

## **The Impact of Social Media Adoption on Firm Performance: A Comparison Between the Service and Manufacturing Sectors**

### **Abstract**

Amid the growing trend of social media adoption, previous studies investigated the business values of social media adoption. Using a set of panel data comprising 289 S&P 500 companies from 2015 to 2018, this study intends to fill a gap by employing regression analysis to empirically assess the business values of social media adoptions in service and manufacturing sectors with detailed social media adoption measurement. Our results indicate that while Facebook usage positively correlates with the performance of both service and manufacturing sectors, the impact of Twitter usage only enhances service sector performance. This distinction highlights the varying effectiveness of different social media platforms across diverse industry sectors.

*Keywords: Traditional media; social media; Facebook; Twitter; service sector; manufacturing sector*

### **1. Introduction**

Social media encompasses digital platforms that facilitate creating, sharing, and exchanging information, ideas, and other forms of expression through virtual communities and networks. Its large user base originates from its accessibility; these platforms are available to a broad audience with minimal entry barriers. With a vast global user base, social media has fundamentally changed communication among individuals and organizations. As of January 2020, more than 4.5 billion people have access to internet service, and at least 84% of them are using social media regularly, according to Digital 2020 Global Digital Overview (Kemp, 2020). Companies have been highlighted in previous studies as needing to adopt social media to maintain competitiveness, emphasizing its essential role in modern business strategies (Cui et al., 2018; Paniagua and Sapena, 2014).

Integrating social media into business practices offers benefits crucial for staying competitive in today's market. First, social media platforms enable companies to increase their brand visibility to a broader audience. This heightened exposure is vital for building brand identity and recognition in a crowded marketplace. Tritama and Tarigan (2016) note that social media is an excellent way to improve brand visibility, emphasizing its effectiveness in reaching wider audiences. Additionally, Stojanovic et al., (2018) applied the schema theory and a multidimensional approach to brand equity, finding that the intensity of social media use positively affects brand awareness, as demonstrated in a study involving international tourists (Hallock et al., 2019).

Compared with traditional media, such as TV commercials, radio advertisements, or direct mail advertisements, the interactive environment of social media improves customer engagement. Loyal customers not only consistently patronize the business but also act as ambassadors, recommending the business to others, a factor that is advantageous for the sustained growth of the company. A study emphasized the growing importance of social media for firms, particularly in building online engagement among customers, which is increasingly vital due to the global popularity of these platforms (Hallock et al., 2019). Another study using a meta-analytic model across 97 studies involving 161,059 respondents found that customer engagement in social media is driven by satisfaction, positive emotions, and trust, but not necessarily by commitment (De

Oliveria, 2020). This highlights the impact of social media on fostering meaningful customer relationships rooted in emotional connections and trust.

In addition, social media platforms offer a cost-effective marketing channel, vital for businesses aiming to maximize their return on investment. Registering a social media account and posting content are always free, while targeted advertising is more flexible than traditional media. This is especially critical for small and medium enterprises and businesses with limited resources, as traditional marketing channels can be prohibitively expensive. Alalwan (2018) recognized that as social media's user base expanded, organizations began to realize their business potential, noting that social media marketing is more convenient and cost-effective than traditional media marketing.

Social media is also a rich data source on consumer behavior and market trends. Companies can use this information to make informed decisions, tailor their products and services, and stay ahead of market shifts. The rise of social media platforms like Facebook and Twitter has led to significant changes in communication patterns and market dynamics. These platforms have transitioned social activities from the real world to the virtual domain, enabling real-time interaction and information sharing. As a result, companies have started to leverage these sites to build strong relationships with users, fostering online brand communities (Khalid, 2022).

Previous research has emphasized the significance of social media, specifically highlighting its connection with financial and operational business performance (Paniagua and Sapena, 2014). Numerous studies have focused on how adopting social media affects business outcomes. A comprehensive summary of these empirical studies is provided in Table 1, categorizing them based on their topics, data sources, samples, research methodologies, and key findings (Chou et al., 2022):

**Table 1 Overview of previous empirical studies**

Author	Research goal/topic	Data source	Sample	Method	Finding
Kishida <i>et al.</i> (2005)	Relationship between new venture performance and abilities.	D&B database.	557 respondents.	Regression analysis.	Performance-ability relationships differ across institutional contexts.
Wikström and Ellonen (2012)	Impact of firm's investment in social media features on their online business models.	Scandinavian newspaper websites.	4 cases.	Case study.	Firms have not allowed the social media features to affect their online revenue models.
Rishika <i>et al.</i> (2013)	Effect of customers' participation in a firm's social media efforts on intensity of the firm's relationship with its customers.	Data set from a focal firm.	845 customers from January 2008 to March 2011.	Propensity scores matching technique and structural equations.	Customer participation in a firm's social media efforts increase the frequency of customer visits. Social media participation better serves customers and create sustainable business value.
Schniederjans <i>et al.</i> (2013)	Impression management direct-assertive strategies in social media and financial performance.	Blogs, forums, and corporate websites.	150 publicly traded companies.	Ordinal logistic regression.	Social media positively impacts impression management.
Schmidt (2014)	Whether social media plays an important	COMPUSTA T.	392 America	Linear dynamic	A firm's adoption of social media plays a minor role in determining profits.

	role in determining a firm's profits.		n firms from 2005-2013.	model.	Higher lagged profits, lagged productivity, firm sizes, and advertising expenses lead to higher profits.
Alarcón-del-Amo <i>et al.</i> (2018)	Whether a proactive behavior regarding managerial social media usage involves a higher company's performance.	Web-based survey.	152 valid responses.	Structural equation model.	Positive attitudes and beliefs and a higher use of social media can address with higher firm performance. A more proactive managerial involvement with social media actually benefits company performance.
Pratono (2018)	To develop a structural equation model to explain the relationship between social network and firm performance.	Survey in Indonesia 2014–2015.	380 usable responses.	Structural equation model.	The use of social media in management will not improve firm performance, unless the firms build trust in social networks.
Cade (2018)	How firm-investor communications on social media affect investors' perceptions of the firm.	Twitter.	558 U.S. workers.	Multiple experiments.	Influence of criticism on nonprofessional investors' perceptions depends on the number of Retweets. There are benefits of addressing the criticism directly or redirecting attention to a positive highlight of the firm's disclosure.
Singh (2019)	Whether social media interactions between firms and their followers provide relevant information about firm performance.	Twitter.	Twitter accounts of 2,229 firms from 2006 to 2017.	Regression analysis.	The followers' engagement with a firm's Tweets is informative at the aggregate level. The change in followers' engagement volume helps predict its future stock returns.
Braojos <i>et al.</i> (2019)	Describe how social commerce-IT capabilities influence firm performance through the online engagement of customers.	2013 Forbes and social media sites of firms.	100 firms from June to August 2014.	Structural equation model.	Social commerce-IT capabilities of social media and e-commerce positively influence firm performance through online customer engagement.
Khajeheian and Ebrahimi (2020)	Effect of value co-creation for consumers.	Social media of Press-TV.	274 responses.	Regression analysis.	Users' participation significantly affects the loyalty of media brand.
Chou <i>et al.</i> (2022)	Effects of multiple social media platforms on firm performance.	COMPUSTAT and social media sites of firms.	S&P 500 companies.	Regression analysis.	The difference of business values of different social media platforms exists.
Chou <i>et al.</i> (2022)	Business value of social media adoption in different countries.	COMPUSTAT and social media sites of firms.	Taiwanese and S&P 500 companies.	Regression analysis.	Business values of Facebook and Twitter are different in the U.S. and Taiwan.

Source: Chou *et al.*, 2022.

In the dynamic landscape of contemporary business, the adoption of social media has become a pivotal strategy for companies seeking to enhance their digital presence and engage with a broader audience. Numerous studies, as identified in Table 1, have explored the impact of social media adoption on business values, yet two significant gaps persist within the existing literature. Firstly, many prior investigations have focused solely on the binary presence of social media accounts without delving into the nuanced degrees of usage. Recognizing that the depth of engagement varies across companies, it is imperative to consider not only the adoption but also the intensity of interaction. This study builds upon the groundwork laid by Chou et al. (2022), who introduced an improved 5-point scale to measure the degree of usage, offering a more nuanced understanding of social media engagement.

Secondly, the impact of social media adoption is often treated as a uniform phenomenon, disregarding the potential variations across industry sectors. Companies operating in diverse sectors, such as manufacturing and services, may have distinct key success factors influenced by the nature of their operations. Therefore, understanding the unique implications of social media adoption within specific industry contexts is crucial for a more comprehensive analysis. This research aims at addressing these dual gaps by providing a detailed and sector-specific examination of the business values derived from social media adoption.

In essence, the purpose of this study is to offer a more nuanced and comprehensive empirical analysis of the business values associated with social media adoption. By not only considering the depth of usage through an enhanced measurement scale but also accounting for industry-specific factors, we intend to provide valuable insights that contribute to a more holistic understanding of the impact of social media on businesses. Through our research, we aspire to guide practitioners, researchers, and policymakers in optimizing social media strategies tailored to the unique characteristics of their industry, ultimately fostering more informed and effective decision-making in the realm of digital marketing and communication.

Using precise measurements to capture the actual usage of corporate Facebook and Twitter accounts of 289 S&P 500 companies from 2015 to 2018, this study intends to answer the following research questions:

- Can companies benefit from adopting and frequently using Twitter or Facebook?
- Will the influence of social media adoption in Manufacturing companies differ from that in Service companies?

The rest of this study is organized as follows: Section 2 conducts a literature review. Section 3 provides the dataset and explains the methodology used in this paper. Section 4 contains the analysis and results. Section 5 discusses the managerial implications of the empirical evidence. Section 6 concludes the paper with a discussion of the research limitations and makes suggestions for future studies in the field.

## **2. Literature review and hypotheses**

### ***2.1. Resource-based view (RBV) and social media***

Developed initially by Wernerfelt in 1984 and expanded upon by various authors, the Resource-Based View (RBV) is a management theory that suggests a firm's competitive advantage and performance primarily derive from the resources and capabilities it possesses. These resources, both tangible and intangible, must be valuable, rare, inimitable, and non-substitutable (VRIN criteria) to provide sustainable competitive advantage. RBV explains how firms achieve competitive advantage and economic rents through the effective ownership and management of

these internal resources. It shifts the focus from external market conditions to the unique capabilities and assets within a firm, highlighting how these can be leveraged to create a sustainable competitive edge (Miller, 2019).

Social media' structure is conceptualized through a 'honeycomb' framework, identifying seven core functional resources: identity, conversations, sharing, presence, relationships, reputation, and groups (Kietzmann et al., 2011; Paniagua and Sapena, 2014). This framework emphasized the multifaceted nature of social media, far beyond traditional media's capabilities. Apart from the seven functional resources, social media possesses a distinctive trait: the two-way information flow among users, a feature absent in traditional media. Several studies described the interactive characteristic of social media platforms and shown that social media usage enhances capacity management, such as demand control (O'Leary, 2011; Singh et al., 2017; Lee, 2018) and better customer relationship management (Ramanathan et al., 2017; Kim, 2019).

With the growing trend of social media users, previous studies argued the importance of social media adoption (Cui et al., 2018; Paniagua and Sapena, 2014) for companies to stay competitive. The adoption of social media is important during product and service design. Several techniques, such as a jury of executive opinion, sales force composite, and market survey, are the traditional options to help companies define the direction of product development (Heizer et al., 2017). Typically, these options require highly experienced employees and a substantial investment of effort to capture and incorporate customers' needs into the design process. Given social media's two-way information flow feature, companies can better understand what customers are thinking and what they really want (Chan et al., 2017; Lee, 2018; Chae et al., 2020). In other words, adopting social media can effectively help and improve a company's innovation and operation process (Kane et al., 2014; Zhang and Benyoucef, 2016).

However, social media platforms are generally accessible to all users, which cannot be defined directly as a rare resource in RBV. Instead, it is more appropriate to treat the actual usage of social media platforms as a company's rare resource. Without actual use, companies cannot benefit from the interactive features of social media and should not be considered a company with social media adoption. In empirical analysis, measuring the actual usage of social media platforms is necessary to capture the commercial value. An active account is determined via the following aspects: frequency of posts, level of engagement, response rate, and variety of content. Frequency of postings demonstrates ongoing interactions with its audience. Regular posting keeps the audience informed and engaged and helps maintain the company's presence in the users' social media feeds. Engagement level can be measured by likes, shares, comments, and the overall reach of the posts. High engagement levels indicate that the content is resonating with the audience. Responsiveness is determined by how quickly a company responds to comments, inquiries, and messages on its social media platforms. A high response rate is often associated with good customer service and can significantly enhance a brand's reputation. The topic diversity and posting types can be used to approximate the variety of content. Variety not only keeps the audience engaged but also caters to different preferences within the audience, ensuring that the content remains fresh and interesting. The interactive process in social media usage for company

is crucial in building company-customer relationship (Froehle, 2006; Kiron, 2012).

Therefore, social media usage can be considered a rare, valuable, and hard-to-imitate company resource that can be further transformed into valuable capabilities, leading to sales and business reputation (Barney, 1991).

## ***2.2. Social media platforms difference***

In market analysis, advertising, and community management, it is important to understand what social platforms users choose to use and engage with social media content (Rowe and Alani, 2014). With the development of the information age, Facebook and Twitter are among the most widely used social media platforms and exhibit differences in business characteristics:

First, demographics. As of 2023, Facebook is most popular among the older millennials, particularly those aged 35-44. This group likely adopted Facebook early in its existence and has continued to use it as they've aged (We Are Social & Hootsuite, 2022). As a comparison, the largest age group on Twitter is users aged 25-34, representing 38.5% of its user base (We Are Social & Hootsuite, 2022). Younger people have a more favorable opinion of Twitter compared to older individuals. Understanding these demographic differences between Twitter and Facebook enables businesses to reach and engage with their target audience, maximizing the impact of their social media efforts more effectively.

Second, engagement strategies. Facebook offers higher engagement opportunities, with an average of 700 interactions per million followers, compared to Twitter's 300. Its addictive nature encourages frequent user logins, providing more opportunities for engagement. Facebook is geared towards deeper, more personal engagement and allows for sharing more detailed content. It's more challenging to gain likes but offers a platform for comprehensive marketing campaigns. In contrast, Twitter's fast-paced nature suits brief attention spans and allows for quick, impactful messaging, but requires constant posting due to the transient nature of tweets. Twitter is ideal for quick dissemination of information and connecting to current events. It's more straightforward to gain followers here compared to Facebook (Comscore, 2016).

Third, advertising cost. According to the report (Upbeat Agency 2022), the Cost per Thousand Impressions (CPM) for Facebook is around \$8.33, while the average CPM for Twitter is \$4.07. However, the Cost per Like for Facebook is around \$1.23, compared to the \$2.31 Cost per Action price in Twitter. Given the same advertising cost, a company can expect Facebook to facilitate more in-depth and engaged interactions with users, whereas Twitter offers a wider but less deep-reaching engagement with customers.

In conclusion, Facebook is more suitable for businesses targeting seniors and seeking deeper customer engagement. Twitter, conversely, is ideal for reaching a younger, news-focused audience with concise messages and less intensive advertising competition.

## ***2.3. Social media in Manufacturing and Service Sectors***

In the evolving landscape of modern business, the role of social media in both the manufacturing and service sectors has become increasingly prominent. Previous studies illustrated

that social media helps companies to predict customers' expectations (Chae et al., 2020; Chan et al., 2017; Lee, 2018). Manufacturing and service businesses are identified by product, with physical goods being the predominant output in manufacturing, and services being the main offering in the service sector.

Although the exact boundary of goods and services is still not clear (Fernández, 2022), some studies believe that there are four distinct characteristics for service (Edgett, 1993; Lovelock 2004; Moeller, 2010; Hoffman, 2017; Fernández, 2022): intangibility, heterogeneity, inseparability, and perishability (IHIP). Since service cannot be touched or stored, service companies often rely on social media to communicate their benefits and advantages using customer reviews, examples of their work, and engaging content. For manufacturing companies, social media can showcase tangible products through images, videos, and detailed descriptions, which is more about highlighting the features, quality, and usage of the physical goods. The interactive nature of social media allows for real-time feedback and customization of services, which is crucial given the heterogeneity and inseparability aspects. Social media also helps in creating time-sensitive campaigns and promoting offers that require immediate action, taking advantage of the perishable nature of services. In contrast, manufacturing companies might use social media to clear stock or promote seasonal, and the perishability is less critical.

Understanding these differences is crucial for tailoring effective social media strategies that align with the specific goals and customer interactions unique to each sector. Furthermore, due to the inherent differences in demographic, customer engagement and costs, different social media platforms like Facebook and Twitter may also yield diverse impacts on firm performance across different sectors. This leads us to propose specific hypotheses about the relationship between social media adoption and firm performance:

H1a: There is a positive relationship between Facebook adoption and firm performance for manufacturing companies.

H1b: There is a positive relationship between Twitter adoption and firm performance for manufacturing companies.

H2a: There is a positive relationship between Facebook adoption and firm performance for service companies.

H2b: There is a positive relationship between Twitter adoption and firm performance for service companies.

H3: The influence of social media adoption in the Manufacturing sector differs from that in the Service sector.

### **3. Methodology**

#### ***3.1. Data source and method***

In our research, we used regression analysis to investigate the previously mentioned hypotheses. We collected data from both Facebook and Twitter to analyze the effects of using social media platforms on businesses in the manufacturing and service sectors. This information was compiled into two distinct datasets.

Due to missing values, we managed to include 289 companies from the S&P 500 in our

panel data and categorized them into service and manufacturing industries according to the North American Industry Classification System (NAICS). A total of 1,156 observations were included in the dataset. The secondary data was collected from COMPUSTAT, and the Social Media Usage data was manually collected from the company accounts on Facebook and Twitter.

The manufacturing sector encompasses 126 companies and 492 observations. The service sector encompasses 163 companies and 664 observations. Facebook and Twitter usage as treated as two independent variables in both datasets. Four regression models are therefore analyzed: Model 1, Manufacturing companies, no independent variables; Model 2, Manufacturing companies, including independent variables; Model 3, Service companies, no independent variables; Model 4, Service companies, including independent variables.

Paniagua and Sapena (2014) posited that the number of sales is one of the key indicators of firm performance. Given that the utilization of social media platforms is recognized as a valuable resource for gauging customer preferences and aiding companies in their product and service development processes, we choose sales as our measurement of firm performance and as the dependent variable within our regression models.

### ***3.2. Independent variable***

Our regression models incorporate the utilization of Facebook and Twitter, which stands as two most extensively utilized social media platform as the independent variable. In a prior study conducted by Braojos et al. (2019), an examination was conducted on the impact of social commerce-IT capabilities on firm performance through online customer engagement. The assessment of social media capability was carried out using a 5-point scale listed below: Comment(s) on social media site more than one month ago: 1 point; in the last month: 2 points; two weeks ago: 3 points; in the last week: 4 points; in the last two days: 5 points.

Compared with the earlier study by Chou et al. (2022), due to the substantially expanded timeline in our data set, we utilization social media platforms usage with the new 5-point scale guided by the following principles: Firm stays inactive on social media site for one year or above: 1 point; six month or above: 2 points; one month or above: 3 points; firm shows active status at least one time in a week: 4 points; firm shows active status at least five times or above in a week: 5 points.

### ***3.3. Control variables***

Based on the theory of production, Lin et al. (2016) highlighted the significance of controlling for capital and labor inputs. Accordingly, we chose Current Assets, Property, Plant, and Equipment, and the number of Employees as the control variables in our study.

To enhance the resilience of our empirical findings, we introduce year-specific dummy variables (2016, 2017, and 2018 for both datasets). These additions serve the purpose of mitigating the potential influences of year-based and sector-based effects within our regression analysis, following the approach mentioned by Peng et al. (2009).

Overall, seven control variables are: sales/turnover (net), 2016, 2017, 2018, current assets



– total, property, plant, and equipment - total (gross), employees.

## 4. Results

### 4.1. Empirical results for manufacturing companies.

Table 2 presents the descriptive statistics and inter-variable correlations. The regression analysis focusing on manufacturing firms is detailed in Table 3. We incorporate control variables, such as the year and additional factors to adjust for annual and sectorial variations, in Model 1 as a preliminary step for more comprehensive analysis. Subsequently, Model 2 integrates variables representing social media platform usage, allowing us to examine the impact of social media engagement on organizational performance.

**Table 2 Descriptive statistics and correlations**

	Mean	Std. Deviation	1	2	3	4	5	6	7	8	9
Sales/Turnover (Net)	19639.14	27951.572	1								
2016	0.25	0.433	-.027	1							
2017	0.25	0.433	-.001	-.333**	1						
2018	0.25	0.433	-.041	-.333**	-.333**	1					
Current Assets - Total	10711.45	16540.174	-.814**	-.006	.008	.012	1				
Property, Plant and Equipment – Total (Cross)	16348.53	36228.020	.625**	-.004	-.001	.008	.397**	1			
Employees	245.12	3424.627	.034	-.035	-.035	.082	.019	-.021	1		
FB Usage	2.61	1.922	.204**	.000	.000	.000	.146**	.144**	-.021	1	
Twitter Usage	3.24	1.620	.034	.000	.000	.000	.025	-.015	-.047	.121**	1

\*\* . Correlation is significant at the 0.01 level (1-tailed).

**Table 3 Regression Analysis – Manufacturing companies**

	<u>Model 1</u>	Std. Error	<u>Model 2</u>	Std. Error
<i>Dependent Variable: Sales</i>				
Constant	2779.400*	(1274.476)	-79.050	(1853.437)
<i>Control Variables</i>				
2016	-864.975	(1711.023)	-860.644	(1701.871)
2017	-89.082	(1711.164)	-79.873	(1702.014)
2018	1523.516	(1713.851)	1525.148	(1704.690)
Current Assets - Total	1.133**	(.040)	1.122**	(.040)
Property, Plant, and Equipment	.277**	(.018)	.273**	(.018)
Employees	.214	(.178)	.230	(.177)
<i>Independent Variable</i>				
Facebook Usage			785.039*	(320.662)
Twitter Usage			302.938	(375.212)
R <sup>2</sup>	0.772		0.776	
N (observations)	492		492	

\*\* . Correlation is significant at the 0.01 level (2-tailed);

\* . Correlation is significant at the 0.05 level (2-tailed).

According to the empirical data in Table 3, a positive relationship between Facebook usage and sales is confirmed (Model 2=785.039,  $p < 0.05$ ), suggesting that manufacturing firms can benefit from the adoption and use of Facebook. H1a is supported while H1b does not show statistical significance.

#### 4.2. Empirical results from service companies

Table 4 presents the descriptive statistics and correlation matrix. Consistent with the datasets discussed in Section 4.1, we observed no evidence of collinearity among the variables. The empirical results of the regression analysis are depicted in Table 5. The configuration of Model 3 parallels that of Model 1 in Table 3, incorporating control variables. Subsequently, Facebook Usage is integrated into Model 4, enhancing the model for comparative purposes, and facilitating more in-depth analysis.

**Table 4 Descriptive statistics and correlations**

	Mean	Std. Deviation	1	2	3	4	5	6	7	8	9
Sales/Turnover (Net)	32700.78	56308.675	1								
2016	0.25	0.433	-.013	1							
2017	0.25	0.433	.008	-.333**	1						
2018	0.25	0.433	.036	-.333**	-.333**	1					
Current Assets - Total	109917.02	326360.085	.214**	-.002	.005	.007	1				
Property, Plant and Equipment – Total (Cross)	14877.31	39460.271	.605**	-.008	.005	.022	-.020	1			
Employees	145.72	1561.368	.091**	-.023	-.022	.068	-.001	.050	1		
FB Usage	3.05	1.847	.153**	.000	.000	.000	-.130**	.172**	.056	1	
Twitter Usage	3.18	1.623	.129**	.000	.000	.000	-.112**	.103**	-.069	.168**	1

\*\* . Correlation is significant at the 0.01 level (1-tailed).

**Table 5 Regression Analysis – Service companies**

	<u>Model 3</u>	Std. Error	<u>Model 4</u>	Std. Error
<i>Dependent Variable: Sales</i>				
Constant	13698.451**	(3434.078)	-2219.638	(5267.881)
<i>Control Variables</i>				
2016	946.471	(4725.681)	954.987	(4677.302)
2017	2078.858	(4726.275)	2101.470	(4677.895)
2018	3182.926	(4734.390)	3204.114	(4686.027)
Current Assets - Total	.039**	(.005)	.042**	(.005)
Property, Plant, and Equipment	.864**	(.042)	.835**	(.043)
Employees	2.151*	(1.075)	2.277*	(1.068)
<i>Independent Variable</i>				
Facebook Usage			2002.934*	(927.868)
Twitter Usage			3102.620**	(1045.554)
R <sup>2</sup>	0.421		0.434	
N (observations)	664		664	

\*\* . Correlation is significant at the 0.01 level (2-tailed);

\* . Correlation is significant at the 0.05 level (2-tailed).

As shown in Table 5, different from the results of the manufacturing companies, the empirical outputs from service companies indicate that there is correlation both between Facebook usage and sales (Model 4=2002.934,  $p < 0.05$ ) and between Twitter and sales (Model 4=3102.62,  $p < 0.01$ ). This supports both H2a and H2b. Given the varying levels of impact that Twitter and Facebook usage have on company performance, Hypothesis 3 is also validated.

#### 5. Discussion and managerial implications

As previously mentioned, companies are required to understand customer expectations and translate these requirements into the design process. Continuous interaction with customers is vital

to building and sustaining robust relationships. While traditional media channels like print ads, direct mail, and TV commercials remain viable options, the two-way communication facilitated by social media provides a more dynamic and effective means for businesses to understand, engage, and foster enduring relationships with their audience.

The empirical evidence from our study indicates that active engagement on Facebook positively influences the performance metrics of both manufacturing and service-oriented enterprises. Conversely, our analysis reveals that using Twitter predominantly augments the performance of service sector companies. This distinction suggests parallelism with corporate classifications, implying that social media platforms possess intrinsic categorizations that align differently with various business sectors.

In the context of manufacturing companies, Facebook's comprehensive user base and versatile content distribution capabilities are more congruent with their operational needs. This platform facilitates these companies in presenting their products, disseminating corporate updates, and fostering customer relationships. On the other hand, Twitter's real-time communication and customer interaction strengths resonate more effectively with the dynamic needs of the service industry, where immediate response and engagement are crucial.

These findings highlight the nuanced differences in how different types of businesses can leverage social media platforms. The efficacy of social media as a tool for business enhancement is not uniform across platforms; instead, it is contingent upon the specific characteristics and demands of the industry in question. Therefore, the strategic selection and tailored use of social media platforms, aligned with the company's industry classification and operational objectives, emerge as vital considerations in maximizing the potential benefits of social media in the business domain.

## **6. Conclusion**

This study has examined the impact of different social media (Facebook and Twitter) adoption on extra firm (Manufacturing and Service) performance. Our research findings empirically demonstrate that other social media platforms have varying effects on companies from different sectors. The use of Facebook significantly influences both manufacturing and service companies, whereas Twitter usage shows a more pronounced impact exclusively on service companies. This distinction is important because it highlights the necessity for businesses to tailor their social media strategies according to their industry, leveraging the unique strengths of each platform to maximize their engagement and performance.

However, our research has limitations. The primary focus on major platforms like Facebook and Twitter may need to pay attention to the potential impacts of emerging or less popular social media platforms. The digital landscape continually evolves, with new platforms regularly emerging and gaining traction among specific demographics or certain regions. These platforms often introduce novel features and foster unique user interactions, which can significantly impact business strategies and customer engagement in ways that differ from the more established networks. Platforms like TikTok, Instagram, Snapchat, or regional social media networks (WeChat or LINE) have garnered substantial user bases and have become influential in specific sectors or demographics. These platforms can offer different engagement and marketing opportunities, which might be more effective in reaching younger audiences or niche markets. Their distinct algorithms, content formats, and user behaviors could provide fresh insights into

consumer trends and preferences.

For future research, we suggest a more diversified approach, incorporating a more comprehensive range of social media platforms and expanding the geographic scope to include various global markets. Employing a mixed-methods research design combining qualitative and quantitative data could offer deeper insights into how social media impacts business performance. Qualitative analyses, such as case studies or interviews, could provide context and depth to the quantitative findings, illuminating the underlying mechanisms driving the observed effects.

In conclusion, while our study provides valuable insights into the business value of social media adoption, there remains a rich avenue for further exploration. Understanding the evolving digital landscape's role in shaping business strategies and customer relationships is crucial for continuously advancing knowledge in this field.

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