brand success as mentioned by Y. Song et al. (2023).

This study used regression analysis to measure how much independent variables explain the change in dependent variables. This determines how much the independent variable contributes to the change of the dependent variable. This determines how much the independent variable contributes to the change of the dependent variable. In the context of this study, R^2 is a statistical measure used in regression analysis to measure the extent to which the regression model explains the variation of data in secondary variables. The R^2 value ranges from 0 to 1, and the closer to 1, the better the model is at explaining the variation in the data. In the results of the analysis, there are two substructures with R^2 values of .69 and .60, respectively. This shows that there is a close relationship between the brand community and brand loyalty. This shows that the regression model also manages to account for most of the variance in the brand recommendation data. This illustrates the importance of the brand community in influencing consumer behavior to recommend a brand to others.

In this context, the results suggest a moderately strong positive relationship between brand community and both brand loyalty and brand recommendation. This is in line with the other research (Zhang et al., 2018), which examined the influence of brand community on brand loyalty in the automotive community. To build brand

loyalty, companies must be proactive in building a strong brand community and supporting its growth.

The interpretation of these results implies that as brand community engagement increases, there is a notable tendency for higher levels of both brand loyalty and brand recommendation among the respondents. The positive correlation coefficients (R^2 results are .69 and .60) indicate that these variables move together in a consistent and predictable manner. In simpler terms, individuals who actively engage with the brand community are more likely to exhibit higher levels of loyalty to the brand and are also more inclined to recommend the brand to others, which is similar to what others have found (Bhandari et al., 2024; Dimitrakopoulos, 2018; Qi et al., 2023).

The establishment of a sense of belonging and engagement among community members enhances their emotional connection to the brand. Brand communities, functioning as platforms for the expression and reinforcement of social identity, play a pivotal role in fostering brand loyalty. The exchange of information and experiences within this community builds trust, as consumers often rely on the opinions and recommendations of their peers, consequently influencing their loyalty to the brand.

The success of brand communities is characterized by continual interaction and adaptation to changing consumer needs. Brands that actively engage and adapt within their communities are more likely to sustain loyalty as they remain pertinent to evolving consumer preferences. These dynamics are in alignment with the principles of the technology acceptance model and cognitive dissonance theory.

These findings contribute valuable quantitative evidence supporting the hypothesis that establishing and actively engaging in a brand community correlates positively with brand loyalty and the likelihood of brand recommendation among community members. To assess the validity of the hypothesis, regression analyses were conducted (see Table 6). The robust correlation coefficients enhance the credibility of the observed relationships, reinforcing the significance of brand community in fostering loyalty and advocacy.

Table 6

Results of Hypothesis Testing the Impact of Brand Community on Brand Loyalty and Brand Recommendation (N = 300)

Path	R^2	Result
Brand Community → Brand Loyalty	.83	Supported
Brand Community → Brand Recommendation	.78	Supported

The finding that the brand community has a strong relationship with customer loyalty to the Micromine brand, as well as with the level of recommendation of the brand to others aligns with a study conducted by Hutabarat and Pinando (2016), which focused on the iPhone community in Malang as one of the brand communities in the city.

Conclusion

The benefits of building brand community in the software industry has created brand loyalty and recommendations for members through word of mouth to the companies they work for. The user-friendly communication platform, like WhatsApp Groups, which is used by the Micromine Indonesian community, aligns with the technology acceptance model, making it easier for community members to embrace the software. Additionally, loyalty and positive brand recommendations within the community can be explained using cognitive dissonance theory. Their concerns are addressed or clarified by the information they receive in the WhatsApp group. The technology acceptance model explains how the communication platform contributes to user acceptance, and cognitive dissonance theory helps us understand the psychological processes behind loyalty and positive brand recommendations in Micromine's brand community. Together, these theories provide a comprehensive framework for understanding the dynamics that contribute to Micromine's success in the software industry.

Implications

The prioritization of an efficient communication platform underscores the integral significance of community engagement in attaining success within the software

industry. Allocating resources to strategies aimed at cultivating customer loyalty has the potential to engender enduring patronage and positive word-of-mouth, thereby exerting a lasting influence on overall success. The establishment of a brand community, akin to organic promotion, emerges as a valuable asset with the capacity to enhance brand visibility substantially and draw in new users or customers.

Recommendations

Software companies should prioritize investments in user-friendly and accessible communication platforms to enhance community interactions. Regular updates and improvements to these platforms are essential for maintaining ongoing community engagement. Additionally, employing dedicated community management strategies is crucial for facilitating positive interactions, addressing concerns, and ensuring inclusivity. Encouraging users to share their experiences through content creation not only boosts engagement but also generates authentic testimonials that serve as influential brand recommendations. Implementing recognition and reward mechanisms for active community members can further incentivize engagement and foster a sense of belonging. Establishing feedback loops for user input ensures that the software product aligns with expectations and evolves based on community insights as mentioned by others (Confente & Kucharska, 2021; Kim & Sullivan, 2019; Lee & Hsieh, 2022; B. Song et al., 2021; Zhang et al., 2018).

Limitations

The limitations of this study are as follows: The study's narrow focus on a specific industry or region may restrict its applicability to other industries or global contexts. Caution is warranted when extrapolating the findings to diverse settings. Furthermore, the study may not fully consider potential shifts in social dynamics and online behaviors over time. Additionally, the absence of a qualitative dimension in the study may result in a lack of depth in capturing individual experiences and perceptions within brand communities. Lastly, the study may fall short in capturing the ongoing changes and adaptations within these communities over an extended period.

Future avenues for research are encouraged by our study, particularly in exploring the dynamics of brand communities within the technology and mining sectors. This study lays the groundwork for future scholars to delve deeper into specific aspects, potentially refining or expanding existing theoretical frameworks, namely the technology acceptance model and cognitive dissonance theory.

References

Anaya-Sánchez, R., Aguilar-Illescas, R., Molinillo, S., & Martínez-López, F. J. (2020). Trust and loyalty in online brand communities. *Spanish Journal of Marketing-ESIC*, *24*(2), 177–191. https://doi.org/10.1108/SJME-01-2020-0004

Bhandari, M. P., Bhattarai, C., & Mulholland, G. (2024). Online brand community engagement and brand evangelism: The role of age, gender and membership number. *Journal of Product & Brand Management*, *33*(3), 301-313. https://doi.org/10.1108/JPBM-02-2023-4373

Buchal, R., & Songsore, E. (2018). Collaborative knowledge building using microsoft sharepoint. *Proceedings of the Canadian Engineering Education Association (CEEA)*. https://doi.org/10.24908/pceea.v0i0.13043

Coelho, P. S., Rita, P., & Santos, Z. R. (2018). On the relationship between consumer-brand identification, brand community, and brand loyalty. *Journal of Retailing and Consumer Services*, *43*, 101–110. https://doi.org/10.1016/j.jretconser.2018.03.011

Confente, I., & Kucharska, W. (2021). Company versus consumer performance: Does brand community identification foster brand loyalty and the consumer's personal brand? *Journal of Brand Management*, *28*(1), 8–31. https://doi.org/10.1057/s41262-020-00208-4

Constantin, V., & Platon, O. (2014). Brand community formation: A critical review. *Annales Universitatis Apulensis Series* Oeconomica, *2*(16), 123–131.

Cooper, J. (2019). Cognitive dissonance: Where we've been and where we're going. *International Review of Social Psychology*, *32*(1), 7. https://doi.org/10.5334/irsp.277

Davis, F. D., & Granić, A. (2024). The technology acceptance model: 30 years of TAM. Springer Cham. https://doi.org/10.1007/978-3-030-45274-2

Dimitrakopoulos, R. (2018). *Advances in applied strategic mine planning*. Springer Cham. https://doi.org/10.1007/978-3-319-69320-0

Fryer, L. K., Larson-Hall, J., & Stewart, J. (2018). Quantitative methodology. In A. Phakiti, P. DeCosta, L. Plonsky, & S. Starfield (Eds.), *The Palgrave Handbook of Applied Linguistics Research Methodology*, (pp. 55–77). Palgrave Macmillan. https://doi.org/10.1057/978-1-137-59900-1_3

Hanson, S., Jiang, L., & Dahl, D. (2019). Enhancing consumer engagement in an online brand community via user reputation signals: A multi-method analysis. *Journal of the Academy of Marketing Science*, *47*, 349–367. https://doi.org/10.1007/s11747-018-0617-2

Haverila, M. J., Haverila, K., McLaughlin, C., & Arora, M. (2023). The influence of the number of brand community memberships on customer centric measures. *Journal of Marketing Analytics*, *11*(1), 5–20. https://doi.org/10.1057/s41270-022-00154-x

Hutabarat, Y. L. E., & Pinando, S. (2016). Analisis pengaruh brand community sebagai kelompok acuan terhadap keputusan pembelian produk iphone di Kota Malang [Analysis of the influence of brand community as a reference group on purchase decisions for iPhone Products in Malang City]. *Jurnal Ilmiah Mahasiswa*, *3*(2). https://jimfeb.ub.ac.id/index.php/jimfeb/article/view/1987

Kaur, H., Paruthi, M., Islam, J., & Hollebeek, L. D. (2020). The role of brand community identification and reward on consumer brand engagement and brand loyalty in virtual brand communities. *Telematics and Informatics*, *46*, 101321. https://doi.org/10.1016/j.tele.2019.101321

Kim, Y.-K., & Sullivan, P. (2019). Emotional branding speaks to consumers' heart: The case of fashion brands. *Fashion and Textiles*, *6*(1), 1–16. https://doi.org/10.1186/s40691-018-0164-y

Kuo, Y.-F., & Hou, J.-R. (2017). Oppositional brand loyalty in online brand communities: Perspectives on social identity theory and consumer-brand relationship. *Journal of Electronic Commerce Research*, *18*(3), 254. http://www.jecr.org/node/530

Kurniawan, F. A., & Adiwijaya, M. (2018). The analysis of online brand community, online perceived brand reputation, brand trust, brand loyalty at cafe businesses based in Surabaya. *Petra International Journal of Business Studies*, *1*(1), 11–22. https://doi.org/10.9744/ijbs.1.1.11-22

Laroche, M., Habibi, M. R., Richard, M.-O., & Sankaranarayanan, R. (2012). The effects of social media based brand communities on brand community markers, value creation practices, brand trust and brand loyalty. *Computers in Human Behavior*, *28*(5), 1755–1767. https://doi.org/10.1016/j.chb.2012.04.016

Lee, C. T., & Hsieh, S. H. (2022). Can social media-based brand communities build brand relationships? Examining the effect of community engagement on brand love. *Behaviour & Information Technology*, *41*(6), 1270–1285. https://doi.org/10.1080/0144929X.2021.1872704

Lee, C. T., Shen, Y.-C., Li, Z., & Xie, H.-H. (2024). The effects of non-fungible token platform affordances on customer loyalty: A buyer–creator duality perspective. *Computers in Human Behavior*, *151*, 108013. https://doi.org/10.1016/j.chb.2023.108013

Loferski, P. J. (2023). The Mineral Industry of Indonesia. U.S. Geological Survey Minerals Yearbook, 2019. https://pubs.usgs.gov/myb/vol3/2019/myb3-2019-indonesia.pdf

Marchesani, F., Masciarelli, F., & Ceci, F. (2024). Digital trajectories in contemporary cities: Exploring the interplay between digital technology implementation, the amplitude of social media platforms, and tourists inflow in cities. *Cities*, *146*, 104749. https://doi.org/10.1016/j.cities.2023.104749

Marikyan, D., Papagiannidis, S., & Alamanos, E. (2023). Cognitive dissonance in technology adoption: A study of smart home users. *Information Systems Frontiers*, *25*(3), 1101–1123. https://doi.org/10.1007/s10796-020-10042-3

McAlexander, J. H., Schouten, J. W., & Koenig, H. F. (2002). Building brand community. *Journal of Marketing*, *66*(1), 38–54. https://doi.org/10.1509/jmkg.66.1.38.18451

Meiryani, M., Huang, S.-M., Lindawati, A. S. L., Purnomo, A., Fahlevi, M., & Salim, G. (2023). Corporate energy management disclosure: Empirical evidence from Indonesia stock exchange. *International Journal of Energy Economics and*

Policy, *13*(2), 516–525. https://doi.org/10.32479/ijeep.14059

Niyonkomezi, J., & Kwamboka, J. (2020). Effect of brand communities on consumer engagement and trust: Evidence from mobile phone brands' Facebook pages in Burundi. *International Journal of Research in Business and Social Science*, *9*(4), 244–252. https://doi.org/10.20525/ijrbs.v9i4.719

Ozuem, W., Willis, M., Howell, K., Helal, G., Ranfagni, S., & Lancaster, G. (2021). Effects of online brand communities on millennials' brand loyalty in the fashion industry. *Psychology & Marketing*, *38*(5), 774–793. https://doi.org/10.1002/mar.21466

Ozuem, W., Willis, M., Howell, K., Ranfagni, S., & Rovai, S. (2024). Examining user-generated content, service failure recovery and customer–brand relationships: An exploration through commitment-trust theory. *Internet Research*, *34*(3), 784-809. https://doi.org/10.1108/INTR-07-2022-0580

Patwa, N., Gupta, M., & Mittal, A. (2024). Modeling the influence of online communities and social commerce. *Global Knowledge, Memory and Communication*. https://doi.org/10.1108/GKMC-01-2023-0014

Qi, C., Wu, M., Liu, H., Liang, Y., Liu, X., & Lin, Z. (2023). Machine learning exploration of the mobility and environmental assessment of toxic elements in mining-associated solid wastes. *Journal of Cleaner Production*, *401*(15), 136771. https://doi.org/10.1016/j.jclepro.2023.136771

Qiao, L., Song, M., & Wang, N. (2021). Virtual brand community experience, identification, and electronic word-of-mouth. *Journal of Computer Information Systems*, *61*(4), 357–370. https://doi.org/10.1080/08874417.2019.1661805

Rockwell, S. P. (2007). *Critical factors in the adoption and effective use of technology in the nonprofit sector* [Master's thesis, Massachusetts Institute of Technology]. http://hdl.handle.net/1721.1/39521

Roy Bhattacharjee, D., Pradhan, D., & Swani, K. (2022). Brand communities: A literature review and future research agendas using TCCM approach. *International Journal of Consumer Studies*, *46*(1), 3–28. https://doi.org/10.1111/ijcs.12758

Sathi, A. (2022). *Customer attitude towards customization of high involvement goods online of Hyundai motors in India* [Master's thesis]. National College of Ireland.

https://norma.ncirl.ie/4047/1/amannsathi.pdf

Shigetomi, Y., Ishimura, Y., & Yamamoto, Y. (2020). Trends in global dependency on the Indonesian palm oil and resultant environmental impacts. *Scientific Reports*, *10*(1), 20624. https://doi.org/10.1038/s41598-020-77458-4

Song, B., Tao, W., & Wen, T. J. (2021). Building consumer communal relationships through cause-related marketing: From the perspective of persuasion knowledge. *Journal of Consumer Behaviour*, *20*(6), 1388–1402. https://doi.org/10.1002/cb.1942

Song, Y., Gui, L., Wang, H., & Yang, Y. (2023). Determinants of continuous usage intention in community group buying platform in China: Based on the information system success model and the expanded technology acceptance model. *Behavioral Sciences*, *13*(11), 941. https://doi.org/10.3390/bs13110941

Stone, J., & Taylor, J. J. (2021). Dissonance and attitude change. In *Oxford Research Encyclopedia of Psychology*. https://doi.org/10.1093/acrefore/9780190236557.013.296

Vigripat, T., & Chan, P. (2007). An empirical investigation of the relationship between service quality, brand Image, trust, customer satisfaction, repurchase intention and recommendation to others. *International DSI/Asia and Pacific DSI*, 1–15.

Wu, J., Fan, S., & Zhao, J. L. (2018). Community engagement and online word of mouth: An empirical investigation. *Information & Management*, *55*(2), 258–270. https://doi.org/10.1016/j.im.2017.07.002

Xue, J., Liu, J., Geng, Z., Yuan, H., & Chao, L. (2023). Why and when do paradoxical management capabilities matter to paradoxical pressure? An empirical investigation of the role of coopetition. *Technovation*, *120*, 102682. https://doi.org/10.1016/j.technovation.2022.102682

Yuniarti, D. S., Ulfah, J. A., & Prihandono, I. (2020). Buyer's role in improving BHR practices in Indonesian mineral mining industry. *3rd International Conference on Law and Governance (ICLAVE 2019)*, 285–299. https://doi.org/10.2991/aebmr.k.200321.038

Zaitsev, A. V. (2021). *US multinational corporations and its role at international*

investment activities [Bachelor's thesis, SUMY State University].
https://essuir.sumdu.edu.ua/bitstream-
download/123456789/84884/1/Zaitsev_bac_rob.pdf;jsessionid=205500B74
E9533B6B6DF288C93FB7137

Zhang, H., Zhao, L., & Gupta, S. (2018). The role of online product recommendations
on customer decision making and loyalty in social shopping communities.
International Journal of Information Management, *38*(1), 150–166.
https://doi.org/10.1016/j.ijinfomgt.2017.07.006

Biographical Notes

Ulani Yunus is the Director of the Publication Department at the LSPR Institute. She is lecturer and researcher at the LSPR Institute of Communication & Business. Ulani holds a Doctorate in Communication Science with a dissertation that delves into the realm of television commercials. Ulani has authored several books, including *Branding & Advertising*, *Digital Branding, Branding Higher Education in the Digital Age*, *Branding Yourself through Interpersonal Communication*. and *Branding Indonesia through Publication*. Ulani's academic impact is reflected in her h-Index of 5 on Scopus and h-Index of 9 on SINTA KEMENRISTEKDIKTI Indonesia. Notably, she has authored 44 manuscripts, all of which are accessible on the Scopus website. She has received various research grant, namely the international conference grant with the theme: Strengthening Asean Leadership in Sustainable Business and Advanced Communication (Grant KemenristekDikti 2023) and others.

She can be reached at LSPR Institute of Communication and Business Institute Jl. K.H Mas Mansyur, Kav. 35, Jakarta Pusat 10220 or by email at ulani.y@lspr.edu.

Yuniarti Rahayu is the head of the undergraduate program in Visual Communication Design at LSPR Institute of Communication and Business. She holds a Master of Design in Digital Media from Bandung Institute of Technology and a bachelor's degree in Communications from President University. Yuniarti's research and publications focus on visual design, communication, digital media, and games. Her work has been featured in several journals both nationally and internationally.

She can be reached at LSPR Institute of Communication and Business Institute Jl. K.H Mas Mansyur, Kav. 35, Jakarta Pusat 10220 or by email at yuniarti.r @lspr.edu

RA Christanti Taurina is a seasoned marketing professional with over eight years of experience in both in-house and B2B client-focused roles. She holds a master's degree in Communication from LSPR Institute Communication & Business, where she also earned her Bachelor of Arts in Communication. With expertise in customer relationship management, media relations, and market research, she excels in developing effective marketing strategies and leading projects to success. Her career reflects a strong commitment to creative problem-solving and hands-on leadership in the marketing field.

She can be reached at LSPR Institute of Communication and Business Institute Jl. K.H Mas Mansyur, Kav. 35, Jakarta Pusat 10220 or by email at christanty.taurina85@gmail.com.