

Influence of social media adoption on the performance of construction small and medium-sized enterprises (SMEs) in Abuja – Nigeria

Social media's
influence on
SMEs'
performance

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Luqman Oyewobi

*Department of Quantity Surveying, Federal University of Technology,
Minna, Nigeria*

Olatunde Folaranmi Adedayo

Department of Architecture, Joseph Ayo Babalola University, Ikeji-Arakeji, Nigeria

Seth O. Olorunyomi

*Department of Quantity Surveying, Federal University of Technology,
Minna, Nigeria, and*

Richard Ajayi Jimoh

*Department of Building, Federal University of Technology,
Minna, Nigeria*

Abstract

Purpose – The purpose of this paper is to examine the influence of social media adoption on the performance of construction small and medium-sized enterprises (SMEs).

Design/methodology/approach – Construction SMEs owners and managers in Nigeria were surveyed using questionnaires to gather data. Partial least square structural equation modeling (PLS-SEM) was employed to assess measurement reliability and validity, as well as the hypothesized paths provided in the conceptual model that formed part of the final conclusions.

Findings – The empirical finding showed that social media usage increased knowledge accessibility, reduced costs and improved customer relations and service for organizations. Overall, social media adoption was significantly and positively related to SMEs business performance. Also, the paper revealed that learning capability mediates the relationship between social media and SMEs performance.

Research limitations/implications – Data for the study came from only one industry and one related line of business; thus, including more companies from different sectors or industries could be more interesting. The study's findings contributed to the growing body of knowledge about the impact of social media on the efficiency of businesses. Small and medium-sized businesses also need to understand and recognize the impact of social media on the organization's performance in order to achieve a long-term competitive edge from the adoption of social media.

Practical implications – According to the findings, small construction firms can benefit from marketing the brands through social media channels and improved learning capability. In terms of accessibility, cost savings and improved relationships with customers, research shows that social media promotion can be beneficial to businesses. A study like this has the potential to show how social media can help striving small businesses interact cost-effectively with customers all over the world, opening new doors for sales and continuous improvement.

Originality/value – The relationship between SME performance in Nigeria and the use of social media has received very little attention despite social media's promising potentials, particularly for small businesses. The authors hoped that this study will fill a gap in the authors' understanding of how social media affects the performance of small and medium-sized businesses (SMEs) in the construction industry.

Keywords Construction industry, Business, Nigeria, Social media, SMEs performance

Paper type Research paper



Introduction

The capacity and ability of construction firms to successfully innovate is viewed as central to enhancing the performance of both individual firms and the construction industry as a whole. Competition in the construction industry means that enterprises must outperform their rivals in order to continue in business and maintain a competitive benefit. Even though many emerging nations' SMEs are battling for market share, the fierce competition has weakened their performance (Salisu and Abu Bakar, 2020). Enterprises that currently have Internet access do not have to spend any more money to get involved in social media. SMEs can take advantage of social media because of its low cost and little technological needs (Ferrer *et al.*, 2013). Consequently, organizations' usage of social media is increasing at a fast rate, and it is quickly becoming an essential factor in business management (Mourtada and Alkhatib, 2014; Trainor *et al.*, 2014). As a result, more channels are being used by businesses (Kietzmann *et al.*, 2011). Companies are increasingly turning to social media because it allows them to communicate with their customers in a way that goes further than a one-on-one exchange (Siamagka *et al.*, 2015). Analytics, automatic posting, content marketing, marketing automation and consumer targeting may all be done cheaply using social media features. Using social media to market your products and services is a great way for businesses to grow their audience. There have been numerous studies done on the usage of social media in business and shown that it has numerous advantages (Ainin *et al.*, 2015; Kenly and Poston, 2016; Ahmed *et al.*, 2019).

Business strategist, as well as Information Technology (IT) researchers and business executives, are still trying to grasp the impact of these developing technologies on improving organizational business operations despite the rising implementation of social media among many firms. However, very few researches have proven that integration of social media into businesses has higher value than providing a deeper understanding of how they operate and how it might affect them for better and more productive outcomes (Ogaro, 2014). As a new phenomenon that transformed online communication and transactions, social media is being increasingly adopted by businesses (Abed, 2020). People's methods of distributing knowledge are altering as social networking becomes more commonplace. Facebook and other social platforms have a profound effect on organizations in a variety of ways, from the economy to marketing and educational programs (Pookulangara and Koesler, 2011). Social media is now used for marketing purposes. The dilemma of whether or not social media investments will benefit businesses that employ it remains unanswered. Evidence of networking site utilization may be found from all sectors including businesses, governments, schools as well as non-profits and social clubs and non-governmental organizations (AlSharji *et al.*, 2018). Social media has a minimal impact on smaller enterprises in the construction industry despite earlier studies focusing on the impact on hospitality (Tajvidi and Karami, 2017).

SME social media use has been the subject of much discussion in recent years (Durkin *et al.*, 2013). Social media has been shown to have a good influence on business in general (Ainin *et al.*, 2015). The adoption of social media by SMEs has been the subject of only a few studies (Ainin *et al.*, 2015; Trainor *et al.*, 2014; Ahmed *et al.*, 2019). It is said that SMEs in particular take advantage of social media because of their limited resources in running their ventures. Small companies (SMBs) have been shown to benefit from social media sites (Trainor *et al.*, 2014). Small businesses' usage of social media has not been assessed for its impact on their success despite the many benefits.

Without having to have a strong existence in other parts of the world, small businesses can now reach new consumers through the usage of social media (Bilbao-Orsorio *et al.*, 2014). It is attracted to smaller businesses because of its ability to erase boundaries of space and time (Alarcon *et al.*, 2015). As a result of its importance to SMEs, social media has seen a significant increase in the amount of entrepreneurship development literature (Edosomwan *et al.*, 2011).

It has been observed that small and medium-sized businesses could profit from employing social marketing tools because businesses lack the means to implement more conventional approaches to management.

Studies have focused on social media use in business-to-consumer scenarios, but this is no longer the case. According to a study by Pookulangara and Koesler (2011), the influence of social media on consumer buying behavior has been explored, as well as the ways it can be used to enhance brand awareness or gain information from consumers (Siamagka *et al.*, 2015) or how it can be used to start generating word-of-mouth suggestions (Rapp *et al.*, 2013; Chang *et al.*, 2016). Few researchers have examined at how SMEs utilize or select social media platforms regardless of the fact that it is becoming increasingly relevant and valued by them (Durkin *et al.*, 2013). Only a few of studies have explored the usage of social media to strengthen corporate management and, more specifically, its effect on the effectiveness of the organization (Ainin *et al.*, 2015). Six years on, what is the situation on the use of social media by SMEs in general and particularly in the Nigerian construction industry?

Social media can be implemented without any extra support for enterprises that are already linked to the Internet. Social media can also be implemented by small and medium-sized businesses (SMEs) due to their low cost and limited technological demands (Ferrer *et al.*, 2013). Prominence and widespread use of social media enhances online learning and sharing of information (Hur *et al.*, 2017). Social media helps people to connect and create content without any need for physical presence (Zhang *et al.*, 2017). In fact, social media has been used as an important platform for corporate goals and improved business results (Rapp *et al.*, 2013). Most companies use social media to grow marketing strategy and market penetration (Nisar and Whitehead, 2016; Pentina *et al.*, 2013). Social media also affects business analytics strategies that contribute to electronic word of mouth (eWOM) (Barreda *et al.*, 2015). In fact, the way marketing is done has been completely transformed in the modern world, thanks to advancements in Information and Communication Technology (ICT), particularly social media (Eid *et al.*, 2019; Khayer *et al.*, 2020). Abbasi *et al.* (2022) observed that since business started adopting social media, it has become a cheap and efficient way to share information.

The development of a social network could play an important role in business survival and growth in the context of small enterprises, with little financial capital in many of them (Corredoira and McDermott, 2018; González-Masip *et al.*, 2019). Park *et al.* (2018) emphasized that SMBs must build and use their personal and business relationships in order to stay competitively relevant. While consensus is that business networks may contribute to improving business efficiency, it is unclear how small business owners define, develop and manage their network relationships on personal levels in regional areas (Sharafizad and Coetzer, 2017). In addition, some researchers on small businesses have requested additional qualitative network studies to enhance their understanding of the networks of small business owners (Sarstedt *et al.*, 2014). This paper focused on the geographic specifics of small businesses and their networks and discussed this divide and adds an additional corporate dimension.

Literature review

Underpinning theories

Many concepts have led to studies into the potential impact of transferring new technologies from other industries in the field of construction industry organizations. Technology acceptance model (TAM), innovation diffusion theory (IDT), technology-organization-environment (TOE) and resource-based view (RBV) are some of these ideas that are commonly cited (Oyewobi *et al.*, 2021). All of these theories contend that a variety of factors can influence the adoption and use of innovative ideas such social media usage (AlSharji *et al.*, 2018).

This paper briefly discusses the various ideas and how they impact the research. Some studies have looked at the TAM as one of the most often utilized models of technology

acceptance in the use of social media (Venkatesh and Davis, 2000; Park, 2009). There are behavioral hurdles that users experience in implementing new technologies from the perspective of information technology, according to Lee *et al.* (2003) who employed the theory of TAM to explore this. Due to this, customers' willingness to accept emerging innovations is affected by a variety of things, such as how useful they think it will be, how easy they think it will be to use and their own views about it. Notwithstanding the model's effectiveness, researchers in the information system considered it lacking because it did not discuss external environmental problems with respect to implementing new technologies (Hossain and Silva, 2009; Lee *et al.*, 2003) and was only able to elucidate the general acceptability of technology (Lu *et al.*, 2005).

For example, Venkatesh *et al.* (2003) used the IDT model developed by Davis (1989) to characterize the technical components of social media. Many external variables influenced the use of information technology according to the diffusion of innovation theory, which states that this is a key indicator of a company's performance (Rogers, 2003). People who advocated for the "diffusion of innovation theory" claim that no matter how new or relevant something is, an organization will only consider it innovative if it offers a benefit to the organization in terms of ease-of-use, economy, social status or satisfaction (Zaltman *et al.*, 1973; Rogers, 1995). However, Rogers (1995) emphasized the importance of the five fundamental criteria of innovation adoption and sustainability: relative advantage, compatibility, complexity, trialability and observability. Parveen (2014), on the other hand, stated that this theory fails to take into account the social context of the implementation of technology in organizations, making it unsuitable for addressing social context issues. Diffusion of innovation theory, according to Du Plooy (1998), could not have captured the organizational and environmental context necessary for the successful deployment of information technology. If the TOE model is to be considered a comprehensive theory of diffusion, then environmental and organizational issues must be included.

As a means of gaining an overall picture of how social media affects performance, several research studies have merged three dimensions, for instance the TOE (Parveen *et al.*, 2016). Failure to address external elements and the organizational environment in the diffusion of innovation theory is seen as a possible drawback in the successful application of information technology. In 1990, Tornatzky and Fleischer established the TOE model to supplement the TAM and IDT models, respectively. Compared to Du Plooy's (1998) and Parveen's (2014) IDT model, the TOE model relies on three primary features of the organization's unique technological, organizational and environmental qualities to make it more effective at implementing innovation. Adopting, promoting and implementing new ideas through technology is said to be influenced by these aspects (Parveen, 2014). In spite of its capacity to accurately categorize adoption variables within their respective settings, critics of the TOE model claim that it lacks the integrative approach required to explain the elements that have an impact on IT decision-making within organizations (Bose and Luo, 2011). Using TOE theory, academics have been able to expand the breadth of IT use in the workplace (Jokonya *et al.*, 2012).

While the theories described previously focused on the adoption and retention of technology, the RBV theory has been proposed by researchers to explain how emergent technologies like social media can affect the performance of organizations (Barney, 2001; Peteraf, 1993). Several theoretical perspectives on social media have been established from research (Tajvidi and Karami, 2017), but some of these theories either focus on individual or organizational application of social media (Schaupp and Belanger, 2014). They have not been able to explain the link between new innovations (social media) and organizational effectiveness.

To date, the RBV theory has been employed to establish a link between social media and the importance of these platforms to businesses. Essentially, this is because the theory stated

that a company's unique, uncommon and valuable assets were a key source of competitive advantage and high-level performance (Barney, 2001; Peteraf, 1993). According to Li and Ling (2012), an organization's long-term competitiveness may be based exclusively on its ability to use social media efficiently to leverage and maintain distinctive organizational resources rather than focusing on establishing the organization in the right industry niche. The business's capacity to exploit its IT resources and networking skills to maximize efficiency by decreasing marketing expenses, building customer loyalty and improving brand recognition and competitive advantage is facilitated by their internal capability (Molla and Heeks, 2007; Trainor *et al.*, 2014). Table 1 summarizes some of the previous studies that used various models to assess the impact of social media usage on business performance.

Conceptual model and hypotheses

This section's aim is to better comprehend the concepts employed in the study in order to show how social media might affect organizational performance in respect to the current debate in construction management. Thus, a conceptual design with the requisite information on issues such as the organization's business focus, social media use, organizational learning capabilities and performance is proposed. According to the conceptual framework presented here, the study's consistency on how the topic under examination is formed helps put the findings into context and suggests interconnectedness among the various constructs. Figure 1 shows the conceptual framework which includes the constructs depicted in the framework and their interconnections.

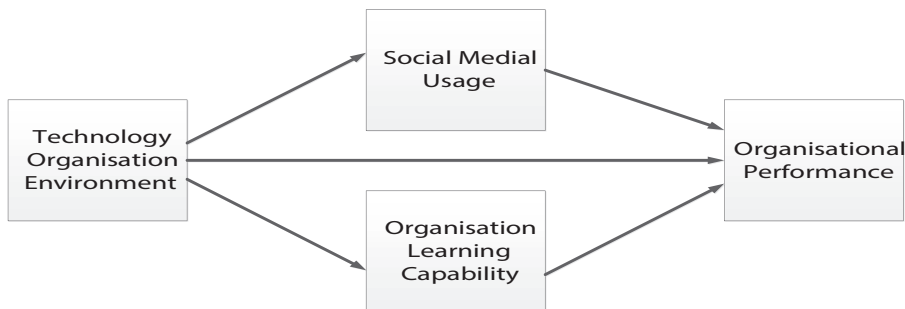
Relationships between technology, organization and environment

A wide range of theories were employed in this study to show how the concepts offered in the framework are connected and related to one another. In order to establish the impact of social media usage on the performance of SMEs, for example, the congruence of the TOE model and the Diffusion of Innovation (DOI) is employed. The TOE model does a better job of depicting how SMEs operate in their environment than the DOI model can. Rogers (2003) stated that in order for a company to successfully integrate new technology, five key traits must be present. Organizations will only implement new technology if it's beneficial for them, compatible with their current systems of operation, simple to use and has a clear advantage that can be easily demonstrated before it can be used (Rogers, 1995). As a result, organizations with greater positive top management support for new innovative technology are more likely to adopt social media (Abed, 2020). However, there were studies that disagreed on the influence of these attributes on technology adoption and subsequent performance (Teo and Pok, 2003; Valenzuela *et al.*, 2009). The internal environment of a business can have an effect on whether or not new technology is adopted when used in this context (Ahmad *et al.*, 2019). In the end, this study revealed that the organization portrayed by top management is crucial in the adoption and implementation of new technologies by fostering an environment that encourages the application of new thinking (Ahmad *et al.*, 2015, 2019). Organizations are under increasing pressure to stay ahead in competition in their industries as environmental challenges define the surroundings in which they operate. TOE and RBV theories combine together to show that organization performance can only be influenced when the organizational structure and environmental contingent elements are in harmony (Oyewobi, 2014). Previous researcher (such as Hartmann, 2006) asserted that the focus of these theories can also outline the opportunities for efficient and appropriate organizational performance through the implementation of innovative ideas like social media, which is capable of changing the business strategies of organizations in response to market threats. However, the author suggested in the paper that the corporate environment can either have a direct impact on performance or be a mediator through the use of social media and organizational learning

Table 1.
Previous studies on social media adoption and SMEs business performance

Author	Year	Country	Title	Model	Analytical method	Findings
Zhou, Wu and Lou	2007	China	Internationalization and the performance of born-global SMEs: the mediating role of social networks	Grounded	SEM-AMOS	Positive relationship
Amin <i>et al</i>	2015	Malaysia	Factors influencing the use of social media by SMEs and its performance outcomes	Diffusion of innovation (DOI)	SEM-PLS	Positive relationship
Parveen, Jaafar and Ainin Bakri	2016	Malaysia	Social media's impact on organizational performance and entrepreneurial orientation in organizations	Grounded	SEM-PLS	Positive relationship
Ahmad, Ahmad and Abu-Bakar	2017	Gulf Cooperation Council countries	The impact of social media adoption on competitive advantage in the small and medium enterprises	Integrated model	SEM-AMOS	No effect
	2018	UAE	Reflections of entrepreneurs of small and medium-sized enterprises concerning the adoption of social media and its impact on performance outcomes: evidence from the UAE	Word of mouth, viral marketing and social presence theory	SEM-PLS	Positive relationship
AlSharji, Ahmad and Abu-Bakar	2018	UAE	Understanding social media adoption in SMEs: Empirical evidence from the United Arab Emirates	TOE	SEM-PLS	
Eid, Abdelmoety, and Agag	2019	UK	Antecedents and consequences of social media marketing use: An empirical study of the UK exporting B2B SMEs	TAM	SEM-AMOS	Positive influence
Abed	2020	Saudi Arabia	Social commerce adoption using TOE framework: An empirical investigation of Saudi Arabian SMEs	TOE	SEM-AMOS	Positive relationship
Abbasi <i>et al</i>	2022	Malaysia	Determinants of SME's social media marketing adoption: Competitive industry as a moderator	TOE	ANN and PLS	Positive relationship

Source(s): Adapted from [Ahmad *et al.* \(2019\)](#)



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Figure 1.
Conceptual framework

capacity in that interaction. As a result of the study, the following hypotheses were postulated:

- H1. There is a positive relationship between technology and social media adoption.
- H2. There is a positive relationship between environment and social media adoption.
- H3. There is a positive relationship between organization and social media adoption.
- H4. There is a positive relationship between technology and organizational learning capability.
- H5. There is a positive relationship between environment and organizational learning capability.
- H6. There is a positive relationship between organization and organizational learning capability.

Social medial and organizational performance

The use of social media in businesses has expanded rapidly, according to [Parveen et al. \(2015, 2016\)](#). It's important to note, however, that the impact of social media use on organizational performance has received relatively little attention. Public social media accounts have lately been created and established by companies across industries to enhance ties in social networks, stimulate interest in organizations and build trust with the online public ([Parveen et al., 2015](#)). According to previous research, Internet use improves firms in a variety of ways, including lowering costs, generating income, fostering innovation and improving management performance ([Teo and Choo, 2001](#); [Anderson, 2001](#)). As a result of their study, [Ferrer et al. \(2013\)](#) found a link between social investment and an organization's ability to do well in the marketplace. Additionally, according to [Rodriguez et al. \(2012\)](#), the customer-oriented process, which in turn affects organization's success, can be improved by the use of social media within an organization. This suggests that social media has a beneficial effect on business performance. According to the findings of the investigation:

- H7. There is a positive relationship between social media and organizational performance.

Organizational learning capability

To gauge an organization's capacity for learning, a number of different metrics or models have been employed. Organizational learning capability has been evaluated by [Chiva and Alegre \(2009\)](#), for example, and was found to be significantly positive to sound business and/

or market performance when measured across five components: experimentation, risk-taking, interaction with external environment, dialog and participatory decision-making. The authors such as [Zahra and Covin \(1995\)](#) argued that proactive organizations typically attempt to generate a competitive edge by being the first to market a product or service. This allows the organization to build good reputation and develop consumer loyalty ahead of rivals. An innovative company can employ new products and technology to adapt to the environment in order to increase economic performance, which in turn becomes the driving force behind business growth ([Covin et al., 2006](#)). Organizations in the construction industry have been challenged to become better at effective innovation so that they may effectively serve the needs of their clients by encouraging open communication among their personnel. This strategy frequently leads to an increase in the competitiveness of businesses. Although risk-taking and performance are not directly linked, [Wiklund and Shepherd \(2005\)](#) stated that evidence in the literature suggests that risky strategic decisions may lead to performance differentials whereas established business techniques may lead to high mean performance. An important finding of this study is that it establishes a link between an organization's business orientation and its ability to execute; therefore, this study postulates as follows:

- H8.* There is a positive relationship between organizational learning capability and organizational performance.
- H9.* There is a positive relationship between organizational learning capability and social media adoption.

Research methods

To collect data and test hypotheses, this study used a quantitative research method and the process is showing in [Figure 2](#). This is due to the belief that respondents' personal experiences are critical to the post-positivist worldview that underpins this research. The primary purpose of this study, which employed a structured questionnaire survey method, was to collect cross-sectional data from participants in a quantitative, exploratory and causal manner. However, from an epistemological position, there was no link between this study and the researchers because it corresponds to the ontological stance of neutrality. According to [Gill and Johnson \(2010\)](#), these assumptions resulted in a value-free inquiry. The use of constructs enabled the design of a data collection instrument based on the findings of [Gomes and Wojahn \(2017\)](#). Exogenous variables evaluated in this study were technology,

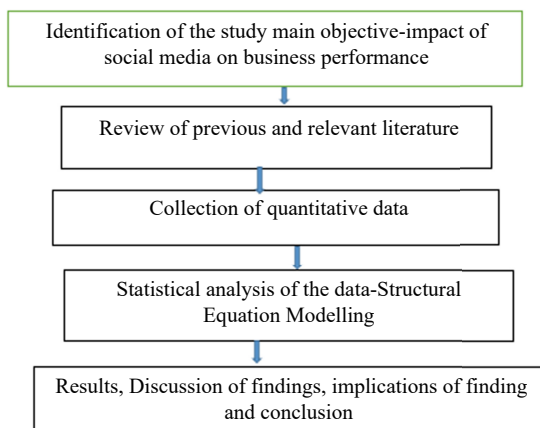


Figure 2.
The research process

environment and organization, whereas endogenous variables included business social media adoption, learning capacity and company performance.

The measurement scales used in this study were all adapted from earlier studies (Parveen *et al.*, 2016; Gomes and Wojahn, 2017; Ahmad *et al.*, 2019). Prajogo and Sohal (2004) stated that establishing measuring scales is a tough undertaking and that it should be feasible to assess the reliability and validity of the measures using pre-tested constructs from current empirical investigations. Despite the fact that the measurement scales had been modified, a pre-survey questions design phase was required before the primary survey was conducted to check the validity of the items among colleagues (Ahmad *et al.*, 2019). Before it was administered, colleagues agreed that the questionnaire was straightforward enough to complete and understand. Table 2 shows the observed latent variables and indicators from the study.

This study used a sectioned questionnaire with closed-ended questions as a data collection strategy, similar to Bowen *et al.* (2010). The survey was divided into three sections. Section A focused on the respondents' demographics, such as job title, years of experience and other facts, as well as the organization's overall characteristics. Section B explored the impact of technology, environment and organization on social media adoption, whereas Section C investigated the relationship between learning capability and social media usage on organizational performance. To acquire the data used in this study, a Likert-type scale was employed, with responses ranging from 1 (strongly disagree) to 5 (strongly agree) on a number of issues. Variables from prior studies were used in this questionnaire survey (Parveen *et al.*, 2015, 2016; Ahmad *et al.*, 2015, 2016, 2019).

Latent variable	Indicators	Source of measurement items
Environment	Dialog Participative decision-making Bandwagon pressure Competitive pressure Competitive Intensity	Parveen (2014), Ahmad <i>et al.</i> (2019)
Organization	Top management support	Parveen (2014), Ahmad <i>et al.</i> (2019), AlSharji <i>et al.</i> (2018)
Performance	Enhanced information accessibility Impact on cost reduction Improved customer relations and service	Molla and Heeks (2007), Parveen (2014), Parveen <i>et al.</i> (2016)
Social media	Social media for customer relations and service Social media for information accessibility Social media for marketing	Parveen (2014), Parveen <i>et al.</i> (2016)
Technology	Observability Complexity Triability Relative advantage Compatibility	Parveen (2014), Ahmad <i>et al.</i> (2019)
Organizational learning Capability	Risk-taking Dialog Participative decision-making Experimentation Interaction with the external environment	Parveen (2014)

Table 2.
Constructs used in
the study

ECAM

The construction materials merchants in Dei-Dei Regional Building Materials Market, Abuja, Nigeria were chosen on purpose for this study's sample. The market is one of Nigeria's major building materials in North Central area. The majority of participants were owners-managers and Chief Executive Officers (CEOs), who were thought to be the most informed about their company's environment and performance (Ahmad *et al.*, 2019). In terms of social media presence, the majority of the organizations surveyed had been active for at least five years. This was reflected in their complimentary business cards as well as the signage indicating their corporate locations. A total of 113 top management of building materials vendors in the study area were directly surveyed; 79 valid responses (as shown in Table 3) were

Characteristics of respondents	Participant	Frequency	Percentage
Position within the organization	Owner	22	27.85
	Executive	13	16.46
	Manager	20	25.32
	Senior manager	14	17.72
	Top manager/Director	10	12.66
	<i>Total</i>	<i>79</i>	<i>100.00</i>
Gender	Male	58	73.42
	Female	21	26.58
	<i>Total</i>	<i>79</i>	<i>100.00</i>
Academic qualification	Secondary school or lower	22	27.85
	PhD	4	5.06
	MSc/MTech	17	21.52
	HND/BSc/BTech	36	45.57
	<i>Total</i>	<i>79</i>	<i>100.00</i>
Working experience	Below 5 years	13	16.46
	5–10 years	21	26.58
	10–15 years	27	34.18
	15 years above	18	22.78
	<i>Total</i>	<i>79</i>	<i>100.00</i>
Age of respondent	Less than 30 years	13	16.46
	31–40 years	30	37.97
	41–50 years	25	31.65
	More than 50 years	11	13.92
	<i>Total</i>	<i>79</i>	<i>100.00</i>
Number of years since adoption	Less than a year	5	6.33
	1–2 years	8	10.13
	3–4 years	17	21.52
	More than 5 years	49	62.03
	<i>Total</i>	<i>79</i>	<i>100.00</i>
Number of employees in your organization	Fewer than 10	42	53.16
	11 to 30	24	30.38
	31 and above	13	16.46
	<i>Total</i>	<i>79</i>	<i>100.00</i>
Type of business	Sanitary wares	14	17.72
	Tiles and granite slabs	12	15.19
	Wooden laminate	13	16.46
	Security doors	7	8.86
	Paints	10	12.66
	Roof materials	12	15.19
	Aluminium windows frame and car port	2	2.53
	Metal works (doors and Frames)	7	8.86
	Other businesses	2	2.53
	<i>Total</i>	<i>79</i>	<i>100.00</i>

Table 3.
Demographic characteristics of the respondents

subsequently achieved and were deemed appropriate for an exploratory study based on the approach adopted in the statistical analysis (PLS-SEM).

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Results

With an effective response rate of 71.8%, out of 113 questionnaires, 79 valid responses were received. For a construction industry study, a response rate of 30% is considered acceptable, according to [Idrus and Newman \(2002\)](#). Detailed demographic information about the respondents can be found in [Table 3](#). Almost all of the respondents were CEOs of their respective companies, and about 27% of the respondents were female. Women's participation in the construction industry is at an all-time low in Africa, and this is especially true in Nigeria ([Oyewobi et al., 2019](#)). In total, 72% of respondents had post-secondary education, while 84% of respondents had more than five years' experience in the workforce.

Approximately 70% of those who answered in [Table 3](#) were between the ages of 30 and 50, which [Ahmad et al. \(2019\)](#) say is typical of SMEs, which tend to be young and up to date on the latest developments in the construction industry's business environment. About 60% of respondents have been using social media platforms for more than five years which is in tandem with the findings of [Ahmad et al. \(2019\)](#). When it came to total employees, 47% of businesses had more than 11 workers.

Test and validation of conceptual model

This study's purpose was to find out whether a company's social media and learning capacity have to do with its business potential in relation to the environment, technology and the impact of performance approach. There has been no well-established notion that could largely serve as the theoretical basis for the latent constructs at the time because these interactions had only been explored infrequently in research, especially in the field of construction management. That is why it is important to find out how well an independent variable (such as technology) can predict a dependent variable (such as business performance) so that Partial least squares (PLS) could be used as a useful analytical tool in the study.

PLS-SEM with SmartPLS software version 2.0 M3 was used to evaluate the postulated causal paths mentioned showed in [Figure 2 \(Ringle et al., 2005\)](#). Due to the fact that this is an exploratory study, the most appropriate analytic tool is PLS-SEM for investigating potential paths. PLS-SEM can be used for exploratory research for a variety of reasons. When it comes to data delivery, PLS has fewer strict assumptions. Multivariate normal distribution of data is not required for PLS. Because PLS is based on regression, it usually only incorporates the OLS regression's data distribution assumptions ([Peng and Lai, 2012](#)). PLS has been used to test theory and assess path models in studies on construction management (such as [Oyewobi, 2014; Jimoh et al., 2019](#)).

Measurement model

The following factors for evaluating reflective structures were examined to determine that the measurement model met the acceptable threshold in order to keep it. The requirements include internal consistency (reliability of the construct), indicator reliability, convergent validity (extract of the average outer weights variance) and discriminant validity. As indicated in [Table 2](#), item loadings, indicator reliability, composite reliability, average variance and measurement model reliability *p*-values can be found. It was determined through this assessment, however, that the minimal parameters required to identify a reflective measuring model were met. Indicator convergent validity was suggested by factor loadings more than or equal to 0.70 and significant at the 0.001 level. [Hair et al. \(2014\)](#) stated that measurements of outside loading with outer standardized loadings less than 0.40 should

be removed from the measurement model. To refine the model, only indicators with outer loadings greater than the appropriate threshold were retained and those with latent variables between 0.40 and 0.70 were excluded. As a result, three technologies, namely environment, social media and efficiency, reflective indicators were retained, while five learning capacity reflective indicators were retained. However, only one metric was utilized to gauge the effectiveness of the organization.

Convergent validity is implied at the construct level by Average Variance Extracted (AVE) values greater than or equal to 0.50 (Chin, 2010). The constructs' composite reliability values are all higher than 0.70, indicating reliability, though this is permissible for exploratory testing to have a composite reliability of 0.6 or above (Hair et al., 2017). As may be seen in Figure 3, the study's calculation models and construct factor loadings are both shown. Finally, the discriminant validity of the model's latent variables was assessed (see Table 4) to make sure they were sufficiently distinct. A requirement of this test is that each latent variable's square root AVE be greater than the correlation values for the other latent variables. It is indeed correct to conclude that all of the latent variables in Table 5 pass the Fornell-Larcker discriminant validity test (Fornell and Larcker, 1981). Table 2 provides the results of the measurement model evaluation, which show that the measurement model is appropriate.

Structural model

Tables 6 and 7 summarize the findings from the structural model to assess model capacity, consider the strength and consistency of the structural model linkages and calculate the R^2 using PLS-SEM (Hair et al., 2014). The 5,000-iteration bootstrapping method was used to determine the relevance of the structural paths. Figure 3 depicts the latent and direct pathways. The hypotheses tested revealed that the path values were significant at 90%, 95% and 99% confidence levels, according to the results. A structural model's predictive power, according to Chin (2010), is measured by the endogenous construct's R^2 values. If the endogenous latent variables in the inner route model have R^2 values of 0.67, 0.33 or 0.19, respectively, it can be considered substantial, moderate or weak (Chin, 1998). Figure 4 shows the R^2 value for social media as 0.561, organizational performance was 0.549 which was considered moderate whereas the R^2 values of learning capability was 0.687, which was considered substantial. The R -squared is an approximation of the model's capacity to forecast the variability of an endogenous variable (Sarstedt et al., 2014).

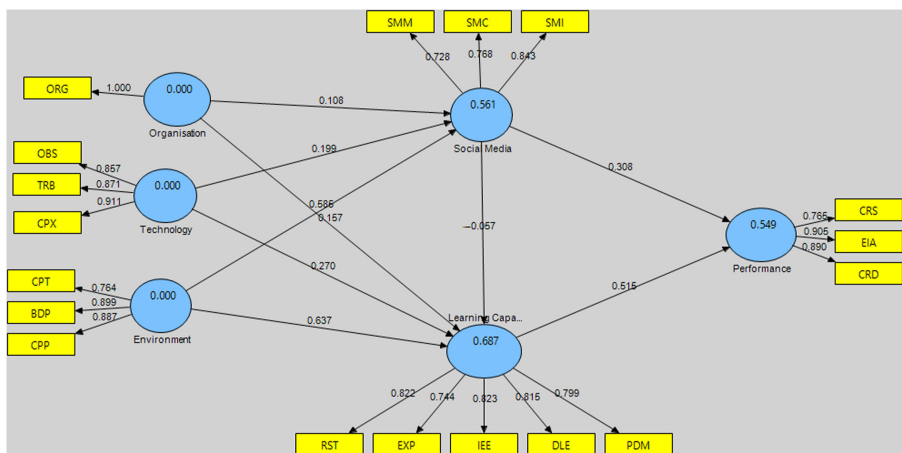


Figure 3. Measurement model

Latent variable	Indicators	Loadings	Indicators reliability	T-stat	Composite reliability	AVE	Cronbach's alpha	Social media's influence on SMEs' performance
Environment	Bandwagon pressure	0.899	0.808	25.474	0.888	0.726	0.809	
	Competitive pressure	0.888	0.788	26.940				
	Competitive intensity	0.764	0.583	7.373				
Learning capability	Dialog	0.815	0.664	19.406	0.900	0.642	0.861	
	Experimentation	0.744	0.553	10.536				
	Interaction with the external environment	0.823	0.677	21.381				
	Participative decision-making	0.799	0.639	12.286				
Organization	Risk-taking	0.822	0.676	13.801	1.000	1.000	1.000	
	Top management support	1.000	1.000	0.000				
Performance	Impact on cost reduction	0.890	0.792	24.483	0.891	0.732	0.817	
	Improved customer relations and service	0.765	0.585	8.406				
	Enhanced information accessibility	0.905	0.819	33.319				
Social media	SM for customer relations and service	0.768	0.590	8.363	0.824	0.610	0.680	
	SM for information accessibility	0.843	0.711	15.060				
Technology	SM for marketing	0.728	0.530	5.986	0.911	0.774	0.854	
	Complexity	0.911	0.831	35.102				
	Observability	0.857	0.734	18.867				
	Trialability	0.871	0.758	30.846				

Table 4.
Results summary for reflective outer models

	Environment	Learning capability	Organization	Performance	Social media	Technology
Environment	0.852					
Learning capability	0.780	0.801				
Organization	0.218	0.344	1.000			
Performance	0.550	0.698	0.389	0.856		
Social media	0.719	0.594	0.283	0.614	0.781	
Technology	0.554	0.629	0.239	0.561	0.549	0.880

Note(s): Diagonals represent the square root of the average variance extracted (AVE) while the other entries represent the correlations

Table 5.
Fornell-Larcker criterion analysis for checking discriminant validity

Hypotheses were tested using *t*-values along each path. The following were the *t*-values that were used to make a determination: Since $p < 0.10$ indicated that the path coefficient was significant, it can be deduced that as *t* increases to 1.96, the path coefficient becomes significant (Oyewobi, 2014). According to Table 7, all of the hypotheses tested were appropriate. With regard to learning capacity and social media, Table 7 shows that only the *t*-values above 1.65 were non-significant. This shows that all metrics used to quantify the latent variables had a 99.9% confidence level, demonstrating that the models' latent variables accounted for all of the observed variability completely (Jimoh *et al.*, 2019). This is an indication that all the seven hypotheses were supported (H1, H2, H3, H4, H5, H7 and H8).

An independent variable's coefficient is compared to the original R^2 values (the influence on learning capabilities) to further examine the conceptual model. The change in R^2 values can be used to check whether the variable has a substantial impact on original constructs. Two exogenous constructs (directly related variables) were picked to demonstrate their

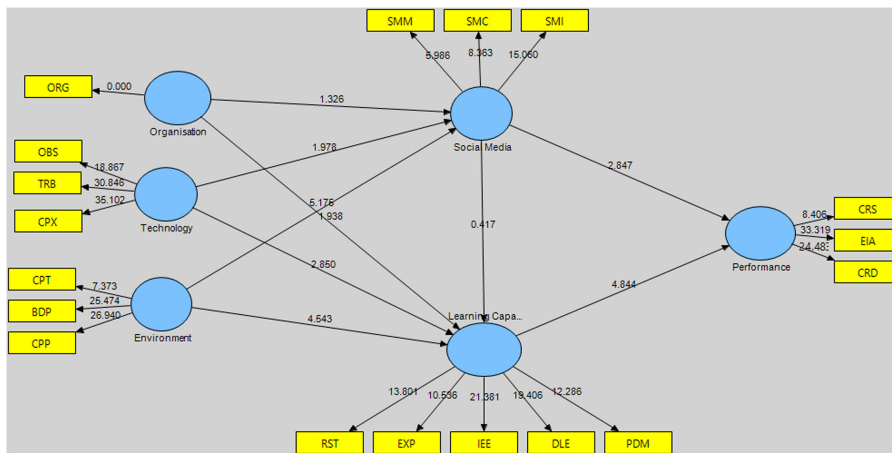
Table 6.
R Square, communality and redundancy

	R square	Communality	Redundancy	Q ²	f ²
Environment		0.7263			
Learning capability	0.6869	0.6419	0.369	0.44	0.370
Organization		1.0000			
Performance	0.5491	0.7320	0.3297	0.397	
Social media	0.5609	0.6103	0.2887	0.318	0.102
Technology		0.7743			
Average	0.5990	0.7475	0.3291		

Table 7.
Path coefficient and hypotheses testing

Path relationship	Hypotheses	Path coefficient	T statistics	p-values
Technology → Social media	H1: There is a positive relationship between technology and social media adoption	0.199	1.978	0.024
Environment → Social media	H2: There is a positive relationship between environment and social media adoption	0.586	5.175	0.000
Organization → Social media	H3: There is a positive relationship between organization and social media adoption	0.108	1.326	0.093
Technology → Learning capability	H4: There is a positive relationship between technology and organizational learning capability	0.270	2.850	0.000
Environment → Learning capability	H5: There is a positive relationship between environment and organizational learning capability	0.637	4.543	0.000
Organization → Learning capability	H6: There is a positive relationship between organization and organizational learning capability	0.157	1.938	0.027
Social media → Performance	H7: There is a positive relationship between social media and organizational performance	0.308	2.847	0.000
Learning capability → Performance	H8: There is a positive relationship between organizational learning capability and organizational performance	0.515	4.844	0.000
Social Media → Learning capability	H9: There is a positive relationship between organizational learning capability and social medial adoption	-0.067	0.417	

Note(s): *** $p < 0.01$ (>2.58), ** $p < 0.05$ (>1.96), $p < 0.10$ (>1.645)



Social media's influence on SMEs' performance

Figure 4. Structural model

relative impact on performance as a result of the understanding that there are multiple exogenous constructs in the organizational process (along with technology, organization, social media and learning capability) using the equation:

$$f^2 = \frac{R^2_{\text{included}} - R^2_{\text{excluded}}}{1 - R^2_{\text{included}}}$$

According to Cohen (1988), f^2 values should range from 0.02, 0.15 and 0.35 in order to accurately assess the amount of the exogenous latent variable's impact. Social media and learning capacity had impact sizes (f^2) of 0.102 and 0.370, respectively, which are considered medium and high effect sizes (Cohen, 1988). Stone-Geisser's Q^2 values for endogenous constructs were 0.44, 0.397 and 0.318 correspondingly, indicating an adequate ability to predict learning capacities, performance and social media use. This study examined the overall consistency of the model by measuring the goodness of fit (GoF) in accordance with Tenenhaus *et al.* (2005). In contrast, Henseler and Sarstedt (2013) questioned the usefulness of the GoF as a GoF criterion for PLS-SEM. GoF is challenging to employ due to the model's lack of formative indicators. The study investigated the model's overall consistency using GoF and it is calculated as follows:

$$= \sqrt{0.7453 \times 0.6039} = 0.6709$$

Rule of thumb says that a GoF value of 0.1 is small, a value of 0.25 is medium and a value of 0.36 is high (strong GoF). This study has a strong GoF with a value of 0.6709.

$$\text{GoF} = \sqrt{\text{communality} \times R^2}$$

Total effect and mediation analysis

An in-depth analysis of the model showed that learning capacity has a higher direct impact on the business performance of organizations than social media. As a result of this further inquiry, it was discovered that learning capacity mediated the association between organizational business success and social media.

For: social media → learning capability → performance;

Total effect: $0.306 + 0.591 \times 0.522 = 0.6145$ (direct Plus indirect)

It appears that learning capacity serves as a mediating factor between social media and organizational performance when determining the overall impact of social media on company performance. As proposed by [Sarstedt et al. \(2014\)](#), the study evaluated the total impacts before determining the learning capacity mediating the effects on performance. Social media had a direct influence on organizational performance of 0.617 and was statistically significant at 99% trust level. When the entire model is estimated, the bootstrapping results resulted in 0.308, which was also significant at 95% confidence level. It was necessary to bring out how much of the model's variation was accounted for (VAF).

$$\text{VAF} = \frac{\text{indirect effect}}{\text{Direct effect}} = \frac{0.3085}{0.5020} = 0.6145$$

According to [Hair et al. \(2017\)](#), a VAF value greater than 80% indicates absolute mediation, a value between 20 and 80% indicates partial mediation and a value less than 20% indicates no mediation. The calculated VAF value was 0.5020. In the end, the findings showed that learning competence can moderate the link between social media and organizational business success to some level.

Discussion

This study focused on how social media and learning capacities affect the performance of construction small and medium firms. PLS-SEM was used to test a conceptual framework that emerged from the findings. The study found that using social media increased knowledge accessibility, reduced costs and improved customer relations and service for the organizations. The study concluded that this had a significant impact on performance. This result is consistent with [Parveen's et al. \(2016\)](#) findings. According to [Schmiederjans et al. \(2013\)](#), social media had a positive impact on organizational performance. Social media adoption has allowed companies to increase their client relationships and the quality of customer service while also cutting marketing and customer care expenditures as explained by [Parveen et al. \(2016\)](#). Getting information about customers and competitors has become much easier due to the availability of Internet. Technological qualities (observability, trialability and complexity) have a positive substantial impact on social media use, both individually and collectively. [Ahmad et al. \(2017, 2019\)](#) found that technological attributes (relative advantage) had no significant impact on social media adoption. This conclusion contradicts the finding. In a study of Malaysian small and medium-sized businesses, [Amin et al. \(2015\)](#) found a significant link between technological qualities (relative advantage) and the intention to use social media. [Tsai et al. \(2013\)](#) and [Ahmad et al. \(2019\)](#) discovered a substantial positive association between the desire to accept social media and complexity; the current investigation found the same. [Ahmad et al. \(2019\)](#) found that trialability and observability had no impact on social media adoption, which is the opposite of what was shown in this study. However, prior studies ([Chong, 2004](#); [Lin and Chen, 2012](#)) have discovered substantial links between trialability, observability and adoption intent.

Top management support was found to have a strong positive association with social media adoption when studied with a 90% confidence level. As [Ramdani et al. \(2013\)](#) and [Ahmad et al. \(2015\)](#) found, management support is critical for organizations looking to adopt new technology. Both [AlSharji et al. \(2018\)](#) as well as our findings reaffirm the importance of organizational and environmental factors in determining whether or not people use social media. When social media technologies are implemented in firms, a top-down strategy is

required, encouraging senior management to incorporate corporate development tools (Ahmad *et al.*, 2019; AlSharji *et al.*, 2018).

Study on the impact of business environments on social media adoption has found that bandwagon pressure, competitive strength and competitive pressure are all linked to the goal of social media adoption, both individually and collectively. There was a substantial negative correlation between competitive advantage and the inclination to accept social media, according to Ahmad *et al.* (2017, 2019). Lertwongsatien and Wongpinunwatana (2003), on the other hand, back up recent findings that showed a positive correlation between competitive strength and e-commerce organization. Small and medium-sized firms' use of social media is influenced by the market climate, with bandwagon pressure being the most significant impact. The level of competition within an industry has been proven to have a strong correlation with the use of social media. SMEs' ability to make a meaningful contribution to social media adoption is hampered by the level of rivalry in their market environment as argued by Lin (2014) and Wang and Cheung (2004).

As a consequence of examining the link between social media adoption and learning capacity, the findings revealed that social media adoption had a little negative influence on an organization's learning capacity ($= -0.067$, T -statistics = 0.417, 0.05) at 95% confidence level. In contrast to Parveen *et al.* (2016)'s findings, which found a positive correlation between social media use and entrepreneurial inclination, this conclusion contradicts the latter. There is no correlation between entrepreneurial orientation and perceived success in Internet marketing as observed by Elliot and Boshoff (2005).

In order to achieve an organization's objectives in terms of innovation and production process, technology is critical, according to De Mori *et al.* (2016). Knowledge and skills needed by a company to develop, apply, adapt, absorb and transfer technological innovations were mentioned (Salisu and Abu Bakar, 2020). According to the PLS-SEM results, technology has a significant positive impact on learning capacity. Baark *et al.* (2011) claimed which was supported by this study that technology innovation inside a company can improve learning capabilities and resource allocation. An organization's dynamic external environment is a major determinant of learning, which may explain why the two variables showed a substantial positive correlation ($= 0.27$, T -statistics = 2.85, $p < 0.05$). Learning capability is an essential tactical talent for business survival in the competitive construction business environment, according to Sok and O'Cass (2011) and Santos-Vijande *et al.* (2012). The study also revealed that there were positive and significant links between the learning capacity of the top management and the organization as a whole. A positive correlation was found between organizational business performance and learning capabilities. Both these findings showed that learning capability has a major positive impact on an organization's performance.

As a result of the findings of this study, it is believed that learning capability was a mediator between the use of social media and business performance (see also Hailekiros and Renyong, 2016; Wang *et al.*, 2019). The key potential of social media platforms, according to Baxter (2015) and Parveen *et al.* (2016), is their ability to give organizations with the support they require for the concept of organizational learning, which in turn leads to better results. This is in agreement with the position put forth in this study that organizational learning capability enhances performance, which is also in line with the study carried out by Alegre and Chiva (2008) and Goh *et al.* (2012).

Implications of the findings

For academics and practitioners, this study has various theoretical and practical implications. This study was a hypothetical study into the impact of social media use on construction firm performance. SME owners in the construction industry, in particular, can

profit from this study by learning that adopting social media for networking will strengthen and improve their business performance. This does not mean that having access to social media and the Internet is the same as making the most of it. To make the most of social media, businesses must improve their ability to learn and be technologically aware. However, the study concluded that senior management's preparedness to deploy technology in a competitive business environment laid the groundwork for firms to increase their learning skills and embrace the use of social media to improve company performance. The impact of construction companies' adoption of social media, particularly construction businesses, is unknown. Previous research has paid little attention to small and medium-sized firms (SMEs). A conceptual framework was developed and evaluated. As postulated and tested in this study, construction industry practitioners, particularly merchants, could use social media to their advantage to improve their businesses.

This study makes an important theoretical contribution to the literature on social networking in construction management based on small and medium-sized firms (SMEs) setting. This article studied the influence of social media use in construction businesses from four theoretical viewpoints, drawing on TAM, IDT, TOE and RBV. Although mainstream management researchers have paid close attention to social media adoption and implementation, the same attention has not been paid to construction management. This study conceptualized technology, organization, environment, social media use and learning capability in order to improve business performance. As this study revealed, learning capability was discovered to be an essential mediator in the link between social media use and company performance in construction-related SMEs.

Limitations of this study

This study is industry specific and should be replicated but with a different focus. The role of social media varies depending on the situation, industry and country. Future research should put the findings of this study to the test in other important businesses. However, empirical evidence suggested that social media use by construction firms, particularly construction businesses, has not received the attention it deserves. This study developed a conceptual framework, which was subsequently tested. Based on the findings of this study, construction organizations may benefit from more research into the impact of social media on their performance. Respondents to the study may have a better knowledge of how social media impacts their company. More companies from different sectors or industries may be more interesting. Examining firms with a well-defined business plan for using new technology, such as social media apps, may provide different results. Furthermore, depending on the level of construction organization, the impact of social media may vary. More research into the impact of social media on construction businesses could also be beneficial. Furthermore, a study into customer relationship management (CRM), marketing and the influence of social media use is required.

Conclusion

This study found that social media has a significant impact on the performance of organizations, notably in the construction industry, as well as identifying latent characteristics that could help them in the future. In this study, a conceptual framework was examined. The hypothesized pathways were evaluated using PLS-SEM. The results confirmed the hypotheses that had been put forth. The results of this study suggested that companies' performance was influenced by social media. Social media adoption was also influenced by the organization, technology and environmental factors. As a result, conventional management studies have given significant attention to the usage and application of social media but the study of construction management has not. As a result, the

impact of social media adoption by firms, particularly those dealing in building materials, is limited. Construction materials suppliers have received minimal attention in prior research on the use of social media by individuals or major organizations.

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Corresponding author

Olatunde Folaranmi Adedayo can be contacted at: arcadedayo@gmail.com