The Influence of B2B Social Media Marketing and Relationship Marketing on Customer Relationship Management Effectiveness, WOM and Loyalty: A Mediator Analysis

Tuan Cong Dao[1], Ying-Kai Liao[2], Grace Chen[3], Thi-Minh-Ngoc Luu[1], Thi Mai Le[1]*

[1]International School, Vietnam National University, Hanoi, Vietnam, [2]Program of International Business, Nanhua University, Taiwan. [3]Institute of International Management (IMBA), National Cheng Kung University, Taiwan. *Email: mailt@vnuis.edu.vn

ABSTRACT

This research aims to investigate the relationships between Business to Business (B2B) social media marketing, customer relationship management effectiveness (CRME), word-of-mouth (WOM), and loyalty, while also examining the mediating role of relationship marketing. A total of 256 respondents were recruited from a machinery manufacturing company's customer base, encompassing regions as Taiwan and other Asia countries to assess their perspectives on B2B marketing. The following results were derived: (1) B2B social media marketing significantly impacts customer relationship, further enhancing the firm's performance; (2) Customer relationship management effectiveness and customer loyalty notably influence word-of-mouth (WOM); (3) Social media marketing influences on CRME, WOM, and customer loyalty can be mediated through relationship marketing. This study's findings provide crucial references for future academic validations. Moreover, professionals aiming to craft effective B2B customer relationship strategies can leverage these results for considerable potential.

Keywords: B2B Social Media Marketing, Relationship Marketing, Customer Relationship Management Effectiveness, Word-of-Mouth, Loyalty
JEL Classifications: M10, M30, M31

1. INTRODUCTION

Social media profoundly integrates into our daily lives. The average person spends 6 h and 42 min online each day, roughly a quarter of their day (Kemp, 2019). Notably, YouTube and Facebook rank as the most visited platforms. Kemp (2019) data shows that approximately 3.256 billion individuals-almost half the world's population-use mobile social media, with a quarter leveraging social platforms for work. Moreover, the time people allocate to social media continues to rise annually, solidifying its position as the focal point of digital customer interactions. The onset of the COVID-19 pandemic in 2020 catalysed unprecedented changes. Global lockdowns and the "Work from Home" directive implemented by numerous governments reshaped consumer behaviour. Gavin et al. (2020) indicated a significant shift from traditional face-to-face sales interactions to digital-enabled ones during the pandemic. Prior to COVID-19, face-to-face sales were prioritized in B2B buying, but the pandemic propelled digital interactions, with B2B buyers rising to 66% (up from 48% pre-COVID-19).

Despite the acknowledgment that social media holds superiority over personal selling in Business to Business (B2B) marketing (Järvinen et al., 2012), B2B marketers face challenges in fully integrating it into their marketing strategies (Habibi et al., 2015). Järvinen et al. (2012) noted that while most B2B companies recognize the value of social media, they struggle with its effective implementation. Jussila et al. (2011) emphasized the gap between the potential and actual utilization of social media by B2B firms, with limited empirical validations. Academic

research primarily solicits feedback from B2B marketers, lacking insights from end users. Therefore, this study focuses on a B2B case company, surveying its customers to examine how social media practically enhances customer relationships in the B2B sector.

Liao et al. (2020) outlined three critical elements for effective social media implementation: (1) boosting brand exposure, (2) frequent news updates, and (3) swift customer responses. In B2B contexts, where firms and customers boast extensive knowledge, the emphasis leans towards functional and rational decision-making. This underscores the need for direct and robust customer relationships (Habibi et al., 2015). However, despite existing successful examples, B2B managers lack clear implementation guidelines for social media marketing (Habibi et al., 2015). More research validating the impact of B2B social media characteristics on its implementation is essential. Furthermore, nurturing relationships remains a primary motivation for using social networking. Enhancing interactivity is pivotal for social website interactions. Carlson et al. (2019) identified three factors within interactivity: Control, two-way communication, and synchronicity. Duong et al. (2020) argued that interactivity mirrors the relationship between a firm and its customers, with higher interactivity indicating stronger customer bonding with the brand. However, the influence of social media interactivity on enhancing customer relationship management remains limited. Relationship marketing theory centers on cultivating enduring connections between B2B partners, prioritizing satisfaction, trust, and commitment. Meeting customer requirements stands as a crucial factor in fostering successful relationships (Arthur et al., 2024).

Customer relationship management effectiveness (CRME) evaluates the establishment, maintenance, and fortification of long-term customer relationships. Padmavathy et al. (2012) categorized CRME into organizational commitment, customer experience, process-driven approach, reliability, and technology orientation. Word-of-mouth (WOM) has been a potent source of data transmission since ancient times (Godes and Mayzlin, 2004). Positive WOM enables firms to successfully promote their products/services, nurturing long-term relationships. Building loyalty depends on committed teams, employees, suppliers, and owners dedicated to long-term success. Nevertheless, existing studies have not integrated these crucial outcome variables to explore how relationship marketing influences them.

Based on these research gaps, this study was conducted with the following objectives:
(1) Identify how adopting B2B social media implementation and interactivity influence relationship marketing, customer relationship management effectiveness, customer loyalty, and WOM.
(2) Examine the impact of CRME and customer loyalty on word-of-mouth
(3) Explore the mediating role of relationship marketing in the influence of social media implementation and interactivity on customer relationship management effectiveness, customer loyalty, and WOM.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1. Relationship between Social Media Marketing Implementation and Customer Relationships

Social media usage continues to surge, becoming a vital resource for competitiveness in both businesses to customer (B2C) and business to business (B2B) marketing. However, B2B research on social media lags behind B2C, lacking depth and sophistication (Habibi et al., 2015). This study categorizes social media characteristics into social media implementation and interactivity. Liao et al. (2020) highlighted that social media implementation encompassing increased brand exposure, frequent news updates, and prompt customer responses significantly impacts B2B performance, enhancing call volume, fan base, and click rates. Ogilvie et al. (2018) asserted that effective social media implementation boosts business performance by enabling easy product/service updates, presenting solutions, and facilitating smoother customer interactions. Well-executed social media drives heightened brand awareness, exposure, and increased sales culminating in elevated customer relationships characterized by greater satisfaction, trust, and commitment (Liao et al., 2020).

Building upon this discussion, this study proposes the following research hypothesis:
Hypothesis 1: A firm's social media implementation (including information update frequently, fast response, and brand exposure) has a positive impact on relationship marketing (including customers overall satisfactory, trust, and commitments.

2.2. The Effect of Social Media Interactivity

Wu (2000) posited that interactivity embodies a customer's perceived control over the interaction process, communication commitment, and response to customers' communicative behaviour. Every customer interaction presents an opportunity for firms to influence opinions about their products/services. Customers adjust their behaviors based on experiences and information provided, making each interaction pivotal for improving communication. Social media interactivity empowers firms to engage across various commercial aspects, directly impacting transaction intentions. Zhao and Roy Dholakia (2009) suggested that attributional interactivity enhances satisfaction. Mann and Sahni (2015) highlighted interactivity's positive impact on customer outcomes within banking websites, influencing customer service quality, satisfaction, perceived security, and trust.

Building upon this discourse, the study proposes the following research hypothesis:
Hypothesis 2: Social media interactivity has a positive effect on relationship marketing.

2.3. The Effect of Relationship Marketing on Customer Relationship Management Effectiveness

The impact of relationship marketing on customer relationship management effectiveness has been studied extensively. Habibi et al. (2015) emphasized the pivotal role of customer relationships in terms of satisfaction, trust, and commitment in influencing future intentions toward products/services. They highlighted that

in a transactional continuum, satisfied customers tend toward transactional exchanges, with satisfaction acting as a mediator in influencing future intentions. Conversely, higher customer trust leads to commitment mediating the influence of attitudes on future intentions. Elaborations Likelihood Model (Petty et al., 1986), and Theory of Partnering (Berry, 1995) suggested that under high trust and commitment, these factors become central in shaping attitude-trust/commitment-future intention structures. However, under low trust/commitment situations, they assume a peripheral role in influencing attitudes and future intentions.

Tuan and Moretti (2017) argued that social media implementation enables cost-effective, efficient, and rapid direct-end-customer contact, facilitating CRM in a favourable setting. Habibi et al. (2015) proposed that successful social media implementation necessitates acquiring new technology to monitor results, developing commercial application skills for customer analytics, and mastering content management and digital storytelling to ensure effective social media implementation, ultimately fostering customer relationships and business performance.

Building on these discussions, the following research hypotheses are proposed:
Hypothesis 3: Relationship marketing has a positively associated with CRME (including organizational commitment, customer experience, process-driven approach, reliability and technology orientation).

2.4. The Effects of Relationship Marketing on Word of Mouth
Word-of-mouth (WOM) and electronic word-of-mouth communication stand as significant sources of information for customers. Studies suggest that information from other users holds more credibility and influence than that generated by firms (Sarmiento Guede et al., 2018). Guede (2016) asserted that relational quality research should acknowledge key dimensions like trust, commitment, and satisfaction as fundamental factors in identifying, establishing, developing, and maintaining relations between firms and customers. In the realm of social media communication, online trust is understood as a "psychological state involving the intention to accept vulnerability based on positive expectations of others' intentions or behaviors" (Rousseau et al., 1998). Contrasted with online trust, offline trust encompasses customer honesty, reliability, kindness, and trust in an agent.

Bart et al. (2005) defined online trust as the customer's perception of how a website can fulfill their needs and the trust inspired by the website itself. Effective WOM communication hinges on trustworthiness and credibility (Sarmiento Guede et al., 2018). Mukherjee and Nath (2007) interpreted online commitment as a natural attachment to a website, akin to an affective bond in offline contexts. Online commitment directly impacts WOM communication, purchase intentions, and ongoing interactions. Satisfaction, identified by Oliver (1980) reflects consumers' perceptions and judgments about product/service characteristics. Online satisfaction is typically gauged through internet experiences and serves as a direct precursor to WOM (Sarmiento Guede et al., 2018).

Trust, commitment, and satisfaction form the crux of relationships between firms and customers. Studies confirm that relationship quality positively influences WOM (Chung and Shin, 2010; Purnasari and Yuliando, 2015).

Building upon these discussions, the study proposes the following research hypothesis:
Hypothesis 4: Relationship marketing has a positive impact on WOM.

2.5. The Effect of Relationship Marketing on Customer Loyalty
For B2B transactions, customer loyalty significantly impacts sales management satisfaction (Alhulail, 2018). Trust in online transactions emerges as a pivotal factor in enhancing customer loyalty and business performance. Prior study affirmed that customer trust significantly influences loyalty and behavioral intentions (Bricci et al., 2016). Trust mitigates transaction costs, fosters enduring relationships, promotes cooperation, and serves as a linchpin in determining loyalty. Establishing relationships and fostering customer loyalty hinge on trust in sellers and their offerings (Alhulail, 2018).

As per Garbarino and Johnson (1999), customer commitment draws parallels from organizational theory models related to employee commitment, encompassing facets like personal identification, psychological attachment, concern for the organization's future welfare, and loyalty, all of which are pertinent to customer commitment. Commitment acts as a catalyst for customer loyalty.

Additionally, customer satisfaction stands as a key determinant of consumer behavior. Satisfied customers exhibit repeated purchases of the same products/services. Park (2020) asserted that customer retention hinges on satisfaction. The nexus between satisfaction and customer loyalty (or long-term retention) is acknowledged by marketing professionals and academics. Padmavathy et al. (2012) noted that relationship satisfaction serves as a foundation for loyalty.

In light of these discussions, the study proposes the following research hypothesis:
Hypothesis 5: Relationship Marketing has a positive impact on customer loyalty.

2.6. The Effect of Customer Relationship Management Effectiveness on WOM
The assessment of customer relationship management effectiveness encompasses various dimensions, adopting Padmavathy et al. (2012) framework, comprising organizational commitment, customer experience, process-driven approach, reliability, and technology orientation. In examining the relationship between CRME and electronic word-of-mouth (WOM), divergent research perspectives have emerged.

One line of research contends that CRME leads to satisfaction and loyalty, subsequently fostering WOM (Sofi et al., 2020). Meanwhile, another school of thought argues that CRME serves as the precursor to brand equity, subsequently facilitating WOM

(Amoako et al., 2012; Liao et al., 2020). Additionally, Berraies et al. (2019) suggested that CRME effectiveness might act as a mediator, influencing perceived quality, customer satisfaction, and loyalty, thereby impacting WOM.

Conversely, Ejaz et al. (2013) posited that CRME might not have a direct impact on WOM. Instead, they propose that CRME could influence word-of-mouth through its effects on customer satisfaction and loyalty. Drawing upon these discussions, the following hypothesis is proposed:

Hypothesis 6: CRME effectiveness has a positive effect on WOM.

2.7. The Effect of Customer Loyalty on WOM

Studies suggest CRME influences WOM through customer loyalty, crucial for re-patronage and WOM impact (Kwak et al., 2012). The link between customer loyalty and WOM is debated. Serra-Cantallops et al. (2018) posited that WOM, alongside satisfaction and reputation, boosts customer loyalty. Others assert the impact of loyalty on WOM (Kwak et al., 2012). Nikhashemi et al. (2015) found brand trust, perceived value, and service quality fuel brand loyalty, prompting positive WOM. Eelen et al. (2017) supported customer brand loyalty's influence on WOM. Ngoma and Ntale (2019) stressed relationship marketing's role in fostering customer loyalty through WOM as a mediating variable.

Eisingerich et al. (2015) noted that online communication allows more time for thoughtful expression, leading to deliberate actions compared to offline communication. Thus, customer loyalty may have much stronger impact on traditional in person WOM. However, WOM in online communication can spread faster and is less spontaneous and more deliberate than in person WOM. Based on the above discussions, the following research hypothesis is developed.

Hypothesis 7: Customer loyalty has a positive impact on WOM.

2.8. The Mediation Role of Relationship Marketing

Relationship marketing significantly shapes the impact of social media implementation and interactivity on CRME, WOM, and customer loyalty. In B2B contexts, these implementations are pivotal for fostering exchanges (Garbarino and Johnson, 1999). However, their direct effect on CRME, WOM, and loyalty is indirect, operating through relationship marketing factors like trust, commitment, and satisfaction.

Relationship marketing, as Bricci et al. (2016), relies on trust, commitment and satisfaction to sustain partnerships, fostering cooperation that bolsters customer loyalty and WOM. From these discussions, the following hypothesis emerges:

Hypothesis 8: The influence of social media marketing on CRME, word of mouth, and customer loyalty should be mediated through relationship marketing.

Specific:

H8a. Relationship marketing mediates the relationship between social media marketing implementation and customer relationship management effectiveness.

H8b. Relationship marketing mediates the relationship between social media marketing implementation and word of mouth.

H8c. Relationship marketing mediates the relationship between social media marketing implementation and customer loyalty.

H8d. Relationship marketing mediates the relationship between social media interactivity and customer relationship management effectiveness.

H8e. Relationship marketing mediates the relationship between social media interactivity and word of mouth.

H8f. Relationship marketing mediates the relationship between social media interactivity and customer loyalty.

Based on the above research hypotheses development, this study develops a research framework, as shown in Figure 1.

3. RESEARCH DESIGN AND METHODOLOGY

3.1. Sample and Procedure

The sample data used to test the hypotheses was collected from marketing managers of firms in Taiwan and other Asia countries. Due to a lack of sample frame, the proportion of the sample to the population could not be identified in this study. Therefore, non-probability convenience sampling was used to collect data. An online questionnaire survey was administered to targeted respondents via email and popular social networks, such as Facebook, Line, from 1st September to 31st October 2022.

Collecting data by survey which non-interventional studies where ethical approval is not required because of national laws. Furthermore, before starting data collection, a written informed consent was informed to respondents. The goal of the study, the method used to collect the data, confidentiality and anonymity, as well as the advantages and disadvantages of participation, were all made evident to the respondents, and all is voluntary. To make sure that participants understood the study's goals and methods, their rights and any related risks, and the consequences of participating in the survey written informed consent was obtained rather than verbal consent.

Hair et al. (2014) stated that using structural equation modelling (SEM) for hypothesis testing requires at least 5 cases per parameter estimate. In this study, the measurement instrument includes 50 items, so a minimum sample size of 250 cases is acceptable. Given the sample data in this study comprises 256 cases, it is sufficient for analysis.

Notably, 75.8% of respondents were male, 39.5% were aged between 26 and 35, and 68.0% held a university degree. Additionally, 37.5% of respondents used their official website for marketing. Among these companies, 28.5% of them are in the communication, electronics, and appliances, while 23% are in the vehicle and transportation equipment sector.

3.2. Instrument Development

The questionnaire-based survey was divided into two main sections. The first section outlined the objective and context of the research. This section also provided guidance on how to complete the form. The second section presented the constructs'

Figure 1: Proposed research model
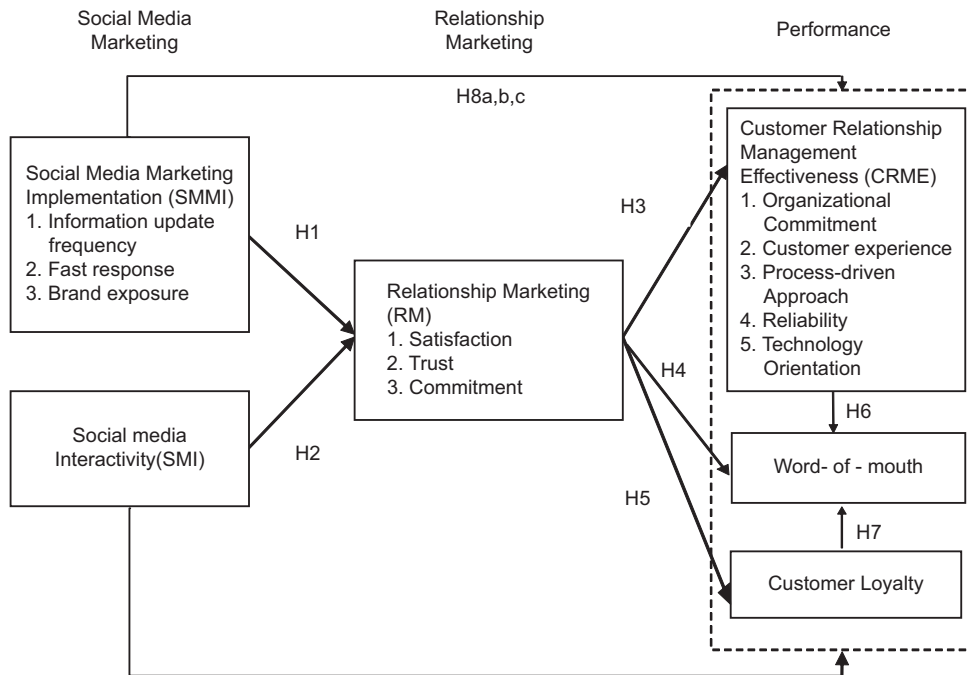
measurement items. The questionnaire was developed using a 7-point Likert scale (1 for strongly disagree and 7 for strongly agree). Items to measure constructs in this study were adapted from previously published studies (see appendix) that have been widely used and proven to have high validity and reliability.

The questionnaire was written in English and then translated into different languages as Vietnamese, Taiwanese by translators to improve consistency and translation equivalence. Afterwards, we compared the original English version with the translated and back-translated versions to refine the questionnaire. Before the main survey, a pre-test was performed on the questionnaire with 50 respondents to check the reliability of the instruments. Additionally, respondents were asked to identify any difficulties they encountered with the instructions, questionnaire layout, or time to complete it.

3.3. Analysis Methods
This study employed SPSS software and SEM to analyze the sample data and test the hypotheses. Specifically, SPSS was utilized to carry out fundamental descriptive statistics and assess the reliability of the measures. SEM has two main approaches: covariance-based SEM (CB-SEM) and partial least squares SEM (PLS-SEM). PLS-SEM has several advantages compared to CB-SEM, including better statistical power in similar conditions and greater suitability for studies with a small sample size. PLS-SEM is particularly well-suited for exploratory research that extends established theories (Reinartz et al., 2009).

4. RESEARCH RESULTS AND FINDING

4.1. Common Method Variance
A common method variance analysis was necessary due to the model was developed using data from a single-country setting and

Table 1: Result of Harman's one-factor test

Component	Extraction Sums of Squared Loadings		
	Total	% of variance	Cumulative %
1	37.073	74.147	74.147

a one-time survey (Fuller et al., 2016). This study followed the recommendations of Podsakoff et al. (2003) to address common method variance issue. First, in the procedural remedy, all respondents' privacy, anonymity, and confidentiality were assured. Second, in the statistical remedy, we performed the Harman's one-factor test, which revealed that the first factor of principal component analysis accounted for 37.073% of the variance, which was less than the threshold of 50% (Table 1) (Podsakoff et al., 2003). Thus, common method variance was not a serious issue in the sample data.

4.2. Evaluation of the Measurement Model
The measurement model was assessed in several steps. Indicator loading analysis was the first step in evaluating the measurement model. The study observed that factor loading exhibited a range of 0.877 to 0.977, surpassing the threshold of 0.708 recommended by Hair et al. (2019). As shown in Table 2, Cronbach's alpha values varied between 0.939 and 0.981, which is above 0.70. Furthermore, composite reliability (CR) values fluctuated between 0.961 and 0.988, exceeding the threshold value of 0.70. Thus, internal consistency reliability of the scales is satisfactory. Moreover, average variance extracted (AVE) values for all variables ranged from 0.718 to 0.811, exceeding the minimum acceptable threshold of 0.50. Hence, convergent validity is satisfactory.

To test discriminant validity, we followed Fornell and Larcker (1981), who suggested that discriminant validity is supported when the square roots of AVE are greater than all correlation coefficients between variables in the Pearson correlation matrix. As

demonstrated in Table 3, all values of the square roots of AVE on the main diagonal were greater than all correlation coefficients in the corresponding rows and columns, indicating good discriminant validity (Fornell and Larcker, 1981).

4.3. Evaluation of the Structural Model

A bootstrapping procedure with 5000 resamples was performed to estimate the statistical significance of path coefficients (Henseler et al., 2009). Based on results of the hypothesized model

presented in Table 4, all direct relationships were significant and supported. Specifically, social media implementation was significantly and positively related to relationship marketing ($\beta = 0.455$, $P < 0.001$), supporting H1. Furthermore, social media interactivity was significantly and positively related to relationship marketing ($\beta = 0.474$, $P < 0.001$), confirming H2. Moreover, Table 4 shows that relationship marketing was significantly and positively related to customer relationship management effectiveness ($\beta = 0.520$, $P < 0.001$). Therefore, H3 is supported. In addition, relationship marketing was significantly and positively related to word of mouth ($\beta = 0.198$, $P < 0.05$). Therefore, H4 is supported. Similarly, relationship marketing was significantly and positively related to customer loyalty ($\beta = 0.735$, $P < 0.001$), confirming H5. Additionally, customer relationship management effectiveness was significantly and positively related to word of mouth ($\beta = 0.220$, $P < 0.01$), supporting H6. Finally, customer loyalty was significantly and positively related to word of mouth ($\beta = 0.651$, $P < 0.001$), providing support for H7.

Based on the effect size coefficient (f-square), the f-square value for hypotheses H3, H5, and H7 indicate a large effect (>0.35). The f-square values for hypotheses H1 and H2 show an average effect (ranging from 0.15 to 0.35). All remaining f-square values demonstrate a small effect (Cohen, 1988).

The study also examined the indirect effects among constructs in the model by applying a bootstrap analysis recommended by Zhao et al. (2010). Results in Table 5 confirmed the significant mediating effect on relationship marketing in the causal links from social media marketing implementation to customer relationship management effectiveness ($\beta = 0.237$, $P < 0.001$), word of mouth ($\beta = 0.090$, $P < 0.05$), and customer loyalty ($\beta = 0.335$, $P < 0.001$). Therefore, H8a, H8b, and H8c are supported. Furthermore, the indirect effects of social media interactivity on customer relationship management effectiveness ($\beta = 0.237$, $P < 0.001$), word of mouth ($\beta = 0.094$, $P < 0.05$), and customer loyalty ($\beta = 0.349$, $P < 0.001$) through

Table 2: Reliability and validity

Variable	Item	Outer loading	CR	AVE	Cronbach's alpha
Social Media Marketing Implementation (SMMI)	SMIU	0.942	0.961	0.891	0.939
	SMF	0.952			
	SMB	0.938			
Social Media Interactivity (SMI)	SMI1	0.957	0.972	0.873	0.963
	SMI2	0.946			
	SMI3	0.949			
	SMI4	0.940			
	SMI5	0.878			
Relationship Management (RM)	RCC	0.955	0.978	0.936	0.966
	RCS	0.973			
	RCT	0.974			
Customer Relationship Management Effectiveness (CRME)	CRCE	0.965	0.988	0.941	0.984
	CROC	0.966			
	CRP	0.977			
	CRR	0.972			
	CRT	0.968			
Word of Mouth (WOM)	WOM1	0.967	0.985	0.931	0.981
	WOM2	0.967			
	WOM3	0.970			
	WOM4	0.959			
	WOM5	0.961			
Customer Loyalty (CL)	CL1	0.961	0.977	0.896	0.971
	CL2	0.962			
	CL3	0.969			
	CL4	0.878			
	CL5	0.959			

Table 3: Fornell-Larcker criterion

Variable	CL	CRME	RM	SMI	SMMI	WOM
Customer Loyalty (CL)	0.947					
Customer Relationship Management Effectiveness (CRME)	0.906	0.970				
Relationship Management (RM)	0.909	0.913	0.967			
Social Media Interactivity (SMI)	0.834	0.883	0.889	0.934		
Social Media Marketing Implementation (SMMI)	0.846	0.886	0.887	0.911	0.944	
Word of Mouth (WOM)	0.951	0.908	0.907	0.827	0.828	0.965

square roots of AVE are on the main diagonal

Table 4: Results of direct effects among constructs

Path relationship	Path coefficient	t-value	P-value	Decisions	f-square	Effect size
H1: SMMI→RM	0.455	6.232	0.000	Supported	0.198	Average
H2: SMI→RM	0.474	6.524	0.000	Supported	0.220	Average
H3: RM→CRME	0.520	6.067	0.000	Supported	4.994	Large
H4: RM→WOM	0.198	2.406	0.016	Supported	0.038	Small
H5: RM→CL	0.735	9.195	0.000	Supported	4.755	Large
H6: CRME→WOM	0.220	3.232	0.001	Supported	0.053	Small
H7: CL→WOM	0.651	8.785	0.000	Supported	0.721	Large

SMMI: Social media marketing implementation, SMI: Social media interactivity, RM: Relationship management, CRME: Customer relationship management effectiveness, CL: Customer loyalty, WOM: Word of mouth

Table 5: Results of indirect effects among constructs

Specific indirect effects	Path coefficients	SD	t-value	P-value	Decisions
H8a: SMMI→RM→CRME	0.237	0.062	3.801	0.000	Supported
H8b: SMMI→RM→WOM	0.090	0.044	2.063	0.039	Supported
H8c. SMMI→RM→CL	0.335	0.058	5.778	0.000	Supported
H8d: SMI→RM→CRME	0.237	0.062	3.801	0.000	Supported
H8e: SMI→RM→WOM	0.094	0.038	2.468	0.014	Supported
H8f: SMI→RM→CL	0.349	0.072	4.821	0.000	Supported

SMMI: Social media marketing implementation, SMI: Social media interactivity, RM: Relationship management, CRME: Customer relationship management effectiveness, CL: Customer loyalty, WOM: Word of mouth

Table 6: R-square and Q-square values

Endogenous constructs	R^2	Adjusted R^2	Predictive accuracy	Q^2	Predictive relevance
Customer loyalty	0.834	0.832	High	0.739	Large
Customer relationship management effectiveness	0.866	0.864	High	0.808	Large
Relationship marketing	0.825	0.823	High	0.766	Large
Word of mouth	0.921	0.919	High	0.850	Large

relationship marketing were statistically significant. Therefore, H8d, H8e, and H8f are supported.

4.4. Evaluation of Predictive Capability

Two criteria were used to evaluate the predictive capability of the model, including predictive accuracy and predictive relevance. Predictive accuracy was assessed based on the coefficient of determination (R^2), which represents the amount of explained variance of each endogenous latent variable (Hair et al., 2019). Accordingly, the modelled constructs explained 83.4% of the total variance in customer loyalty, 86.6% in customer relationship management effectiveness, 82.5% in relationship marketing, and 92.1% in word of mouth (Table 6). These values, following the rule of thumb suggested by Henseler et al. (2009), indicate a substantial level of predictive accuracy.

On the other hand, the assessment of predictive relevance was conducted using the blindfolding procedure to determine the Stone-Geisser Q^2 (cross-validated redundancy) value. As shown in Table 6, the Q^2 of customer loyalty, customer relationship management effectiveness, relationship marketing, and word of mouth were 0.739, 0.808, 0.766, and 0.850, respectively. These values are >0, demonstrating the sufficient relevance of the proposed model (Hair et al., 2019).

5. CONCLUSION AND IMPLICATIONS

5.1. Discussion of Main Findings

This study indicates the vital role of social media marketing implementation in building relationship marketing. This finding echoes with previous study of Liao et al. (2020), who highlighted that social media implementation leads to customer adoption, B2B performance, and sales. Additionally, Ogilvie et al. (2018) suggested that a company's active updates on products/services, presenting solutions to customers, and engaging through social media significantly elevate brand awareness, exposure, and sales volume (Habibi et al., 2015).

Furthermore, the role of social media interactivity is evident in the development of relationship marketing. Social media interactivity

enables improved customer engagement via social platforms. This finding builds upon prior work by Duong et al. (2020), who suggested that social media interactivity positively influences customer brand engagement. In recent years, an increasing number of B2B marketers have adopted social media to enhance brand perception. Each customer interaction through social media shapes their perception of our brand. Zhao and Roy Dholakia (2009) argued that increased social media interactivity correlates with higher customer satisfaction, further emphasizing its positive impact on relationship marketing.

Moreover, this study finds a positive link between relationship marketing and customer relationship management effectiveness. This aligns with Garbarino and Johnson (1999), who proposed a continuum of customer relationships, where satisfaction is integral not only to repurchase behaviour but also to fostering trust and commitment. As relationship quality deepens, customers engage beyond mere transactions, emphasizing membership benefits over tangible attributes. In addition, Migdadi (2020) pointed out the potential of relationship marketing in understanding customers better for the enhancement of customer relationships.

In addition, this study reveals that relationship marketing positively impacts customer loyalty. This finding is consistent with a previous study of Mujahidin et al. (2022). Also, this study stands from a unique perspective which examines the impact of customer loyalty on word of mouth, supporting previous finding of Kwak et al. (2012).

Importantly, this study sheds new light on the mediating mechanism of relationship marketing in the relationships between social media marketing implementation, social media interactivity, and customer relationship management effectiveness, word of mouth, and customer loyalty. Our findings extends prior research by Bricci et al. (2016), stressing the critical role of social media in building trust and commitment, fostering cooperation between firms and customers, essential for driving customer loyalty, CRME, and WOM. Therefore, relationship marketing remains pivotal in fostering customer connections, facilitating growth, and driving profitability.

5.2. Theoretical Implications

This study aims to explore how social media marketing implementation and interactivity influence relationship marketing, which leads to customer relationship management effectiveness, word of mouth, and customer loyalty. A research model was proposed and validated, which examined the antecedents, consequences and mediating role of relationship marketing.

This study makes important contributions to theory. Initially, this study adopts practical variables from the electronic marketing orientation (EMO) model (Liao et al., 2020) aiming to clarify social media's efficacy. Liao et al. (2020) suggested including additional mediators in future research models to examine social media adoption's performance. Here, relationship marketing serves as a mediator, examining how social media adoption affects firm performance—specifically, CRME, WOM, and customer loyalty. This empirical and theoretical expansion aims to fortify the research model's validity.

Moreover, extending Duong et al. (2020) model beyond B2C social media to encompass B2B social media interactivity and customer relationship management effectiveness enhances our understanding. This extension offers insights for developing B2B social media strategies.

Additionally, while Padmavathy et al. (2012) outlined criteria for measuring customer relationship management effectiveness in the Indian banking industry, this study applies these criteria to the Asia machinery manufacturing industry, yielding differing results. As Padmavathy et al. (2012) suggested, diverse industries and countries may hold different perceptions. This study addresses the gap in research connecting B2B social media implementation and customer marketing effectiveness, offering a pioneering integration of research models for B2B marketers. This could pave the way for more comprehensive frameworks and further validation of B2B social media effects in future research.

5.3. Practical Implication

In practical terms, this study offers valuable insights for B2B marketers. Firstly, unlike previous studies focusing solely on B2B marketers' perspectives, this research directly gathered feedback from end users via a B2B case company, providing more practical contributions. The resulting research model can serve as a blueprint for pioneers crafting innovative B2B marketing strategies.

Secondly, the findings aid B2B firms in enhancing their marketing strategies while economizing their budgets. Current B2B online marketing often relies on costly platforms like Alibaba and Taiwan trade, leading to passive customer interactions. By leveraging the study's insights, marketers can optimize B2B platforms, using cost-effective social media platforms like Facebook and YouTube. Employing multiple B2B platforms with varied strategies can lower costs and boost profits.

Thirdly, this study suggests that B2B customer relationship maintenance can transition from individual salesperson interactions to a collective effort across various company units, bolstering brand image through B2B social media. Establishing standard operating procedures (SOPs) for customer interaction via social media, as highlighted in this study, can create more touchpoints and stabilize customer relationships, minimizing the impact of personnel changes.

Furthermore, this research sheds light on crucial variables for B2B marketers, emphasizing the significance of social media implementation, relationship marketing mediation, and evaluating CRME criteria. Marketers are advised to focus on enhancing the frequency and responsiveness of information on social media when implementing B2B strategies. Drawing from a B2B case company and customer feedback, this study offers practical guidance for B2B management and marketers seeking to strengthen customer relationships through B2B social media.

5.4. Limitations and Future Research Recommendations

Despite of its theoretical and practical significance, this study has some limitations that should be addressed in future research. First, the findings of this study provide valuable insights for firms adopting B2B social media. However, it is important to note that the respondents were marketing managers of some companies, which may limit its representativeness. Second, the research data was collected from several Asian countries. Hence, a comparative study between countries would be conducive to examining whether the relationships among construct vary with cultural differences. Third, various B2B industries, such as manufacturers of food production equipment, are increasingly adopting B2B social media. Hence, future research endeavours should aim to broaden the scope of this study by including diverse regions and industries. Investigating user experiences with B2B social media in different global contexts will provide a more comprehensive understanding of its impact across various sectors and geographical locations.

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APPENDIX

Appendix: Measurement items

Research variables	Sources
1. Social Media Marketing Implementation	Liao et al. (2020)
Information update frequency	
(SMIU 1) I can frequently see helpful and new information on your company's B2B social media.	
(SMIU 2) I can regularly see latest and different information on your company's B2B social media.	
(SMIU 3) Whenever your company has any news, I can see the update on their social media simultaneously.	
Fast Response	
(SMF1) Your company response us quickly on B2B social media.	
(SMF2) When we ask for help on B2B social media, your company always reply us.	
(SMF3) Your company take time on replying to our requests on B2B social media.	
Brand Exposure	
(SMB1) I can know more about your company's brand through B2B social media.	
(SMB2) I can more easily to introduce your company's brand to other potential customers through B2B social media.	
(SMB3) Your company's brand become more famous because of using social media.	
2. Social Media Interactivity (SMI)	
(SMI1) I can receive answers from your company on your B2B social media.	
(SMI2) I can interact easily with your company on your B2B social media.	
(SMI3) I can give feedback to your company on your B2B social media.	
(SMI4) I can communicate with your company on your B2B social media.	
(SMI5) We have a good interaction and relationships with the people of your company.	
3. Relationship Marketing	Hsiao et al. (2009)
Satisfaction	
(RCS1) I am highly satisfied with the relationship with your company.	
(RCS2) Compared to the ideal relationship with other companies, I am satisfied with the relationship with your company.	
(RCS3) The quality of the relationship with your company is consistently high.	
Trust	
(RCT1) Your company is reliable.	
(RCT2) Your company has my best interests in mind.	
(RCT3 –Reversed question) I don't expect the service from your company will always be good.	
(RCT4 – Reversed question) Your company doesn't worth my time.	
(RCT5 –Reversed question) I cannot expect the information I required from your company.	
Commitment	
(RCC1) I feel a sense of belonging at your company.	
(RCC2) I care about the long-term success of your company.	
(RCC3) I am a royal user of your company.	
4. Customer relationship management effectiveness	Padmavathy et al. (2012)
Organizational commitment	
(CROC1) Employees of your company often interact with customers to assess service performance.	
(CROC2) Your company assess customer satisfaction regularly.	
(CROC3) Your company carefully evaluates customer evolving needs.	
Customer experience	
(CRCE1) Your company attends customer complaints promptly.	
(CRCE2) Your company takes genuine interest in handling customer problems.	
(CRCE3) Your company effectively communicates to customers.	
(CRCE4) Your company is co-operative.	
Process-driven Approach	
(CRP1) Your company delivers services at the earliest.	
(CRP2) Your company designed service processes to satisfy the customer.	
(CRP3) Conducting transactions correctly and rapidly is very common with your company.	
(CRP4) Your company provides value-added information along with its products/services.	

(Contd...)

Appendix: *(Continued)*

Research variables	Sources
Reliability	
(CRR1) Your company maintains consistent service standards.	
(CRR2) Your company provides reliable services.	
Technology orientation	
(CRT1) Your company uses latest technology to offer quality services.	
(CRT2) Your company makes effective use of new technology like online communication software and social medias to enhance customer service.	
5. Customer Loyalty	Chiew et al. (2011)
(CL1) I would recommend your company to my friends.	
(CL2) I would continue to seek services from your company.	
(CL3) I say positive things about your company to other people.	
(CL4) I refuse to change to another company (supplier).	
(CL5) My loyalty to your company is very high.	
6. Word of Mouth	Augusto de Matos et al. (2009)
(WOM1) I will speak positively about your company to other people.	
(WOM2) I will encourage others to use your company's services.	
(WOM3) I will recommend your company to people who ask me for information.	
(WOM4) I feel adequate from the comments of your company from electronic word of mouth (WOM).	
(WOM5) The Word of Mouth of your company are positive.	