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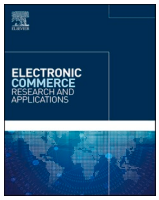

Management of social selling and B2B customer-brand engagement: Is direct selling on social media good for your brand and relationships?

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ABSTRACT

This research investigates the formation of business customer brand engagement and strong customer-firm relationships in a social selling environment. The study was prompted by the growing prominence of business-to-business (B2B) social selling, in which goods and services are sold to B2B customers directly on social media. The stimulus-organism-response (S-O-R) paradigm is used to model the customer's perception and response. Primary data was collected from a sample of customers (n = 378) that follow B2B social selling sites on Facebook for business services including training, consulting, legal services, digital marketing, and information and communication technologies (ICT). Analytical techniques included Q-sort methodology to check reliability and validity and evaluate non-response bias and structural equation modelling (SEM). The findings showed that information quality, virtual interactivity and rewards influence business customer brand engagement, which in turn had a positive influence on strength of the customer-firm relationship. A moderation analysis showed that although system quality did not have a significant effect on business customer brand engagement in the full sample, this relationship was significant for technology customers. The main contribution of the research is that it highlights how social selling contributes to customer-brand engagement and the customer-firm relationship, identifying some factors that had not been observed in the currently limited and fragmented body of research into B2B social selling. There are several opportunities for theoretical and empirical research to further expand the literature on social selling and B2B use of social media marketing, which is highlighted in the study.

1. Introduction

Globally, social media is an increasingly important channel for sales and marketing communication for firms. Recent estimates show that 3.6 billion people (or about 49% of the world's population) were using social media as of 2021, a figure which is expected to rise to 4.41 billion people by 2025 (Tankovska, 2021). Furthermore, individuals are spending more time online than ever. Tankovska's (2021) statistics indicate that users spend 144 min a day on average – or nearly two and a half hours – on social media. Thus, social media is a powerful force for communication.

The importance of social media as a consumer information channel is reflected in a large and growing body of literature on social media and digital marketing (Dwivedi et al., 2020). However, there are some significant gaps in this research. First, most studies focus on business-to-consumer (B2C) marketing, rather than business-to-business (B2B) marketing, even though there is evidence that social media is used differently in B2B marketing than it is in B2C marketing (Iankova et al., 2019). Such differences are entirely reasonable, since there are many differences between B2B and B2C consumers. B2B consumers, who are not end users but are producing other goods, are typically organisations that make large purchases, based on the quantifiable value and technical proposition and quality of the goods and services (Grewal & Lilien, 2012). B2B purchases may be made by a network of people, rather than individuals, based on multiple criteria and quantifiable decisions. This contrasts to B2C consumers, who are end users of a product and make small unit transactions, seeking brand relationships and perceptions of quality based on individual criteria for decisions (Grewal & Lilien, 2012). While there are some areas where the lines are blurred, particularly in smaller organisations (Lilien, 2016), there is still a need to consider these consumers individually.

Second, existing literature on social media as a marketing communication channel for both B2C and B2B relationships does not examine the role of social commerce, or selling across social media channels. In

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part, this is because social commerce, also called social selling, did not develop in tandem with e-commerce; instead, it only emerged around 2009, and has only become commonplace in some areas within the past few years (Han et al., 2018). However, it also is related to the entrenched assumptions of social media marketing about who the customer is and what kinds of relationships are possible between the buyer and seller (Dahl, 2018).

Despite this lack of research into the area generally, there is evidence that social media marketing can help support development of brand engagement within B2B relationships (Taiminen & Ranaweera, 2019). What is less clear is how the use of social media as a sales site – social selling – influences the formation of B2B customer brand engagement and the strength of the B2B buyer–seller relationship. This is a problematic question because theories of B2C social commerce cannot simply be extended to B2B situations. Simply, everything from consumer decision making processes and the use of emotion (Pandey & Mookerjee, 2018) to the use of social media in the marketing process (Iankova et al., 2019) is different between B2B and B2C sales contexts. This is characteristic of B2B research, where there is a wide research gap that remains either unfilled or uses weak theories that consider B2B consumers analogous to B2C consumers (Lilien, 2016). This means that not only is there a gap in the research, it is a gap that cannot be filled through simple extension of related studies. This literature gap is practically relevant because of the growing importance of platforms like Facebook for social selling, through which the individual seller's relationships and interactions with their customers are critical for their sales performance (Handarkho, 2020; Molinollo et al., 2020). Thus, the research is motivated not only be a need to improve academic understanding of social selling, particularly B2B social selling, but also a real need for practical understanding of how B2B social selling works for the sellers themselves.

The objective of this research is to investigate how social selling platforms influence the business consumer's brand engagement and the strength of the customer-firm relationship. It addresses two questions. First, how do technical factors like website information and system quality, along with social factors like virtual interaction and motivators like rewards, affect the B2B social selling customer's brand engagement? Second, how do these factors influence the long-term development of a strong customer-firm relationship? The study begins with a conceptual framework derived from existing theories on social selling and the S-O-R model, and then tests this model using a quantitative survey of business customers in Thailand who have engaged with social selling across Facebook, which is Thailand's most popular social media site (Kemp, 2021).

1.1. Social selling

Broadly speaking, social commerce is the use of social media channels (e.g. Facebook and Instagram) not just as marketing sites, but also as direct sales sites (Han et al., 2018). More specifically, social commerce is marked by the understanding of the sales relationship as a social or parasocial relationship between the buyer and seller, who are frequently within the same community and whose relationship influences the purchase decision (Handarkho, 2020; Molinollo et al., 2020). Han, et al. (2018) trace the first use of social commerce to 2009, though the academic concept slightly preceded its implementation. Compared to mainstream digital commerce, social commerce has remained relatively low, with an estimated USD3 billion annually expected by 2019 (Han et al., 2018).

The term social selling is often used to refer to B2B social commerce (Ancillai et al., 2019). While modern social selling may use social media sites such as Facebook or Instagram, platforms like Alibaba have been using a social selling paradigm to encourage relationships between B2B buyers and sellers beginning in the late 1990s (Van Alstyne & Parker, 2017). Thus, social selling is not exactly a new phenomenon, but rather one that has been under-investigated in the literature.

Here, B2B social commerce refers to businesses who sell across social platforms (e.g. Facebook or dedicated social selling platforms), whose target market is other businesses rather than individual end consumers. This is an important distinction because, perhaps unsurprisingly, comparative studies have shown that B2B and B2C consumers respond differently to social media marketing activities (Iankova et al., 2019). Specifically, business customers view social media as a less effective and less important communication channel for relationship development. There may also be organisational resistance to social selling within the supplier itself (Schmitt et al., 2021). Schmitt et al. (2021) noted that social selling is often driven by individual salespeople within organizations in a bottom-up fashion, rather than being a top-down sales strategy. Resistance can come from both managers and within the sales team, which means that trying to force social selling on the sales organisation can result in even more resistance (Schmitt et al., 2021). Thus, from both the perspective of the customer and the supplier, social selling is not yet a mainstream practice and may face significant resistance. Furthermore, it may only be implemented in a piecemeal fashion, with some salespeople using social selling tactics and others avoiding them.

This does *not* mean that social selling is ineffective for B2B brands; rather, there are different factors that influence the use of B2B social selling and its effectiveness (Barney-McNamara et al., 2020). Barney-McNamara, et al. proposed that the social selling relationship remains a personal relationship between salesperson and buyer, with social selling activities including personal branding, information exchange, networking and social listening influencing the formation of buyer engagement, value co-creation and salesperson relationships. This essentially personal selling relationship was also supported by an exploratory study on social selling on LinkedIn (Godinho & Correia, 2021). These authors noted that despite the evolution of technology, social selling was still fundamentally built on interaction, interpersonal relationships and trust, in addition to the ability of the seller to deliver value and customise the offer for the firm (Godinho & Correia, 2021). Terho et al. (2022) elaborated on this point, identifying key activities of social selling such as insight generation, connection, and engagement. Other authors have added additional factors, including leadership styles and skills (Barry & Gironda, 2018; Terho et al., 2022) and other individual-level salesperson characteristics that could influence the effectiveness of B2B social selling (Ancillai et al., 2019). Although this does represent some progress, as Ancillai, et al. have pointed out, this research remains fragmented and there is little evidence in many areas.

B2B social selling has only recently begun to formalise as a concept, and as a result there are several gaps in understanding the phenomenon (Terho et al., 2022). A particular gap that this research addresses is the lack of insight into the social selling platform itself, which has played a role in social commerce research (Han et al., 2018), but not in B2B social selling.

1.2. The S-O-R paradigm

The stimulus-organism-response (S-O-R) paradigm of advertising persuasion is a classical model of consumer behaviour and response that has been adapted in recent years for the domain of online marketing (Islam & Rahman, 2017). The S-O-R paradigm has its roots in environmental psychology, and is particularly concerned with organisms and their response within the environment (Mehrabian & Russell, 1974). Later authors have refined the S-O-R paradigm toward human cognition and response and improved its usability by identifying 'packages' of stimuli that could influence the individual (Jacoby, 2002). Jacoby also improved the S-O-R paradigm by reflecting on how the environment, organism and responses interacted; for example, individuals may automatically process the environment before environmental stimuli cause a response. This provided the S-O-R paradigm with a better explanatory power than previous statements (Jacoby, 2002). The S-O-R paradigm has been used effectively in several studies on social selling in both B2B and B2C contexts (Islam & Rahman, 2017; Wu & Li, 2018), suggesting it

is appropriate to explain B2B customer responses in this case.

The S-O-R paradigm is relatively straightforward in terms of its dimensions and mechanisms of action (Islam & Rahman, 2017; Jacoby, 2002; Mehrabian & Russell, 1974; Wu & Li, 2018). The organism (in this case the consumer) exists in an environment in which different sources of information (stimuli) also exist. The organism perceives the stimuli and responds in various ways, including cognitive response (thoughts), affective response (emotions) and activation (or excitement). These responses ultimately lead to a behavioural response (Islam & Rahman, 2017; Jacoby, 2002; Mehrabian & Russell, 1974; Wu & Li, 2018).

There is no generic measure of appropriate stimuli or responses, a fact which has caused inconsistency in empirical studies of retail applications of S-O-R (Vieira, 2013). Instead, these factors are specified based on the response environment. In this study, the environmental stimulus investigated is the social selling platform quality characteristics. The organism factor of product type was tested as a moderator. The behavioural responses investigated include the brand engagement of the business customer and brand-customer relationship strength. Type of product is investigated as a moderator.

1.2.1. Business customer brand engagement: A short-term cognitive response

The short-term cognitive response (or organism element) this study examines is business customer brand engagement. Customer brand engagement can be defined as "the level of a customer's cognitive, emotional and behavioural investment in specific brand interactions (Hollebeek, 2011, p. 555)." Hollebeek's synthesis of research on customer brand engagement found that major themes or descriptors of the behaviour included immersion in brand content, activation (or response toward the brand) and passion for the brand. This would later be implemented in a preliminary conceptualization and scale for measuring consumer brand engagement, in which a refined definition was that it was "a consumer's positively valenced brand-related cognitive, emotional and behavioural activity during or related to focal consumer/brand interactions (Hollebeek et al., 2014, p. 149)." The dimensions of consumer brand engagement include cognitive processing (or thoughts about the brand), affection (emotional response) and activation (or specific behaviours). This is consistent with the internal processing of the organism as expressed within the S-O-R paradigm (Islam & Rahman, 2017). It should be noted that customer brand engagement is a consumer attitude, usually investigated in the context of B2C transactions (Youssef et al., 2018). However, Youssef, et al. have argued that cognitive, emotional and behavioural aspects of customer engagement also can be observed in B2B relationships, although the drivers may be different. Therefore, extending the customer brand engagement model to business customer brand engagement is not unreasonable, especially as the decisional processes and individuals ultimately lie with individuals with similar cognitive processes (Youssef et al., 2018). At the same time, the S-O-R paradigm may apply more to some kinds of firms than others, depending on the level of individual control and formalization of the purchasing process within the firm. For example, small firms and family firms may be characterised by informal decision-making by a small number of people (potentially only one) compared to the more formalised processes of larger firms (Lussier & Sonfield, 2012, 2015). The implication of this is that firms may vary a lot in how well the observed purchasing behaviour fits the S-O-R model, though it may explain some variance in any situation.

1.2.2. Brand engagement and relationship strength: Long-term behavioural response

The long-term response this research is concerned with is the customer-brand relationship strength as an outcome of business customer brand engagement. In the context of B2B relationships, the relationship strength can be understood as the depth and breadth of the customer-vendor relationship, including aspects like how large a share of the total spending the vendor gains, the customer's reluctance to search out other vendors, and willingness to invest in the customer-vendor relationship (Barry et al., 2008). As Barry, et al. point out, this is neither a purely social nor a purely economic outcome; instead, it results from a combination of the development of satisfaction, trust and affective commitment between customer and vendor, and economic factors such as switching costs.

There is some evidence that engagement on social media influences the relationship strength of B2B relationships (Karampela et al., 2018, 2020; Luo et al., 2021; Murphy & Sashi, 2018). In particular, these studies suggest that interactivity and communication facilitated via social media lead to stronger customer-vendor relationships. Karampela, et al. (2018, 2020) found that simple presence on social media was sufficient to improve customer satisfaction and lead to stronger relationships compared to vendors who were unavailable via social media. Essentially, this treats social media as another communication channel. However, Murphy and Sashi (2018) illustrated that communication via social media was fundamentally different from face-to-face communication, including that it was more associated with rationality and reciprocal feedback, making it better to manage multiple contacts, provide task and non-task information and collect feedback. Thus, social media is a fundamentally different form of communication for developing customer relationships, and could result in different kinds of customer relationships than face-to-face communication. Furthermore, as Luo, et al. (2021) found, not all relationships benefit from social media communication; there are various forms of tension that result in the relationship, including buyer passivity, international differences in social media styles, and transparency, all of which can result in frustration for both buyers and suppliers and potentially affect the strength of the relationship. These studies all point to the fact that social media is an important communication channel, but that it cannot be considered on its own. Furthermore, the studies do not address the broader environment which could influence the decision, particularly the social selling platform itself.

1.2.3. Social selling platform quality: Environmental stimuli

This paper considers environmental stimuli including the social selling platform and the information provided across it. The stimuli investigated include information quality, system quality, virtual interactivity, and reward, which follows a previous study on B2C consumer engagement in social commerce (Islam & Rahman, 2017). While Islam and Rahman (2017) developed this model in a B2C social selling context, there is evidence that the same relationships could be observed in a B2B social selling context as well.

Information quality and system quality represent two dimensions of information system quality (Gorla et al., 2010). Information quality of the information offered via the social selling platform is proposed to influence business customer brand engagement. Information quality refers broadly to the perceived quality of information provided by or through a given system, though more specific definitions depend on the context (Arazy & Kopak, 2011). In the case of a social selling site, information quality relates to the quality of information provided across the site, for example accuracy, completeness, timeliness and usefulness (Islam & Rahman, 2017). Second is system quality, which is "the extent to which the system is technically sound, error-free, easy to learn, user friendly, well documented, flexible, etc. (Gorla et al., 2010, p. 219)." There is some overlap between the concept of system quality and that of usability, including for example concepts such as ease of use and user-friendliness (Nielsen, 1994); thus, this can be an aspect of usability. Some studies have investigated these factors, finding that they are relevant to customer brand engagement via social media (Duong et al., 2020; Islam & Rahman, 2017; Jayasingh & Venkatesh, 2016; Naqvi et al., 2020; Pongpaew et al., 2017; Zhao, 2019). These quality dimensions can be considered as aspects of the web design quality (Molinillo et al., 2021), but as the aesthetic and functional design of the site itself is out of the control of the social seller, this research focuses on issues of information quality. This research extends these previous

studies, arguing that information quality and system quality also relates to business customer brand engagement:

Hypothesis 1: Information quality of the social selling platform influences business customer brand engagement on social selling platforms.

Hypothesis 2: System quality of the social selling platform influences business customer brand engagement on social selling platforms.

The second two factors in business customer brand engagement are virtual interactivity and reward, both of which can be conceptualised as elements of the third component of information system quality – service quality (Gorla et al., 2010). Interactivity is the extent to which the brand directly interacts with customers on social media, either in impersonal ways (e.g. community posts) or in personal ways (e.g. messages and responses) (Islam & Rahman, 2017). The effect of interactivity on customer brand engagement has been widely confirmed, both in the context of individual B2C customers (Duong et al., 2020; Islam & Rahman, 2017; Zhao, 2019) and B2B relationships (Barney-McNamara et al., 2020; Karampela et al., 2018, 2020; Murphy & Sashi, 2018; Taiminen & Ranaweera, 2019; Wu & Li, 2018). Therefore, it is reasonable to state that:

Hypothesis 3: Virtual interactivity of the social selling platform influences business customer brand engagement on social selling platforms.

Finally, there are rewards, or intrinsic and/or extrinsic benefits to the individual for interaction (Islam & Rahman, 2017). Evidence for rewards is less certain, particularly in the B2B literature on customer engagement. Islam and Rahman (2017) did find that rewards influenced customer engagement in a B2C social selling platform. However, this finding has not been extended to the B2B context. Therefore, as an exploratory hypothesis, this research investigates the following relationship:

Hypothesis 4: Reward of the social selling platform influences business customer brand engagement on social selling platforms.

Finally, this research extends previous findings on business customer brand engagement and relationship strength in use of social media for marketing (Karampela et al., 2018, 2020; Luo et al., 2021; Murphy & Sashi, 2018) to apply to social selling:

Hypothesis 5: Business customer brand engagement influences the customer-firm relationship strength on social selling platforms.

1.2.4. Customer needs and product type: Organism responses

Although the S-O-R paradigm does not explicitly try to explain the internal mechanisms of decision-making that influence the response, it does acknowledge that these internal conditions do have an effect (Islam & Rahman, 2017). This raises the question of what kinds of internal conditions could influence B2B consumer response to social selling. Given the limited development of the literature on this question (Ancillai et al., 2019), it is difficult to answer this question with certainty. However, customer need for the product type is one possibility. One preliminary theoretical framework argues that technology orientation of an industry, as well as the company, could influence the receptiveness to social selling (Barney-McNamara et al., 2020). This research extends the possible role of technology orientation, since today most firms must use at least some technology even if they do not have a technology orientation per se. Therefore, it is argued that the type of product (technology or non-technology products) may moderate the platform characteristics' effect on brand engagement:

Hypothesis 6: The product type being sold (technology/non-technology) will moderate the relationships of social selling platform quality (information quality, system quality, virtual interactivity and reward) and business customer brand engagement.

1.3. The conceptual framework

The conceptual framework (Fig. 1) shows the expected relationships and hypotheses of the study. These hypotheses were tested using a business customer survey.

2. Data and methods

Questionnaire design. The questionnaire design is summarised in Table 1. The questionnaire included a total of 30 items adapted from prior studies, most of which had investigated the constructs in the context of B2C buyer–seller relationships and social media marketing (not direct selling) (Ahn et al., 2007; Hollebeek et al., 2014; Islam & Rahman, 2017; Jang et al., 2008; Yang et al., 2017). The items were then adapted to the research context as appropriate, including changing the wording to refer to social selling and the B2B relationship context.

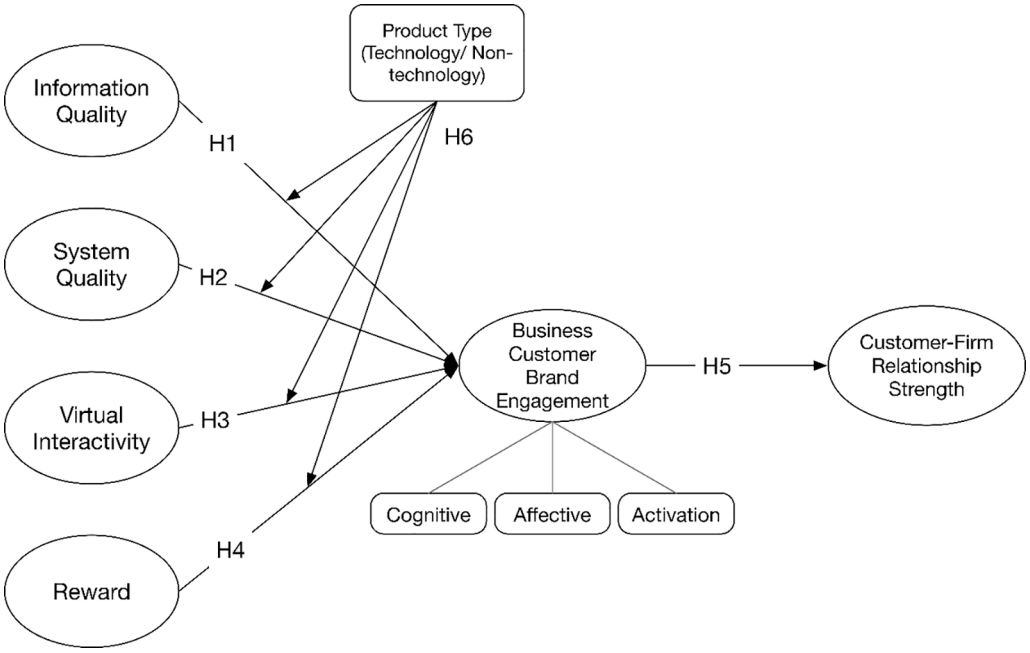

Fig. 1. The conceptual framework of the study.

Table 1
Summary of the questionnaire.

Scale	Items	Sample Items	Source
System Quality (SQ)	6	[Social seller] has an appropriate style of design for site type.	Ahn, et al. (2007)
Information Quality (IQ)	6	[Social seller] provides complete information.	Ahn, et al. (2007)
Virtual Interactivity (VI)	4	[Social seller] communicates information in an appropriate format.	Jang, et al. (2008)
Reward (RW)	2	[Social seller] offers monetary rewards.	Jang, et al. (2008)
Business Customer Engagement (BCBE)			
Cognitive	3	Using [social seller] gets me to think about [supplier brand].	Hollebeek, et al. (2014)
Affective	3	I feel very positive when I use [social seller].	Hollebeek, et al. (2014)
Activation	3	I spend a lot of time using [social seller] compared to other brands.	Hollebeek, et al. (2014)
Customer-Firm Relationship Strength (SCR)	3	Since our company started using social media, the company and suppliers have experienced an increase in mutual trust.	Yang, et al. (2017)

Data collection. Data was collected from a sample of business customers who followed the social media site of several B2B social sellers in different service domains (n = 378). Service domains included training, consulting, legal, digital marketing, and information and communication technology (ICT) firms. The data was collected via an online survey platform over the period of one month. Participants were selected randomly from among the social sellers' follower lists, with recruitment invitations distributed via Facebook Messenger. All respondents were asked to validate their position through an organisational e-mail address, to ensure that only B2B sellers were included. The initial contact rounds with page followers included a total of 1,200 contacts, leading to a response rate of 31.5%. This does raise the question of whether non-response bias or late response bias was a concern since this was lower than 70% of initial contacts (Okafor, 2012). Since there was no direct way to control for this within the population (for example, re-sampling or comparison to records), the Q-sort procedure was used.

Q-sort. The Q-sort procedure was used to assess content validity of the questionnaire prior to distribution. Q-methodology is a form of preliminary factor analysis used to investigate inter-rater consistency and attitudes (McKeown & Thomas, 2013). It can also be used to compare to quantitative findings as a form of external comparison for non-response bias. The Q-sort procedure is essentially an expert review process, wherein a panel of experts is asked to assign items to a set of constructs; the percentage of agreements in placement between the initial definition and the expert panel is then used to evaluate the overall agreement. A panel of six experts was used for the Q procedure. In the initial Q-sort round (summarised in Table 2), the agreement level was 66.67%. There were an additional two rounds, with agreement rising to 70% in the second round and 90% in the third round. A confirmation round of the final questionnaire, conducted with 12 experts, found 95% agreement. This final version of the questionnaire was therefore considered adequately reliable.

Data analysis. Data analysis was conducted using structural equation modelling (SEM), a whole-model regression procedure (Byrne, 2016). The analysis, which was conducted in Lisrel, was intended to assess the factor structure of the measures and the internal relationships as proposed in the hypotheses. To test moderation effects of product type (technology/non-technology), the research model was constructed for the two sub-groups, allowing for comparison of the internal relationships.

3. Results

3.1. Respondent profile

Table 3 provides a summary of the firms responding to the survey (n = 378). The majority of firms were technology service providers, with the largest groups being ICT providers and digital marketing. The largest non-technology group was consulting, followed by legal and training firms. Most of the firms (84.1%) were small firms with not more than 50 employees. However, firms had relatively high revenues; while 63.2% had revenues of under 50 million Thai baht per year, 23% had incomes of 50 to 200 million baht and 13.8% had higher income. Therefore, the sample consisted of mainly small, though high-revenue, technology-oriented service firms.

Table 3
Firm characteristics of respondent firms (n = 378).

	Number	Percent	Cumulative Percent
Service Domain			
Training	14	3.7%	3.7%
Consulting	86	22.8%	26.5%
Legal	28	7.4%	33.9%
Digital Marketing	99	26.2%	60.1%
Information and Communications Technology (ICT)	151	39.9%	100.0%
Total	378	100.0%	
Firm Size (Employees)	Number	Percent	Cumulative Percent
Small (No more than 50)	318	84.1%	84.1%
Medium (51 to 200)	53	14.0%	98.1%
Large (Over 200)	7	1.9%	100.0%
Total	378	100.0%	
Firm Revenues	Number	Percent	Cumulative Percent
Under 50 million THB	239	63.2%	63.2%
50 to 200 million THB	87	23.0%	86.2%
Over 200 million THB	52	13.8%	100.0%
Total	378	100.0%	

Table 2
Summary of Q-sort outcomes (final confirmatory round).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	NA	**Total**	**Hit (%)**
1SQ (6)	11		1							12	92%
2IQ (6)	1	11								12	92%
3VI (4)		1	7							8	88%
4RW (2)				4						4	100%
5BCCP (3)					6					6	100%
6BCAFF (3)						6				6	100%
7BCAC (3)							6			6	100%
8SR (3)								6		6	100%
Total item placement				60	Hits		57	Overall hit ratio			95%

3.2. Reliability and validity

Reliability and validity tests are summarised in Table 4. Cronbach's alpha was used to assess internal consistency, with a minimum level of 0.70 or higher used to indicate adequate reliability (Hair et al., 2016). All measures reached this level, indicating adequate reliability. Composite reliability (CR) and average variance extracted (AVE) were used to assess convergent validity, with minimum values of CR > 0.70 and AVE > 0.50 respectively (Hair et al., 2016). All measures passed this requirement as well. Factor loadings were examined at a minimum value of 0.60 to ensure all items were loaded onto the same latent variable (Brown, 2015) (Table 3). No items were removed, and the factor loading was consistent with the outcomes of the final round of the Q-sort procedure. For discriminant validity, was also assessed (Table 5). All variables passed this measure. Following these reliability and validity checks, the model was considered adequately structured, and the consistency between these checks and the Q-sort outcomes reduced concerns about non-response bias. Following, the analysis continued to the SEM process.

3.3. Structural model

The structural model (Fig. 2) is used to assess the initial hypotheses. The goodness of fit of the model can be described as good overall. The chi-square value ($\chi^2 = 1.51$, p =.680) exceeds the level of significance (p >.05), indicating that the model is adequately fitted (Byrne, 2016). The chi-square/DF (0.50) was also adequate. As for relative fit measures, these were also consistent with the expected measures for a good fit (NFI = 1.00, CFI = 1.00, IFI = 1.00, GFI = 1.00, RMSEA = 0.00) (Hu & Bentler, 1999; Kline, 2016). Therefore, there were no concerns about the fit of the model.

Table 4
Reliability and validity measures for quantitative data.

Construct	Items	Factor Loading	Cronbach Alpha	Composite reliability	AVE
System Quality			0.926	0.912	0.633
	SQ1	0.730			
	SQ2	0.830			
	SQ3	0.810			
	SQ4	0.770			
	SQ5	0.810			
	SQ6	0.820			
Information Quality			0.923	0.914	0.638
	IQ7	0.800			
	IQ8	0.750			
	IQ9	0.830			
	IQ10	0.840			
	IQ11	0.790			
	IQ12	0.780			
Virtual Interaction			0.897	0.868	0.621
	VI13	0.800			
	VI14	0.830			
	VI15	0.780			
	VI16	0.740			
Reward			0.871	0.873	0.775
	RW17	0.890			
	Rw18	0.870			
Cognitive			0.889	0.895	0.740
	BCECP19	0.880			
	BCECP20	0.820			
	BCECP21	0.880			
Affection			0.883	0.849	0.652
	AFF22	0.850			
	AFF23	0.790			
	AFF24	0.780			
Activation			0.884	0.898	0.746
	ACT25	0.880			
	ACT26	0.880			
	ACT27	0.830			
Customer-Firm Relationship Strength			0.836	0.863	0.678
	SCR28	0.810			
	SCR29	0.830			
	SCR30	0.830			

For each relationship, the t-statistics are compared against a critical value of 3.182 (for a two-sided distribution with three degrees of freedom and a significance level of α = 0.05) (Lindley & Scott, 1984). Results are summarised in Table 6. As these results show, the relationships for IQ → BCBE (β = 0.31, p =.007), VI → BCBE (β = 0.24, p =.018), RW → BCBE (β = 0.28, p =.006) and BCBE → SCR (β = 0.91, p =.001) were all significant. However, the relationship SQ → BCBE (β = 0.14, p =.051) was not significant at the p <.05 level. Therefore, as summarised in Table 6, Hypothesis 1, Hypothesis 3, Hypothesis 4 and Hypothesis 5 were all accepted but H2 was rejected.

3.4. Moderation test

While Hypotheses 1 to 5 were concerned with direct relationships, H6 was about the potential moderation effect of product type (technology versus non-technology products). To test this, the sample was divided into two groups, with Group 1 representing customers of technology products and Group 2 representing customers for non-technology products. The same structural model as above was then applied to determine whether there was a significant difference.

Group 1 (Technology products). The absolute goodness of fit for the Group 1 model (Fig. 3) was adequate ($\chi^2 = 14.91$, df = 9, p =.09, χ^2/df = 1.65). Relative goodness of fit measures were also adequate (CFI = 1.00, NFI = 1.00, IFI = 1.00, RMSEA = 0.05). This was broadly consistent with the model indicated. Results (Table 6) show that the β and t-values are somewhat different from the full sample, with the exception of RW → BCBE.

Group 2 (Non-technology products). Goodness of fit for Group 2 (Fig. 3) was also adequate, including both absolute measures ($\chi^2 = 4.62$, df = 4, p =.33, χ^2/df = 1.15) and relative fit measures (CFI = 1.00, NFI = 1.00, IFI = 1.00, RMSEA = 0.00). These measures are generally consistent with the fit measures of Group 1. The regression tests (Table 6) are also generally consistent with those of Group 1, with one exception. For SQ → BCBE, the outcome for Group 1 (β = 0.19, p =.020) was higher than that for Group 2 (β = 0.11, p =.146). Furthermore, this relationship was significant for Group 1, but was not significant for Group 2. Therefore, for most of the relationships Hypothesis 6 is rejected. However, for the SQ → BCBE relationship, Hypothesis 6 is supported. This is an interesting finding because as noted above (Section 3.2) and in the hypothesis summary (Table 7), Hypothesis 2, which concerns SQ → BCBE, was the only other hypothesis that was rejected (see Fig. 4).

3.5. Discussion

Table 8 summarizes the hypothesis test outcomes, including the main effects (Section 3.2) and the moderation effects (Section 3.3). In brief, information quality (H1), virtual interactivity (H3) and reward (H4) had a significant, positive effect on business customer brand engagement, regardless of product type. Business customer brand engagement had a significant and positive, as well as relatively strong, effect on the strength of the customer-firm relationship (H5). In the full sample, system quality (H2) was not significant as a factor in business customer brand engagement. However, when broken down by product type, it was shown to be significant for the technology customer group, but not the non-technology customer group (H6). While other relationships did not show evidence of moderation interactions, these findings do suggest that there may be a difference in customer needs and preferences based on what kind of product they are buying.

One of the key issues these results raise is whether the S-O-R

Table 5
Descriptive statistics, correlations and average squared variance.

Variable	Mean	SD	SQ	IQ	VI	RW	BCECP	AFF	ACT	SCR
SQ	5.41	0.877	***0.796***							
IQ	5.38	0.870	0.839	***0.799***						
VI	5.38	0.900	0.815	0.839	***0.788***					
RW	5.46	0.947	0.750	0.695	0.809	***0.880***				
BCECP	5.31	0.972	0.726	0.746	0.772	0.742	***0.860***			
AFF	5.37	0.922	0.711	0.747	0.755	0.701	0.923	***0.807***		
ACT	5.40	0.965	0.770	0.778	0.787	0.739	0.802	0.783	***0.864***	
SCR	5.41	0.907	0.743	0.744	0.763	0.726	0.725	0.720	0.802	***0.823***

* Diagonal values: Square root of AVE.

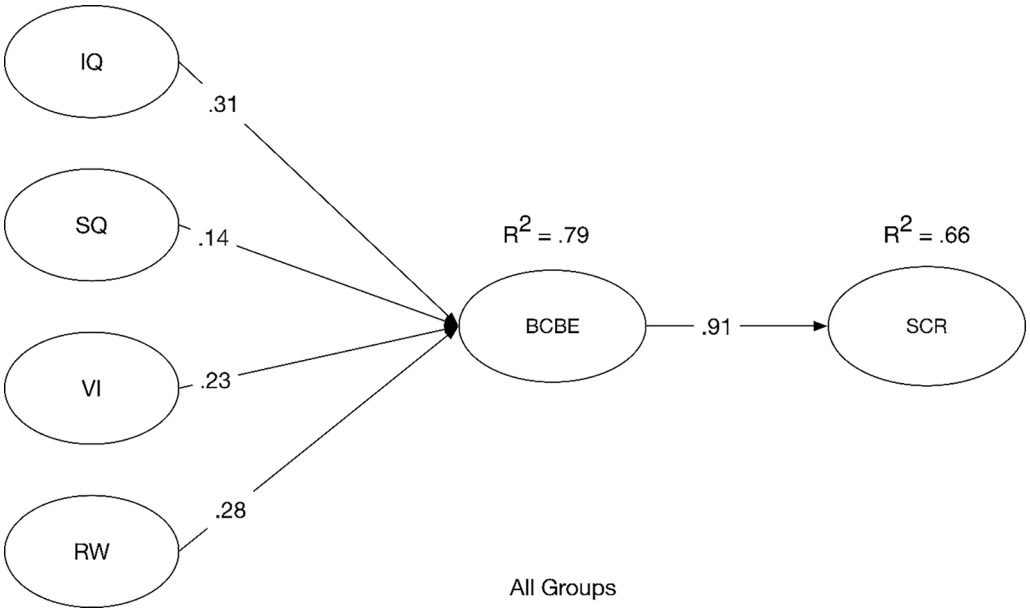

Fig. 2. Path model for full group analysis.

Table 6
Summary of regression test outcomes.

Path	β	t	p(t)
IQ → BCBE	0.31	6.63	0.007**
SQ → BCBE	0.14	3.14	0.051
VI → BCBE	0.24	4.71	0.018*
RW → BCBE	0.28	7.16	0.006**
BCBE → SCR	0.91	26.94	<0.001***

*Note: * p <.05 ** p <.01 *** p <.001.*

paradigm is a useful theoretical model for understanding B2B interactions on social selling sites. The S-O-R paradigm has been used effectively by other authors at the level of the individual consumer (Islam & Rahman, 2017; Naqvi et al., 2020; Wu & Li, 2018). At the same time, a previous review has indicated that the S-O-R paradigm is unreliable in the context of in-store consumer responses, where findings using the paradigm have been very mixed (Vieira, 2013). This research has suggested that at least in the context of social selling for B2B customers, the S-O-R paradigm is reasonably reliable. In part, this may be because while for in-store shoppers there may be a wide range of possible stimuli, making it difficult to differentiate between their effects (Vieira, 2013), the number of stimuli for B2B buyers engaged in social selling sites may be much less, since there is both less variability and less range in the possible interactions. Thus, the S-O-R paradigm was successful in this instance, though it does need more investigation and definition in the context of the B2B social selling platform.

The second key issue is to what extent B2B customer brand engagement is similar to the B2C customer brand engagement that has so far dominated research into social media engagement and social selling. This is a question that is very difficult to answer, since the literature on social selling in a B2B context is so fragmented (Ancillai et al., 2019) and since so many studies on B2B social selling are still focused on the individual relationship of the buyer and seller with social media as a communication channel (Barney-McNamara et al., 2020). While these personal relationships are known to influence buyer trust formation (Taiminen & Ranaweera, 2019), it is unclear exactly what kind of effect less personal relationships have on business customer brand engagement (Barry & Gironda, 2018). However, the findings of this study do have a lot in common with other studies that have investigated the effect of social selling in the B2B context (Ancillai et al., 2019; Handarkho, 2020; Islam & Rahman, 2017; Molinollo et al., 2020). Particularly, the effect of information quality (Duong et al., 2020; Islam & Rahman, 2017; Jayasingh & Venkatesh, 2016; Naqvi et al., 2020; Pongpaew et al., 2017; Zhao, 2019), virtual interactivity (Barney-McNamara et al., 2020; Duong et al., 2020; Islam & Rahman, 2017; Karampela et al., 2018, 2020; Murphy & Sashi, 2018; Taiminen & Ranaweera, 2019; Wu & Li, 2018; Zhao, 2019) and rewards (Islam & Rahman, 2017) were as expected from the previous literature. At the same time, the findings also support the essentially social nature of B2B social selling, which has been remarked by previous authors (Handarkho, 2020; Molinollo et al., 2020). These previous authors found that there was a significant aspect of social experience within social selling, which the present study also supports. Thus, these findings suggest that business customer brand engagement may be consistent with the outcomes from B2C customer brand engagement, which are relatively well-

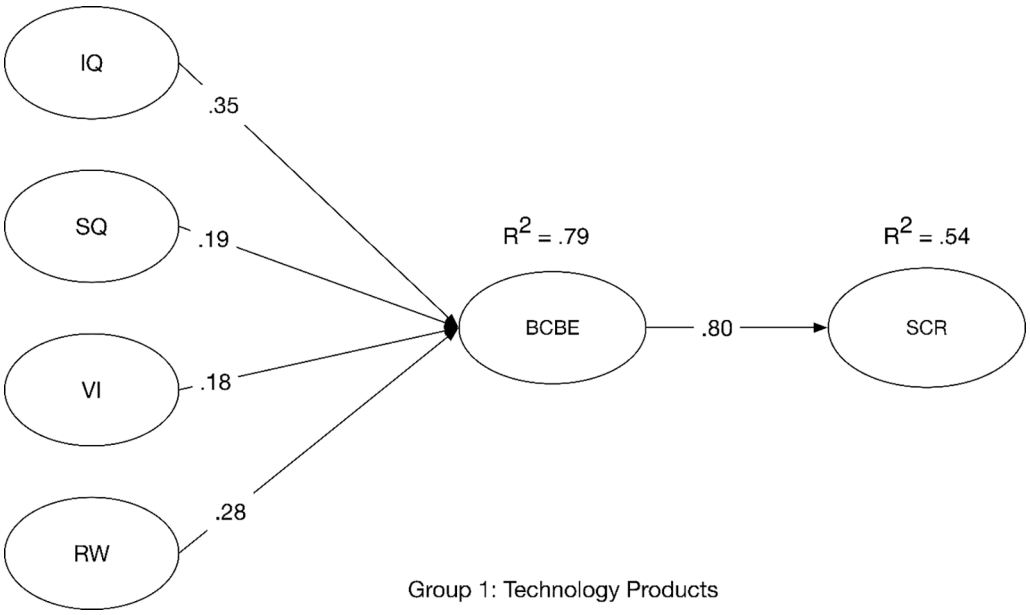

Fig. 3. Path model for Group 1 (Technology products).

Table 7
Summary of Group 1 and Group 2 moderation test outcomes.

Hypotheses	Group1		Group2		Hypothesis result
	B	t-value	B	t-value	
IQ > BCBE	0.35	4.65	0.31	5.22	Not Supported
SQ > BCBE	0.19	2.82	***0.11***	***1.95***	Supported
VI > BCBE	0.18	2.25	0.25	3.96	Not Supported
RW > BCBE	0.28	4.75	0.28	5.42	Not Supported
BCBE > SCR	0.80	15.66	0.96	22.23	Not Supported

established and have been previously defined (Hollebeek, 2011; Hollebeek et al., 2014). However, it should be considered that this may in part be due to the predominance of small firms in the sample, as these firms may have informal or individual decision-making processes (Lussier & Sonfield, 2015) and rely heavily on personal sales relationships for sales decisions. This is something that could be investigated in later research through direct evaluation of formalisation of sales relationships.

This study did not show a general effect for system quality, unlike the other system factors that were tested. However, product type (technology) did moderate this relationship, suggesting that technology buyers are more sensitive to the system quality features. This may be explained by the familiarity of Facebook (where the social selling sites were operated). Simply, with most social media users using Facebook (Tankovska, 2021), it is unlikely that they would encounter any significant challenges in system quality that could influence their perspective on a buyer. Instead, they may be more likely to consider the system quality aspects of social selling as an inherent part of the web design of the host platform (in this case Facebook), which has been noted in earlier studies to have an effect on social selling (Molinillo et al., 2021). These findings also raise the question of why technology buyers were more sensitive to system quality than non-technology buyers, as this was

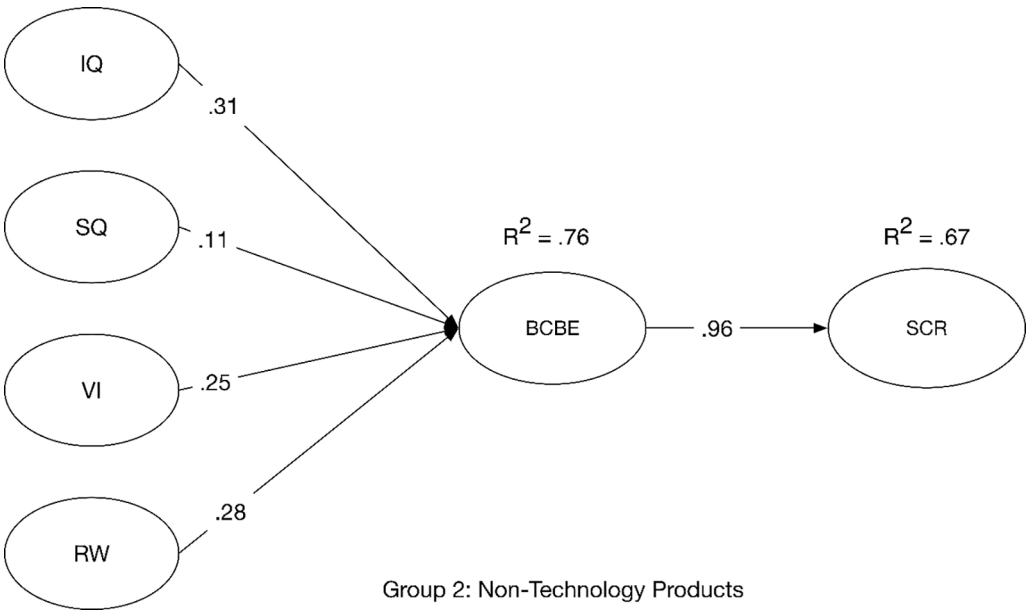

Fig. 4. Path model for Group 2 (Non-Technology products).

Table 8
Summary of hypothesis test outcomes.

Hypothesis	Relationship	Outcome
1	IQ → BCBE	Supported
2	SQ → BCBE	Rejected
3	VI → BCBE	Supported
4	RW → BCBE	Supported
5	BCBE → SCR	Supported
6	Moderation (Technology/Non Technology products)	Partially Supported

the only significant moderation effect observed. There is no clear answer within the literature which is fragmented and incomplete on this point. However, it is possible that there are technical requirements for technology buyers that cause such buyers to enact stricter constraints on social selling. For example, if technology buyers are concerned about product reliability or site security, they may be less likely to buy from a social seller and more likely to buy from a known external seller. This is a question that cannot be easily answered given the state of the literature or the findings of the present study. At the same time, this does not mean it is not an important finding that offers some information about the overall role of social media. For example, it is possible that if social selling were conducted on a platform that is not as widely used, such as LinkedIn (Godinho & Correia, 2021), the system quality of the site may be significant. In other words, system quality may be a dissatisfier, rather than a satisfier, for social media selling. Even though this finding cannot be fully explained, it still contributes to the literature by highlighting the relative experience of users and their potential insensitivity to issues of information quality on commonly used platforms.

4. Conclusion

This study investigated the development of strong customer-firm relationships through social selling, using a sample of followers of social selling sites oriented to B2B customers in Thailand. The study was based on the S-O-R paradigm, which is a classical paradigm of consumer behaviour. The model that was used has its roots in previous studies of social selling that focused on B2C customers, but it was adapted to the B2B environment and context by changing the stimuli and responses. The findings, which were derived from SEM analysis, showed that many of the identified motivations drove business customer brand engagement with B2B-oriented social selling sites. Specifically, information quality, virtual interactivity and rewards of the site all influenced the formation of business customer brand engagement. However, even though it had been indicated as a factor in previous studies on B2C social selling sites, system quality did not have a significant effect on business customer brand engagement. This does suggest that the formation of business customer brand engagement is somewhat different from consumer brand engagement as it is classically modelled. As expected, business customer brand engagement also contributed to the strength of customer-firm relationships. The exploratory moderation analysis, which investigated the role of product type (technology or non-technology), also found that even though system quality was not significant in the full sample, for technology customers it did affect business customer brand engagement. Thus, there was a small moderation effect observed.

These findings contribute to the literature by providing empirical support for the formation of business customer brand engagement on social selling platforms, which is an area that has not been studied empirically in detail. They build on the existing literature, which strongly suggests that social selling interactivity is individual, and shows that despite the individual nature of social selling relationships there are still impacts on the customer's perception of the brand itself. While this is not a surprising statement on its face, it is a step further than prior studies have gone in understanding how social selling influences brand relationships. However, there is still more work to be done in this field, particularly because of the limited theoretical and empirical evidence presently available.

5. Limitations and further research

There were some limitations to the current study. The obvious limitation is that the study focused only on selling across Facebook. It is possible therefore that sellers that use a different social media platform, such as Instagram or LinkedIn, or a collaborative communication platform like WhatsApp or Slack, may have a different experience. Another of these limitations is that it is unclear whether the sample was representative of B2B buyers using social selling sites. This is simply because there is little information about such buyers (or social sellers themselves), particularly in B2B context. While attempts were made to check for reliability and validity by using the Q-sort methodology, this could have affected the findings. The much bigger limitation is that there is inadequate theoretical support for the concept of business customer brand engagement. This concept is well-developed and defined in the context of B2C online marketing and sales, but has yet to emerge very much in B2B online marketing and sales. This is characteristic of the overall theoretical understanding of B2B purchase decisions and brand engagement in general, which is poor. This is particularly true for small firms (which comprised the majority of the sample), where only a few people may make decisions and where such decisions may be informal compared to larger firms. Thus, this research was based on a model derived from the B2C purchase decision, which does limit the extent to which the model can describe outcomes. This is an area where much more research and theoretical model development is needed. Furthermore, the empirical evidence on B2B social selling is limited, making it unclear whether B2B customers respond similarly to, or different from, B2C customers.

There is plenty of room for further theory development and empirical investigation of B2B social selling that can be taken up by future researchers. This work includes, at a minimum, developing a theory of business customer brand engagement and how it differs from (and is similar to) B2C customer brand engagement as set out by Hollebeek, et al. (2011) and others. Another opportunity is examination of social selling itself, examining how B2B and B2C social sellers engage with their respective customer bases and how the customers can be observed to respond. By better understanding what actually happens in social selling, for example what kind of information is offered, how interactive sellers are and what kind of rewards may be perceived, this type of research could improve understanding of both B2B and B2C social selling.

Finally, there are some practical recommendations that can be made for B2B firms and individual salespeople considering using social selling in their sales practice. The first recommendation is that social selling is likely to be most successful when the seller makes high-quality information easily available and is highly interactive with their social audience. In other words, social sellers need to be very specific and provide clear information about their products and/or services, including images, specifications, user manuals, and comparisons to other products. This is essential for B2B sales because these customers will be less motivated than retail customers by social relationships and brand considerations. The second issue is that B2B selling is *social* in nature – therefore, businesses and individual salespeople will need to be prepared for the level of social interaction and relationship building required to engage visitors and develop long-term relationships. This will involve not just sharing product information and videos or other content, but being present on social media to answer questions and engage in sales. Therefore, businesses considering B2B social selling may find it useful to designate staff members specifically to manage social media selling activities, content and relationships. Finally, the choice of which social media platforms to use is an important one. While system quality was not statistically significant, social media platforms do have different interaction tools and user orientations toward selling and

buying. Thus, the social seller should carefully consider their choice of social media platform and what it allows the seller to do. Would the customer be required to contact you in some other fashion, or would you risk missing a contact? Can you easily pass documents like specifications and manuals without going outside the site? Can you easily be found by existing and potential customers? These system quality features will make a difference in the effectiveness of social selling for the seller, regardless of whether it directly affects customer-brand engagement.

CRediT authorship contribution statement

Kedwadee Sombultawee: Conceptualization, Writing – review & editing. **Woraphon Wattanatorn:** Methodology, Software.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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