The Impacts of Social Media Adoption and SRM Relational Information Processes on Supply Chain Agility

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Abstract

Social media platform opens new ways for communication effectiveness. Moreover, how a firm to manage their relationship with suppliers and facilitate agility to improve resource utilization is an important issue. As a result, in order to improve supply chain agility, this study explores the impacts of social media adoption on supply chain agility by considering supplier relationship management (SRM) relational information processes. The results reveal that social media adoption at work facilitates SRM relational information processes and thus improves supply chain agility. Specifically, the result shows that SRM relational information processes play a fully mediating roles in the relationship between social media adoption and supply chain agility. The implications and recommendations for further research are discussed.

Keywords: Social Media Adoption, Supplier Relationship Management, Relational Information process, Supply chain agility

I. Introduction

Social media has introduced pervasive changes to communication effectiveness among individuals and groups [1]. Firms thus rely on social media technology to strengthen staff communication techniques [2]. Moreover, given the rapid development of technology and the unpredictability of customer demand, it is crucial for firms to acquire knowledge and expertise beyond their boundaries. Hence, external networks (e.g., supplier networks) have become great resources for developing new products [3]. For example, Procter & Gamble has acquired an important opinion of new product externally rather than depending on their own internal capability [4]. Honda involves technical staff from suppliers and combines suppliers' knowledge into new product innovation [5]. Because suppliers' feedbacks can be considered to be a significant source of information, a company's capability to utilize supplier knowledge as the key source of its sustainable competitive advantage [6, 7]. Thus, companies reconsider how they manage their relationship with suppliers and facilitate agility to improve resource utilization [8].

Because buyer of products by original equipment manufacturers is responsible for final product quality, buyers must transfer the most important knowledge and up-to date information with their suppliers to enhance product quality, and suppliers must have concurrent manufacturing capabilities to meet buyers' requirements. This relationship between suppliers and buyers enables the suppliers to develop dynamic capabilities [9, 10]. For instance, IBM supplies United Microelectronics Corporation (UMC) with state-of-the-art technology and up-to-date information to boost UMC's integrated circuit manufacturing capability. The customers (e.g., Apple and Huawei) of Taiwan Semiconductor Manufacturing Company (TSMC) are able to access directly to it and its strategic alliance partners' information system and thereby receive up-to-date status reports of their orders or some other valuable feedback [11]. Knowledge sharing among suppliers and buyers will become more frequent, allowing buyers to provide timely information to the supplier [12, 13]. Furthermore, it is increasingly important for firms to maintaining long-term customer relationships be able to obtain sustainable competitive advantage [14].

Therefore, it is important to know how social media adoption at work helps companies to acquire, share, and use information from suppliers and whether the supplier relationship management (SRM) relational information processes with suppliers to improve supply chain agility. Despite the social media adoption in knowledge management has been identified as an important issues, there have been no studies on the direct effect of social media adoption on SRM relational information processes and supply chain agility [8, 15, 16]. Accordingly, this study 1) evaluates whether social media adoption at work has a positive direct influence on supply chain agility; 2) examines the impact of social media adoption at work on supply chain agility by considering SRM relational information processes; 3) highlights the crucial role played by SRM relational information processes in this process, which is the main determinant of supply chain agility; and 4) determines what resources are important to implementing SRM relational information processes successfully and how these resources are combined to create value for the firm. These research questions are extremely important because firms make huge investments of time, money, and effort to implement information technology infrastructure, which may not produce benefits

[17]. To shed light on these topics, this study develops a theoretical model based on a status report from research in progress.

2. Literature Review and Hypotheses Development

This study examines the relationship between social media adoption and supply chain agility. Its variation is illustrated in which the mediating effect of SRM relational information processes on social media adoption and supply chain agility is explored. Figure 1 depicts the basic research model in which SRM relational information processes mediate the relationship between social media adoption and supply chain agility.

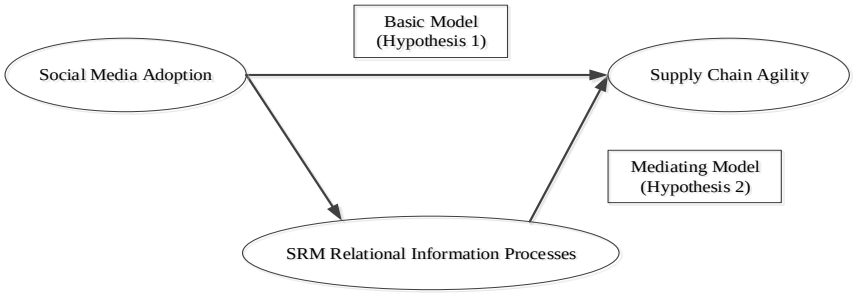

Figure 1. Research model

2.1 Social Media Adoption

Social media adopts innovative mobile technology to create interactive and communicating platforms [1]. It can be used to manage communication, enhance information flows, and provide resources for interacting and communicating with other people and facilitates online information exchange [18]. Firms apply social media technology such as Facebook, online blogs, discussion boards, Line, and wikis to allow members to offer various information types and interactions that correspond to individual needs, as well as to develop and maintain relationships with customers [19, 20]. Liu and Bakici [21] stated the motives for adopting social media technology and found that information sharing and social interaction were positively influence employees' adoption of social media technology. Consequently, social media platforms are being applied to exchange information, and it changed drastically the way individuals and groups communicate [22].

2.2 Supply Chain Agility

Gligor, Holcomb [15] indicated that supply chain agility as a company's ability to rapidly adjust tactics and operations within its supply chain to respond or adapt to changes in marketplace environment. They further identified five supply chain agility dimensions, namely alertness, accessibility, decisiveness, swiftness, and flexibility. Gligor, Esmark [23] found that supply chain agility positively influences a company's financial results by positively influencing its customer effectiveness (i.e., the extent to which customer-related objectives have been met) and cost efficiency (the ratio of resources utilized against the results derived). They found that the relationship between

supply chain agility and performance is stronger when firms operate within environments characterized by high levels of environmental uncertainty. In other words, supply chain agility has been extensively researched and linked to superior organizational performance [24].

Daft and Lengel [25] noted that richer modes of communication allow for more customized communication, immediate feedback, and the ability to gather additional data through observation. They found that more frequent communications with suppliers enables the firms to make new product development more efficient. Social media empowers members to increase the relationship strength and allows frequent communication among them because it provides multiple communication tools in the work environment [26]. Dumbrell and Steele [19] further indicated that social media not only provides an open platform in which peers can diffuse information with other peers but also leads to further contact. Furthermore, individuals have become increasingly dependent on social media technologies to stay in contact with their peers and colleagues, making social media a crucial medium for interaction. Trainor, Andzulis [27] noted that integration with social media applications with processes will help nurture new capabilities. Kim and Chai [28] further stated that information sharing enhances better partnerships and promotes integration among supply chain partners, firms thus rely on information sharing with supply chain partners to reach visibility. Because information sharing is considered very useful for promoting collaboration and cooperation in the supply chain members, thus social media could be transforming interactions between suppliers and buyers. Kanawattanachai and Yoo [29] found that work-related communication leads to knowing about source of expertise and trust building among partner members. Therefore, the present study argues that social media adoption at work can positively affect supply chain agility. Hence, the present study hypothesize that:

H1. The degree of social media adoption at work has a positive effect on supply chain agility.

2.3 SRM Relational Information Processes

Jayachandran, Sharma [30] defined relational information processes as specific processes that a firm uses to manage customer information with the aim of creating long-term relationships with the customers. They suggested that the relational information process construct consists of five dimensions: information reciprocity, information capture, information integration, information access, and information use. Relational information processes are the level of engagement of the firm in the systematic registration, integration, and analysis of customer information [31]. It is also about segmenting customers and customizing related offerings to create value for the firm [32]. Firms can maintain contact with their suppliers and gather relevant data at the same time. Data are stored in databases that can be analyzed and transformed into useful information, which is supplied to staff to enable the management of supplier relationships. Gulati [33] stated that through interaction and interdependence, firms develop social capital, which functions to facilitate transactions, reduce uncertainties, and offer access to external resources and knowledge, as well as provide an enduring source of knowledge advantage for firms. The partnerships between suppliers and buyers that integrate resources and create unique and valuable interorganizational assets

and relational benefits, these emphasize joint improvement projects, information sharing, product development, joint development of production and scheduling plans, and joint resolution of problems [34, 35]. Firm and supplier relationships are thus considered as strategic assets for firms to achieve competitive performance [36].

Social media applications have transformed online users' role from being passive to being active by the creation and sharing of information [20]. The constant development of social media and communication technology will highly influence the increasing speed of exchanging knowledge and information across social networks [37], and provide an opportunity for users to share their tacit knowledge and experience [38]. Greenberg [39] noted that social media technology adoption not only influences customer communications, community-based customer support, and innovation co-creation, but also enhances CRM upgrades by integrating social data into existing customer databases Therefore, businesses are beginning to use social media as a tool to develop and maintain durable relationships with customers, as well as for word-of-mouth marketing [40]. Ta, Esper [41] further stated that social media adoption by a buyer provides an opportunity to open communications between partners about the insight gained. The collaborative relationships between the supplier and the buyer are built upon interactions, continuous familiarization, and reciprocity building. These relationships encourage suppliers and buyers to share knowledge and motivate the partners to be more engaged in providing solutions, support, and services [34]. Thus, social media adoption at work is the cornerstone of SRM relational information processes. SRM relational information processes can thus be developed through the deployment of social media adoption.

Good information is key to effective just-in-time inventory management and delivery because it allows customers to carry less inventory [42]. When a supplier openly shares information, the buying firm gains insight about the acquisition and use of the supplier's product. An open flow of information from the supplier helps the customer firms anticipate product development and manufacturing schedules [43]. Subramani [44] found that a firm can obtain more advantages from their strategic partnership with suppliers by sharing knowledge and investing in relation-specific assets in alignment with increasing the dependence on a smaller number of suppliers. Jayachandran, Sharma [30] found that aside from molding responses to customers by giving them the access to communicate with the organization, relational information processes can be used to record customers' complaints and provide answers. Moreover, information exchange has become a relational competence within the relationship between supplier and buyer. When such information exchange between suppliers and buyers is conducted openly and informally, product and process innovation should increase [45]. For instance, Toyota and Honda have developed knowledge-sharing routines that have contributed to product and process innovations [46]. During an interaction with a transaction partner, there might be an opportunity for the supplier to acquire new knowledge that will help enhance its general capability. In contrast, if suppliers do not manage to acquire knowledge from buyers, it may not be possible to meet the buyers' expectations and standards, which may eventually cause performance or capability deficiencies [47]. Similarly, knowledge transferred from suppliers to buyers can help buyers to enhance product quality and flexibility as well as lower production costs [12]. According to Youn, Yang [48], it is imperative for firms to thrive

on their inter-organizational capabilities and to integrate with their supply chain partners to create and deliver value for the firm. These types of capabilities involve the buyer-seller relationship, a high level of inter-organizational knowledge, and the relational capability of a firm that is highly competent in networking with its supply chain partners. Based on the relational perspective, the relational benefits are probably due to the information technology system investment that the supplier and buyer have engaged in and their sharing of unique knowledge, contributing to the value of the partnership. Therefore, SRM relational information processes helping firms to identify which suppliers are profitable and help them determine which suppliers to prioritize in their daily business processes. The effective management of SRM relational information processes is thus a key issue in the performance of buyer-supplier relationships. Hence, the present study inferred that the development of SRM relational information process is beneficial for supply chain agility. Based on the discussion above, the present study hypothesizes the following:

H2. The association between the degree of social media adoption and supply chain agility is mediated by SRM relational information processes.

3. Methodology

3.1 Data Collection

The data of the survey for this study was collected from firms in Taiwan and the criteria for choosing the firms were based on a list of the largest Taiwanese corporations compiled by China Credit Information Service (2018), from which 1000 top firms were selected. In initial contacts, the purpose of this study was explained to managers from all listed companies. To those who showed interest to participate in this study, an online questionnaire was sent to the respondents in various companies via email. An online questionnaire was sent to the respondents in various companies via e-mail. A link to the online questionnaire for this study was distributed to the companies at the beginning of March 2019. 129 questionnaires were returned by April 2019. All returned questionnaires were valid. The statistical results obtained from the questionnaire were analyzed. Table 1 shows the demographic breakdown of the respondents in terms of gender, age, industry, years of work experience, and social media use experience.

3.2 Measurement Instruments

An in-depth review of the literature on social media adoption, SRM relational information processes, and supply chain agility was conducted to clarify the research constructs. Based on the literature, the dimensions of each measure were identified to develop the draft questionnaire. This research attempts to understand how a firm applies social media to improve SRM relational information processes to enhance its supply chain agility. Therefore, this study defines social media adoption as the ability of the firm to apply technologies to create information exchange through online conversation and interaction [18]. This study referred to the research of Jayachandran, Sharma [30] and Trainor, Andzulis [27] to develop five questions. SRM relational information processes are defined as the processes that are used by a firm to manage supplier information to establish long-term relationships with suppliers [30]. This study referred to SRM relational information processes proposed by Jayachandran, Sharma [30] based on information reciprocity, information capture, information integration,

information access, and information use to develop 15 measurement items. According to Chang, Wong [32], information reciprocity is the routines that help suppliers to interact and share information with firms and help firms to respond to their customers; information capture routines are processes that retrieve information from supplier interactions with different sources and channels that are crucial parts of corresponding information processes; information integration refers to how firms merge supplier information retrieved from various sources, such as inter-organizational and external sources; information access refers to organizational members having access to the most up-to-date information regarding suppliers retrieved from other departments; and information use refers to the utilization of supplier information to custom the firm's products for certain customers along with tailor-made marketing strategies and services. Moreover, supply chain agility, the dependent variable in this study, refers to the ability to quickly adjust tactics and operations within the supply chain to respond or adapt to changes, opportunities, or threats in the environment [15, 49]. Thus, this study referred to the supply chain agility proposed by Gligor, Holcomb [15] based on alertness, accessibility, decisiveness, swiftness, and flexibility to develop 14 measurement items. Alertness is defined as the ability to quickly detect changes, opportunities, and threats. Accessibility is defined as the ability to access relevant data. Decisiveness is defined as the ability to make decisions resolutely. Swiftness is defined as the ability to implement decisions quickly. Flexibility is defined as the ability to modify the range of tactics and operations to the extent needed. The draft questionnaire was tested by some scholars and experts, which led to minor modifications in the wording, sequence, format and layout, question content and level of difficulty. After making sure that no item had problems, the final questionnaire was sent to all respondents via an e-questionnaire. All of the items were measured on a seven-point Likert-type scale, ranging from 1 (strongly disagree) through 4 (neutral) to 7 (strongly agree).

Table 1. Demographic characteristics of the respondents (n= 129)

Variable	Value	Percentage (%)	Variable	Value	Percentage (%)
Gender	Male	62.8	Years of social media use experience	≤ 1	2.3
	Female	37.2		2-7	53.5
Age	≤ 22	4.7		8-13	38.8
	23-32	27.2		≥14	5.4
	33-42	29.5	Years of work experience	≤ 3	20.9
	≥43	38.8		4-9	22.5
Industry	Government	21.7		10-15	17.1
	Service industry	31.0		16-21	18.6
	Manufacturing industry	24.8		≥22	20.9
	High tech industry	13.2			
	Other	9.3			

4. Results

Partial least squares (PLS) was employed to estimate the models of this study. PLS aims to estimate parameters by minimizing the residual variances of all the dependent variables involved. Compared to covariance-based structural equation modeling techniques, PLS is less stringent with distributional assumptions, sample size requirement, and measurement scale type [50, 51]. Moreover, the aim of this study is to

explore a new topic, not test theory or compare models, and thus PLS is an appropriate analysis technique for this study.

4.1 Measurement Model

This study applied exploratory factor analysis to establish whether the measurement items converge to the corresponding constructs (factors), whether each item loads with a high coefficient on only one factor, and whether this factor is the same for all items that are supposed to measure it. The results of factor analysis showed, SM5, IR3, IC1, II1, IA3, IU1, ALE3, DEC2, SWI3, and FLE1 were eliminated due to they could not be classified into "social media use", "information reciprocity", "information capture", "information integration", "information access", "information use", "alertness", "decisiveness", "swiftness", and "flexibility" dimensions, separately [52]. The measurement model of this study achieved good unidimensionality [53].

This study initially specified a null model for the first-order latent variables, in which no structural relationships were included. To assess the reliability of the measures, this study calculated Cronbach's alpha (CA), composite scale reliability (CR), and average variance extracted (AVE). Table 2 shows that the CR and Cronbach's alpha values exceed 0.80 [54, 55]; the AVE of all measures compellingly exceeds the cut-off value of 0.50 and the lowest AVE is 0.916 in the null model. [54]. Table 3 shows that the square root of the AVE exceeds the intercorrelations of the construct with the other constructs in the model, in support of discriminant validity [51, 54]. Additional support for discriminant validity is through inspection of the cross-loadings, which are not substantial in magnitude compared with the loadings [51, 56]. As shown in Table 2 and Table 3, internal consistency reliability, indicator reliability, convergent validity, and discriminant validity were assured for all of the measurement scales.

Table 2. Psychometric properties in null model for first-order constructs

Construct		Item	Loading	α	CR	AVE
Social media adoption		SM1	0.943	0.969	0.978	0.916
		SM2	0.961			
		SM3	0.963			
		SM4	0.961			
SRM relational information processes	Information reciprocity	IR1	0.968	0.930	0.966	0.934
		IR2	0.965			
	Information capture	IC2	0.971	0.941	0.971	0.944
		IC3	0.972			
	Information integration	II2	0.971	0.941	0.971	0.944
		II3	0.972			
	Information access	IA1	0.975	0.948	0.975	0.951
		IA2	0.975			
	Information use	IU2	0.978	0.953	0.977	0.955
		IU3	0.977			
Supply chain agility	Alertness	ALERT1	0.974	0.946	0.974	0.949
		ALERT2	0.974			
	Accessibility	ACC1	0.966	0.927	0.965	0.932
		ACC2	0.965			
	Decisiveness	DECI1	0.975	0.949	0.975	0.951
		DECI3	0.976			
	Swiftness	SWI1	0.967	0.929	0.966	0.934
		SWI2	0.966			
	Flexibility	FLEX2	0.971	0.940	0.971	0.944
		FLEX3	0.971			

†α = Cronbach's alpha; CR = composite reliability; AVE = average variance extracted

Table 3. Mean, standard deviation (S.D.), and intercorrelations of latent variables for first-order constructs

Constructs		Mean	S.D.	Social media	Relational information processes					Supply chain agility				
					Information reciprocity	Information capture	Information integration	Information access	Information use	Alertness	Accessibility	Decisiveness	Swiftness	Flexibility
Social media adoption		5.700	1.580	**0.957**										
SRM relational information processes	Information reciprocity	5.671	1.348	0.599	**0.967**									
	Information capture	5.713	1.325	0.599	0.855	**0.972**								
	Information integration	5.395	1.575	0.564	0.837	0.833	**0.972**							
	Information access	5.535	1.496	0.598	0.781	0.848	0.819	**0.975**						
	Information use	5.597	1.320	0.651	0.870	0.860	0.839	0.845	**0.977**					
Supply chain agility	Alertness	5.721	1.312	0.586	0.751	0.774	0.756	0.727	0.797	**0.974**				
	Accessibility	5.698	1.380	0.553	0.758	0.803	0.737	0.766	0.808	0.850	**0.965**			
	Decisiveness	5.659	1.326	0.574	0.732	0.770	0.764	0.683	0.772	0.871	0.814	**0.975**		
	Swiftness	5.671	1.442	0.581	0.788	0.799	0.783	0.734	0.794	0.856	0.837	0.902	**0.966**	
	Flexibility	5.674	1.271	0.576	0.714	0.731	0.760	0.694	0.721	0.802	0.812	0.807	0.857	**0.971**

†Square root of AVE on the diagonal.

Table 4 shows the CR and AVE values of the measures in the second-order models; these also show CRs greater than 0.90 and AVE greater than 0.8, which provides evidence of reliable measures. As shown in Table 4, the loadings of the first-order latent variables on the second-order factors exceed 0.8; the loading of information reciprocity, information capture, information integration, information access, and information use on relational information processes are 0.93, 0.943, 0.927, 0.920, and 0.947, respectively; the loading of alertness, accessibility, decisiveness, swiftness, and flexibility on supply chain agility are 0.938, 0.923, 0.942, 0.953, and 0.915, respectively. This supports the second-order model of relational information processes and supply chain agility. The results indicate that all loadings are significant at $\alpha = 0.001$.

Table 4. Assessment of second-order model of SRM relational information processes and supply chain agility

Second-Order Model			
SRM relational information processes		Supply chain agility	
CR	0.979	CR	0.979
AVE	0.824	AVE	0.822
	Loading		Loading
Information reciprocity	0.930***	Alertness	0.938***
Information capture	0.943***	Accessibility	0.923***
Information integration	0.927***	Decisiveness	0.942***
Information access	0.920***	Swiftness	0.953***
Information use	0.947***	Flexibility	0.915***

***$p < 0.001$.

4.2 Structural Model

The structural model aims to examine the relationship among a set of dependent and independent constructs. A bootstrapping analysis with 5,000 samples and the original 129 cases was performed to evaluate the significance of the path coefficients and estimate the standard error. Structural basic model resulting from this analysis is presented in Figure 2.

R^2 measures the relationship of a latent variable's explained variance to its total variance. Values of approximately 0.670 are considered substantial; values around 0.333 are considered average, and values around 0.190 are considered weak (Chin, 1998). Figure. 2 shows an average R^2 of 0.378 for supply chain agility. Specifically, the exogenous variables explained 37.8% of the variation in the supply chain agility. Another criterion for predictive validity of the basic model is to apply the Q-square test (also known as the cross-validated redundancy index) developed by Stone (1974) and Geisser (1975). To measure Q-square, a blindfolding procedure was performed. A Q-square value larger than 0 means that the basic model has predictive relevance [57]. From Figure 2, it can be concluded that this basic research model had good predictability. An investigation of the individual paths in Figure 2 revealed that social media adoption at work had a significant effect on supply chain agility ($\beta = 0.615$; $p < 0.001$). Therefore, hypothesis H1 is supported. In other words, social media adoption at work has a positive direct effect on supply chain agility.

The result of mediating effects is presented in Figure 3. It shows a substantial R^2 of 0.759 for supply chain agility and a moderate R^2 of 0.417 for SRM relational information processes. Specifically, the exogenous variables explained 75.9% of the variation in the supply chain agility. The research model accounted for 41.7% of the variation in the SRM relational information processes construct. Based on the Q-square value larger than 0 means that the

model has predictive relevance [57], it could be concluded that the proposed model had good predictability.

Figure 3 shows that the SRM relational information processes play a mediation role between social media adoption at work and supply chain agility. As suggested by Baron and Kenny [58], a direct path from social media adoption at work to supply chain agility was first estimated (Figure 2). Second, a direct path from social media adoption at work to supply chain agility was estimated and then an indirect path from social media adoption at work to SRM relational information processes and from SRM relational information processes to supply chain agility was estimated (Figure 3). Mediation exists if the coefficient of the direct path between the independent variable and the dependent variable is reduced when the indirect path through the mediator is introduced into the model [59]. The standardized beta of the direct path was 0.615 (see Figure 2) and 0.093 (see Figure 3) after the SRM relational information processes was introduced as a mediator. The amount of the relationship between social media adoption at work and supply chain agility accounted for by the mediator was 0.522, which indicates 84.88% (=0.522/0.615) of the direct effect. The significance of the mediation effect was assessed using the Sobel test. The z-value for the indirect path was 6.669 ($p < 0.000$). The VAF (Variance accounted for) is 85 % of total effect. Hence, the result provides support for the fully mediating role of SRM relational information processes between social media adoption at work and supply chain agility [60]. Therefore, hypotheses H2 is supported.

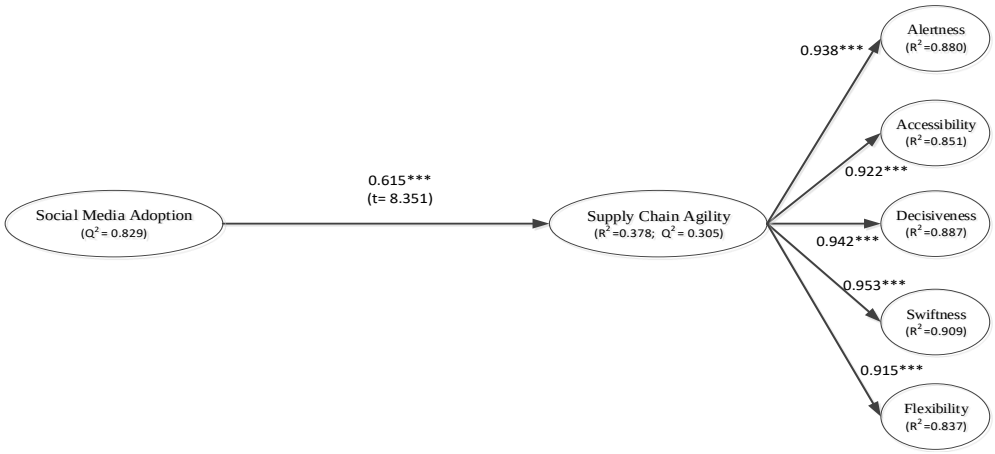

Figure 2. The direct effect. Betas for the paths and R^2 for the variables
*** denotes path coefficients significant at the $p < 0.001$ level.

An investigation of the individual paths in Figure 3 and Table 5 reveals that SRM relational information processes had a significant effect on supply chain agility ($\beta = 0.808$; $p < 0.001$). In turn, SRM relational information processes were successfully predicted by social media adoption ($\beta = 0.646$; $p < 0.001$), but there was not significant effect of social media adoption on supply chain agility ($\beta = 0.093$; $p > 0.05$). In other words, social media adoption at work has no direct effect on supply chain agility, but has a positive direct effect on SRM relational information processes, and SRM relational information processes have a positive direct effect on supply chain agility. This means that the influence of social media adoption at work on supply chain agility during the process will fully affect SRM relational information processes, which in turn affect supply chain agility. Hence, if a firm wishes to enhance its supply chain

agility, it should enhance its social media adoption at work, which will enhance SRM relational information processes and thus improve supply chain agility.

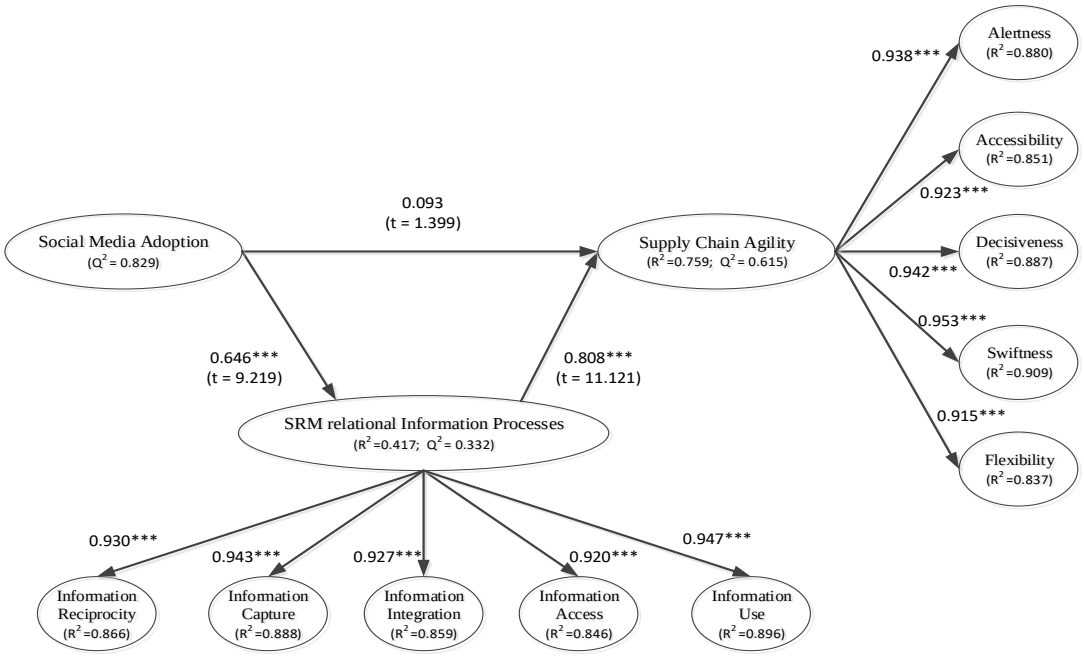

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Table 5: Assessment of second-order model of SRM relational information processes and supply chain agility

Second-Order Model			
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Information integration	0.927***	Decisiveness	0.942***
Information access	0.920***	Swiftness	0.953***
Information use	0.947***	Flexibility	0.915***

***p < 0.001.

5. Discussion

5.1 Theoretical Implications

According to the results of structural model (Figure 2), the β value for social media adoption on supply chain agility was 0.615 ($p < 0.05$), showing that social media adoption has a significant direct effect on supply chain agility. This means that if the social media adoption at work of an enterprise is high, it will significantly enhance supply chain agility. Previous studies have noted that social media adoption at work provides interaction, communication, and knowledge sharing opportunities to its members [2, 27]. Social media users can instantly search

for information, share it and create own content on social media platforms that can enhance the way of the public interacts among supply chain members [61]. This study suggests that because social media technology is an important tool for building new types of relationships among supply chain members, enterprises should have a comprehensive social media policy so that these platforms are used in a meaningful way by buyers and suppliers [62].

According to the results of structural model (Figure 3), the β value for social media adoption on supply chain agility was 0.093 ($p > 0.05$), showing that social media adoption does not have a significant direct effect on supply chain agility. The β value for social media adoption on SRM relational information processes was 0.646 ($p < 0.001$), showing that social media adoption at work has a significant direct effect on SRM relational information processes. The β value for SRM relational information processes on supply chain agility was 0.808 ($p < 0.001$), showing that SRM relational information processes have a significant direct effect on supply chain agility. This means that if a mediating relationship was existed between social media adoption and supply chain agility with SRM relational information processes acting as the mediator, social media adoption of an enterprise will not significantly enhance supply chain agility. Instead, if social media adoption of an enterprise is high, it will significantly enhance the SRM relational information processes, and thus enhance supply chain agility. The academic literature and business practices are giving more attention to the importance of creating value in buyer-supplier relationships. This value includes firm's direct product, acquisition, and operations costs [43]. Thus, this study suggests that an enterprise should have SRM relational information processes that facilitate effective information reciprocity, information capture, information integration, information access, and information use within the firm [63], and that top leaders should accommodate members of staff with a culture of continuous learning and a flexible SRM relational information processes infrastructure [64, 65].

5.2 Managerial Implications

The results show that social media adoption is not the major factor for enhancing supply chain agility, and suggest that SRM relational information processes are a significant intervening factor between social media adoption and supply chain agility. In other words, whether an enterprise can effectively enhance supply chain agility determines the benefits of both social media adoption and SRM relational information processes. Hence, both social media adoption and SRM relational information processes have become key strategic tools and significant attributes of supply chain agility [66].

According to Pei Lyn Grace [67], social media adoption has the potential to contribute to knowledge sharing in the organizational context. At the same time, social media adoption is different from conventional communication methods, such as phone calls and e-mails, due to its ability to create public connection among individuals so that they can share information. Its strengths are not only in supporting ad-hoc network formation bringing together various experts with different expertise and contexts, it operates beyond time, space, and geographical boundaries, and thus maximizes the SRM relational information processes for partner members. Moreover, social media adoption allows the creation of informal users' networks, facilitating the flow of ideas and knowledge by allowing efficient interaction, communication, and exchange of informational content [18]. The real-time information sharing can provide timely and insightful information for supply chain partners and enable them to enhance abilities to fulfill a customer' needs, reduce operational costs and delivery time, and increase agility and responsiveness to market demand and uncertainty [22, 68]. Hence, to increase social media

adoption at work, this study suggests that enterprises should introduce and maintain a social media platform to support and encourage staff to often use social media such as Facebook, Line, LinkedIn, and Twitter to share knowledge, create conversations with team members, and create social relationships with suppliers and customers.

Due to the fact that supply chain collaboration enables firms to share key information, greatly extend their resources and capabilities beyond their boundaries, thus eventually resulting in reducing uncertainty and better agility [68]. The ability to work collaboratively to create solutions emphasizes the need for close coordination between suppliers, partners, and sellers [69]. A buyer could thus develop an embedded relationship with its suppliers and create the suppliers' dependence on the buyer, and both parties would share the relational benefits [34, 70]. Moreover, in industry, external sources of knowledge and innovation such as suppliers play a significant role for buyers. The ability to integrate knowledge of various suppliers is seen as an important strategic capability and increases supply chain agility [71, 72]. Hence, this study suggests that effective management of relationships is required to improve firm capabilities [73, 74]. If a firm has an excellent ability to enhance SRM relational information processes, it may facilitate knowledge transfer among supply chain members. Firms with strong SRM relational information processes can effectively enhance the interaction of supply chain members, contribute to product or service quality and new product or service development, and develop unique and valuable capabilities [75]. Through SRM relational information processes, firms can not only establish supplier value management and use resources more effectively and efficiently, the supplier and buyer can respond and adapt to each other in areas that cannot be completely written into a formal contract, with a business friendship formed [34].

Furthermore, efficient supply chain agility requires interaction between partner members or individuals, understanding of knowledge requirements, and effective and convincing communication to ensure that information is shared efficiently and members can understand and utilize information to perform their tasks [76-78]. Thus, this study suggests that to enhance SRM relational information processes, enterprises should enhance the ability of information reciprocity, information capture, information integration, information access, and information use. Regarding information reciprocity, enterprises should focus on communicating periodically with suppliers and maintain regular contact with suppliers. Regarding information capture, enterprises should systematically collect supplier information using external sources such as market research agencies, syndicated data sources, and consultants. Regarding information integration, enterprises should systematically integrate supplier information from different communication channels such as telephone, mail, e-mail, the Internet, fax, and personal contact. Furthermore, enterprises can merge information collected from various sources for each supplier. Regarding information access, enterprises should ensure that staff can easily access required and up-to-date supplier information. Such information access will allow employees to develop and manage supplier relationships. Regarding information use, enterprises should provide staff with supplier information to assess and select suppliers, as well as to identify the best suppliers [15, 28, 79].

6. Conclusions

Supply chain agility has become increasingly important as businesses no longer compete as solely autonomous entities, but rather as supply chains [49]. Supply chain members must be capable of rapidly aligning their collective capabilities to respond to changes in demand and supply [15, 80]. Moreover, firms should focus on improving the effectiveness of operational

functions with effective supply chain management to effectively compete in the global market. Therefore, the purpose of this study was to understand the impact of social media adoption at work on supply chain agility by considering SRM relational information processes. The results reveal that social media adoption at work facilitates SRM relational information processes and SRM relational information processes play a fully mediating role in the relationship between social media adoption and supply chain agility.

Although the findings of this study have a number of meaningful implications for academics and practitioners, the study has some limitations. First, this study only investigated the relationship among social media adoption, SRM relational information processes, and supply chain agility. Future studies can consider the other factors such as knowledge management capability, and strategic flexibility. Second, this study applied a purposive sampling method. The sample size (129 firms) was relatively small and thus to strengthen generalizability, future studies should consider a longitudinal approach with a larger sample size. Third, this study investigated how social media adoption bridges SRM relational information processes, as well as how it can enhance supply chain agility in a Taiwanese context, which contains a specific set of cultural, societal, and linguistic attitudes. Finally, the measurement scale items of this study were translated from Chinese to English, which may cause slight variations in meaning. Therefore, future studies should extend this study to other regions of the world.

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