

The effect of social media on the enterprise learning, innovation and performance, and knowledge management, transformational leadership, and of manufacturing firms in Ghana

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Abstract

This paper evaluates how the performance of manufacturing organizations in Ghana, as well as their capacity for learning, knowledge management, innovation, and transformational leadership, are impacted by social media. In today's highly connected world, social media platforms have become indispensable for fostering dialogue and teamwork, and disseminating information. However, its precise effect on the manufacturing industry has not been well investigated. The management of SMEs was analyzed using a quantitative study design. In-depth information was gathered from experts in the field. Questionnaires were used to obtain cross-sectional data. The Smart PLS instrument was utilized to put the hypotheses to the test. TRL, ORL, KM, and INO were found to have a direct causal relationship. The results demonstrated that innovation served as a mediator between TRL, KM, and enterprise performance. Finally, SOM moderated the relationship between ENTP and INO, as well as KM and INO. The findings of this investigation add to the current body of knowledge by shedding light on the myriad ways in which social media has affected the manufacturing industry. The conclusions of this investigation have important practical consequences for manufacturing companies, guiding them as they make strategic decisions about adopting and utilizing social media platforms to boost enterprise learning, knowledge management, innovation, and performance.

Keywords: Ghana, social media, enterprise learning, knowledge management, transformational leadership, enterprise performance.

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1. INTRODUCTION

In a modern society that appreciates competition, firms are compelled to seek out innovative means of enhancing their performance. Multiple traits must already be ingrained in an enterprise to improve its success. Numerous studies have centered on significant aspects impacting business success (Limsangpetch et al., 2022; Nasir et al., 2022). By adapting to meet the needs of people, leaders, groups, and institutions, transformational leaders empower and encourage their followers to create remarkable results that further everyone's goals. In addition, Barr and Nathenson (2021) demonstrated that the values of goal and ecological goodness, particularly the transformational leadership approach, are applied in the workplace to enhance creativity. Organizational learning and knowledge management are needed in the current challenging world for innovative SMEs to achieve enterprise performance (Liao and Tsai, 2019). The work environment, on-the-job training, and skill development are crucial elements for boosting corporate productivity. According to Kortsch et al. (2022), organizational learning will occur when supervisors recognize employee contributions. Kurdi et al. (2020) contend that there is a strong relationship between an employee's ability to accomplish organizational goals and their amount

of influential assistance. Similarly, knowledge management activities are largely dependent on how individuals inside a business exchange information with one another (Tandon, 2021). Due to their tremendous influence on organizational innovation, leadership and enterprise learning have gained growing attention in the existing literature (Chaithanapat et al., 2022; Tandon, 2021). Nasir et al. (2022) discovered that leadership supports innovation by mediating all four sub-processes of enterprise learning: organizational memory, information acquisition, knowledge interpretation, and knowledge dissemination.

The modernization of business and the lives of customers has pushed enterprises to begin employing social media as a means of communication. Zhang and Zhu (2022) demonstrated that enterprises are shifting away from the use of TV, radio, and printed newspapers. The mere purpose of social media for text, video, and calling has changed to enterprise learning (Hussain et al., 2020), knowledge management (Gómez-Marín et al., 2022), institutional innovation (Donate & Sánchez de Pablo, 2015; Zhang & Zhu, 2022), and enterprise performance (Viglerová et al., 2022). Enterprises in the manufacturing section of Ghana are making proper use of social applications such as WhatsApp, Facebook, Instagram, and others in their daily operations. Fig. 1 demonstrates the trend of use and leading application in Ghana. The use of social media by enterprises is less costly compared to other marketing tools to research consumers. These social media platforms, like WhatsApp, are the leading applications in Ghana, as they are free to use for business accounts or personal accounts.

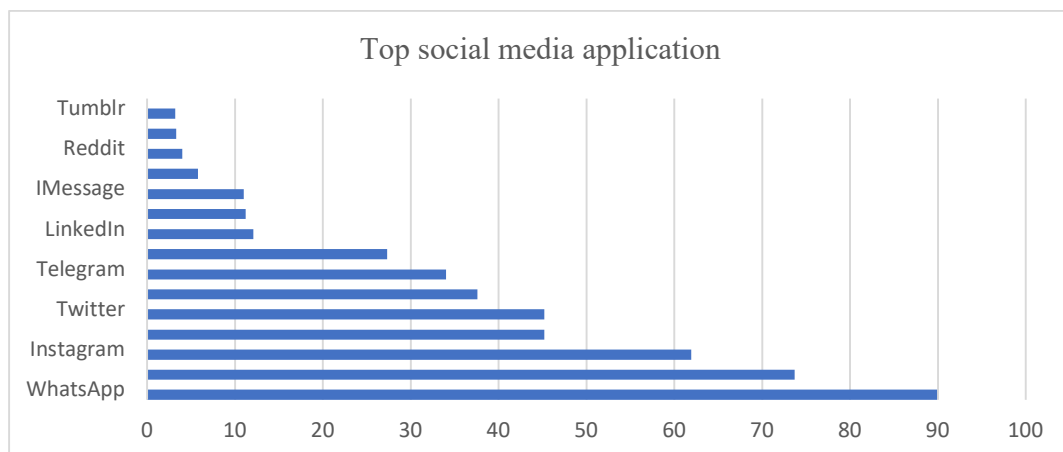


Fig. 1 – Top social media apps. Source: Ghana social media use (Statista, 2023)

Picazo-Vela et al. (2016) made the case that social media technology practices have impacted knowledge management and significantly improved the development and sharing of information in small and medium-sized organizations (SMEs). Similar to how it promotes individual learning, social media is crucial for organizational learning (Menolli et al., 2020). According to research, if companies can successfully manage social media and figure out how to best use it, this might be a useful addition to knowledge acquisition, exploration, and exploitation, which would improve innovation performance (Benitez et al., 2018). Some scholars (Benitez et al., 2018; Muninger et al., 2019) call for more research to examine how social media affects innovation from a capability perspective. The current study used social media as a moderator to enhance its effects on innovation, knowledge management, and organizational learning by identifying the particular and common benefits associated with it.

In response, this study closes this gap by investigating the link between transformational leadership and the achievement of enterprise performance (ENTP), with innovation serving as a mediating factor. Similarly, knowledge management and organizational learning affiliation with enterprise performance were investigated through innovation. Again, social media was employed as a moderating construct for the variables. Small and medium-sized manufacturing businesses are concentrated in emerging economies for a variety of reasons. Manufacturing is closely tied to innovation and knowledge management while also being a major contributor to GDP and a major employer in the country.

The study's conclusions will help organizations better understand how to utilize social media platforms to improve their knowledge management and learning processes, which will encourage a more creative and adaptable culture. Additionally, this study will offer insightful information on how to plan and carry out social media campaigns that successfully aid enterprise learning and knowledge management pursuits, eventually enhancing innovative outcomes. We developed a framework (Fig. 2) and hypothesized the intervening influence of innovation, organizational learning, and knowledge management on the performance of SMEs in Ghana. The study employed the Smart PLS approach to analyze the data of managers and management gathered for the period 12/2022–02/2023.

The remainder of the paper is structured as follows: section two covers the review of literatures and hypothesis with a conceptual framework. Section three highlights the methodologies employed. The analysis and results are presented in section four. Finally, the research ends with a conclusion, limitations, and future research directions.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Enterprise performance measures an organization's effectiveness in achieving objectives, encompassing financial, operational, market share, customer satisfaction, employee productivity, and growth. It evaluates an organization's ability to generate value, remain competitive, and achieve sustainable success. Six Hungarian wineries were studied via semi-structured interviews by Obermayer et al. (2022). They demonstrated that social media, such as Facebook, had a significant affiliation with enterprise efficiency and recommended that social media be exhausted as a new channel to reach out to new customers. Sampling data from Germany (310) and Russia (348), Kortsch et al. (2022) employed the structural equation approach to explore the connection between learning from leaders and its mediating role as a leader in national culture and enterprise learning culture. The findings from the investigation demonstrated an inverse affiliation with the variables.

2.1 Transformational leadership nexus

Transformational leadership is characterized by using creativity, empathy for clients, intellectual stimulation, encouragement, and power as a leadership approach to facilitate personnel and professional development in others. Cavazotte et al. (2013) see this type of leader as the type that challenges its followers (employees) to become creative when solving problems via mentorship and training. An empirical experiment on 89 municipalities in Pakistan was studied by Khan and Khan (2019). The article employed the diffusion innovation approach to analyze the data of 375 employees and their superiors. The findings revealed that transformational leadership had a favorable and substantive affiliation with enterprise learning and knowledge sharing. Again, social media had a strong nexus with enterprise learning and innovation but had an immaterial

moderating effect on the variables. Using the street level bureaucrats' (SLB) model, Zhang et al., (2022) investigated the impact of professionalization, transformational leadership, and enterprise learning on social assistance. The empirical results demonstrated that 595 Chinese professional social workers had a connection through an internal professional learning mechanism supported by the SLB model. In Brazil, Cavazotte et al. (2020) explored the service profit chain in call center teams and the role played by transformational leadership. A causal model analysis of 3938 employees was sampled for research purposes. The results demonstrated that transformational leadership had a favorable influence on team satisfaction and customer satisfaction. Within the Ghanaian setting, the innovative behaviors of transformational leadership were studied using 358 respondents in the banking sector (Amankwaa et al., 2019). The PS model analysis corroborated that innovative work behaviors is directly affiliated with transformational leadership. Recent research on transformational leadership and enterprise performance was carried out by (Hilton et al., 2023). The findings produced four-dimensional areas of transformational leadership (ideal stimulus, individual sensitivity, inspirational motivation as well as intellectual stimulation).

With the continued investigation of transformational leadership and its affiliation to enterprise learning and knowledge management, few literary works have investigated the link in SME enterprises within Ghana. To provide clear and precise empirical data to the prior literature, this study assesses the effects of transformational leadership on enterprise learning and knowledge management in SMEs in Ghana by testing these hypotheses:

H1a: Transformational leadership has a favorable affiliation with enterprise learning.

H1b: Transformational leadership has a favorable affiliation with knowledge management.

2.2 Enterprise learning and innovation nexus

The learning organization consists of several procedures geared toward knowledge generation from both the internal and external environments. Internal learning can result from approaches such as research, development, and production experience, whereas external learning takes place outside the organization's borders and is then integrated into the organization's internal knowledge base. Individually or in a group, this learning can take place (Nasir et al., 2022). Users can complete a variety of tasks or activities for training courses according to their own schedules using e-learning systems. Users can also engage and exchange knowledge and experiences, creating rich learning flows within organizations. By encouraging the growth of a suitable knowledge flow, enterprise learning offers solutions that convey information and knowledge, improve learning, and increase organizational performance (Menolli et al., 2020). Sancho-Zamora et al. (2022) investigated Spanish enterprises using data from 306 questionnaires on the mediating influence of enterprise learning on the affiliation among absorptive capability and innovation. The results exhibited that enterprise innovation can be achieved through absorptive capability through the mediating instrument of institutional learning. The affiliation between enterprise learning and innovation to improve institutional efficiency was investigated in Indonesia. To achieve the hypothesis developed, the Smart PLS approach was employed to analyze 157 respondents' questions. The findings exhibited that enterprise learning had an inverse significant influence on innovation. However, it had a positive nexus with firm efficiency (Yuliansyah et al., 2021). From the literature review, the next hypothesis was formulated:

H2: Enterprise learning has a positive effect on enterprise innovation.

2.3 Knowledge management and innovation nexus

Knowledge management is the organizational process of gathering, modifying, sharing, utilizing, and reusing knowledge. The creation, organization, diffusion, and use of knowledge are the goals of knowledge management in organizations (Cooper et al., 2016). Donate and Sánchez de Pablo (2015) investigated how leadership and knowledge management relate to the exploitation of innovation. The PLS technique was used in the article's empirical analysis of data on the IT industries. The findings demonstrated that leadership is a significant component in enterprises' achieving innovation efficiency through knowledge management. In Pakistan, Hussain et al. (2020) explored 380 SME participants' and employed the LISREL model in the empirical analysis of the affiliation between KM, learning, innovation, and culture with social media as a moderator and mediating indicator. The findings revealed that KM had a material influence on enterprise innovation. Again, social media served as a favorable moderator and mediator in the affiliation between institutional learning and enterprise innovation. Nguyen et al. (2023) explored governmental support and international knowledge export within SMEs in Vietnam. The results from a panel analysis of 1,018 SMEs demonstrated that governmental non-financial support, such as staff training and technology development quality, improves product and process innovation. Vidyani and Desiana (2022) investigated 203 consultants with analysis through Lisrel 8.50 and showed that knowledge sharing has an immaterial affiliation with innovation and efficiency among employees.

H3: Knowledge management has a positive nexus with enterprise innovation.

2.4 Enterprise innovation and performance

Innovation is exploring modern technologies, new products, modern production lines, and knowledge transfer in an enterprise. According to Alalwan et al. (2017), businesses are increasingly using social media to engage with the market and better integrate internal and external information. Businesses may use social media, for instance, to promote new products and interact in real-time with customers and suppliers (Järvinen & Taiminen, 2016). Recent research has started to examine the relationship between creativity and social media and has demonstrated that innovation mediates the link between enterprise learning and knowledge management. Within the fashion industry (Devara & Sulistyawati, 2019), product innovation mediation has explored the affiliation between market efficiency and market orientation. An analysis of 50 respondents revealed a strong path-mediated affiliation between market orientation and performance. Odei et al. (2021) expand the empirical literature on Visegrad nations on the factors that influence enterprise innovation efficiency. For the period 2012–2014, data was collected from the Eurostat innovation survey. The results revealed that enterprises engaged in research and development can develop new products (48%), processes (27%), and markets (22%).

H4: Enterprise innovation has a favorable nexus with the performance of SMEs.

2.5 Moderating social media nexus

Social media has developed into a form of interactive communication that enables people to share information outside of organizational boundaries in the form of text, photographs, and videos. Social media platforms give organizations a new tool for attaining their business goals, such as communication, cooperation, and internal and external knowledge search. In China, Zhang and Zhu (2022) explored the business model innovation (BMI) of 283 institutions using social media to promote their BMI. The results exhibited that SM had a favorable and material affiliation with BMI. Construction SMEs in Nigeria were studied by Oyewobi et al. (2021) using the PLS model

to test the path of affiliation between social media, enterprise performance, and enterprise learning capability. The empirical results indicate social media has a favorable and material impact on enterprise performance. Again, institutional learning serves as a mediator between social media and enterprise efficiency. Qi and Chau (2016) explored social media usage and its influence on institutional learning, linking the mediating effects of creation and sharing knowledge. The findings demonstrated that social media had a material effect on enterprise learning. From previous investigations, it can be concluded that social media can be seen from different dimensions: marketing, customer relations, service, product development, and access to information. Viglerová et al. (2022) researched SMEs for the period 2019–2020 with SPSS as an analytical tool, determining that social media has no substantial effect on SMEs’ efficiency. A recent investigation in Nigeria on social media marketing and enterprise efficiency using a 376-questionnaire analysis with PLS-SEM demonstrated that SMEs that adopted social media marketing strategies had a substantial improvement in their sales performance (Lawal & Adejuwon, 2023). Sharma et al. (2023) on social media and enterprise learning in India, based on data gathered from two sources and 281 respondents, demonstrate that informal learning serves as a mediator between institutional social media and learning capabilities. We propose the following hypothesis with the above arguments:

H5: social media has a positive influence on enterprise performance.

H5a: social media moderates the affiliation between enterprise innovation and enterprise performance.

H5b: social media moderates the affiliation between organizational learning and enterprise innovation.

H5c: social media moderates the affiliation between knowledge management and enterprise innovation.

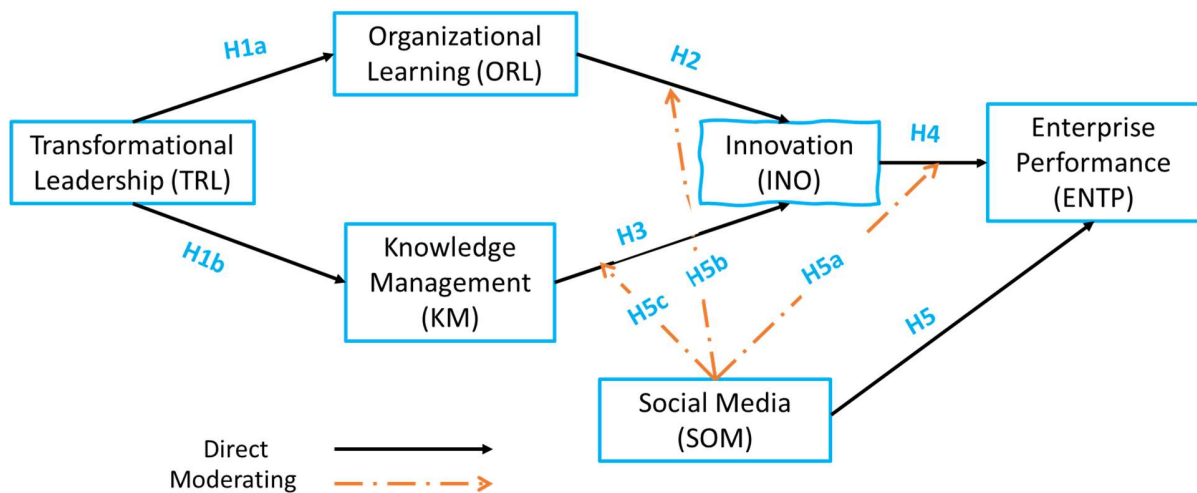


Fig. 2 - Conceptual model. Source: own research

3. METHODOLOGY

3.1 Data collection and sample

The data is a compilation of the results of questionnaire research on manufacturing enterprises in sixteen Ghanaian cities and regions. Using the teamwork and interpersonal connections interaction of the research group's first plan, we communicated with industrial personnel, reviewed the objectives of our initial study, and sent emails to the managers and directors. Given the small sample size and the potential for poor response rates, we mailed questionnaires to manufacturing organization managers and directors. Respondents were also upper-level managers and directors at these manufacturing firms. These executives and board members understand the importance of cutting-edge green technology in improving the firm's bottom line and environmental impact. This research was completed over the course of three months, from 12/2022 to 02/2023. A total of 500 manufacturing businesses were contacted through email and asked to participate in the survey. Using basic random sample procedures and a cross-sectional design, 700 questionnaires were mailed to management of publicly traded companies. Consequently, the final data consisted of 590 managers of which 403 were male. All respondents have had some form of formal education: 304 were bachelor's degree holders, 37.80 percent indicated they have a master's degree, and 63 respondents were PhD degree holders. With regards to working experience, more than 50 percent of the respondents had 20⁺ years of experience. While 104 had between 6 – 15 years working experience, the rest had worked between 16 – 20 years.

The questions in the survey were anchored on seven-point Likert scales and examined factors that were shown to be important in the existing research. The demographics, TRL, ORL, KM, INO, SOM, and ENTP questions comprised the seven sections of the study questionnaire. In the demographics section, we asked about the respondent's age, gender, education level, and occupation. The measuring items for transformational leadership (TRL) were taken from prior research and consist of five components (TRL1–TRL5). Organizational learning (ORL) is comprised of five dimensions (ORL1–ORL5). Again, knowledge management (KM) consists of four items (KM1–KM4), and innovation consists of five items (INO1–INO5). Social media was measured with five items (SM1–SM5), and enterprise performance had five constructs (ENTP1–ENTP5) (see Appendix 1). The theoretical framework is assessed using partial least squares (PLS) structural equation approach. PLS is considered suitable when the sample is small, as it was in our work (Kemény et al., 2016; Luo et al., 2015). Second, data normalization is not required by the PLS approach. Thirdly, the proposed model and testing of hypotheses were quantified employing the partial least squares structural equation modeling (PLS-SEM) approach. PLS illustrates the relationship between actual potential exogenous and endogenous factors and their items. Small sample numbers, non-normal data, and structural indications necessitated the use of PLS-SEM to assess more complex model structures (Hair et al., 2020). The Smart-PLS 3 program was utilized in this investigation to evaluate the hypotheses. Researchers in the social sciences often rely on this program (Henseler et al. 2015). Also, statisticians have pointed out that PLS-SEM has many benefits as a nonparametric, including the fact that normally distributed data are not necessary, a small sample sizes can be used, and type II errors can be reduced with effectively handling formative measurements (Hair et al., 2020).

4. RESULTS AND DISCUSSION

4.1 Measurement model analysis

We first assured respondents that the data collected would be kept secret and utilized only for research purposes in order to prevent common method bias (CMB). Second, respondents were urged to follow their company’s policies when responding rather than societal norms or their personal feelings. Additionally, the first factor only accounts for 43% of the fluctuation, as shown by Harman's single component test, proving the absence of CMB. Confirmatory factor analysis provides more evidence in favor of this finding (Byrne & Stewart, 2006). As a result, we can state with certainty that there is no CMB issue. The validity and reliability of the items were investigated to validate the measurement model. The reliability evaluation measured how well the items could yield the same outcomes under identical circumstances. The use of composite reliability was used to assess the items' internal consistency. According to the findings in Table 1 (Hair et al., 2014; Hair et al., 2017), almost all the constructs met the necessary threshold value of >0.70, indicating the reliability of the items. However, the items INO3 (0.639), INO4 (0.643), and ORL4 (0.496) were deleted as they did not meet the threshold value, except for ORL5, which was maintained due to their content. Also, validity tests by assessing average variance extracted (AVE) and Fornell-Larcker were carried out. All the constructs’ average extracted variances were greater than 0.50, demonstrating acceptable convergent validity (Hair et al., 2014). Also, all the VIF values are less than 3.3, according to the results of Tab. 1, suggesting that the model is free from multicollinearity.

Tab. 1 - Measurement of validity and reliability synopsis. Source: own research

Variables	Proxy	CA	Rho_A	CR	AVE	VIF
Enterprise performance		0.877	0.880	0.911	0.671	
	ENT1	0.826				2.046
	ENT2	0.867				2.591
	ENT3	0.868				2.621
	ENT4	0.772				1.721
	ENT5	0.758				1.743
Innovation		0.838	0.849	0.892	0.675	
	INO1	0.759				1.630
	INO2	0.876				2.318
	INO4	0.774				2.283
	INO6	0.870				1.627
Knowledge Management		0.807	0.837	0.874	0.636	
	KM1	0.757				1.583
	KM2	0.717				1.476
	KM3	0.797				2.432
	KM4	0.906				3.033
Organizational Learning		0.806	0.805	0.875	0.637	
	ORL1	0.785				1.741
	ORL2	0.843				2.444
	ORL3	0.873				2.867
	ORL5	0.679				1.218

Social Media		0.861	0.874	0.900	0.645	
	SOM1	0.711				1.936
	SOM2	0.777				2.096
	SOM3	0.899				3.851
	SOM4	0.833				2.861
	SOM5	0.783				2.190
Transformational leadership		0.881	0.883	0.914	0.680	
	TRL1	0.748				1.645
	TRL2	0.845				2.550
	TRL3	0.810				2.483
	TRL4	0.874				3.326
	TRL5	0.838				2.885

Tab. 2 - Fornell-Larcker Criterion. Source: own research

Variables	INO	KM	ORL	TRL	ENT	SM	R ²	Adjusted R ²
INO	0.821						0.403	0.399
KM	0.593	0.798					0.239	0.238
ORL	0.466	0.612	0.798				0.462	0.461
TRL	0.483	0.489	0.680	0.824				
ENT	0.746	0.775	0.687	0.591	0.819		0.838	0.837
SM	0.521	0.843	0.657	0.589	0.830	0.803		

The square root of the AVE for each construct was higher than the correlation for other constructs, following the Fornell-Larcker criterion findings shown in Table 2 (Hair et al., 2014; Fornell & Larcker, 1981), confirming the discriminant validity of the construct. The outcome was obtained from the Smart PLS 3 algorithm with a 5000 resampling (R1b). As a result, discriminant validity for the constructs is confirmed. The coefficient of determination (R²) shows the percentage of variance explained by the exogenous constructs in the model to indicate their predictive power. The R²s for innovation, enterprise performance, knowledge management, and organizational learning were 0.403, 0.838, 0.239, and 0.462, respectively. The constructs of innovation, enterprise performance, and organizational learning are sufficiently explained by the independent variables, as their R statistics are greater than the threshold values Cohen (1988) suggested for a substantial level of 0.26. Also, knowledge management is moderately explained by transformational leadership.

4.2 Structural model analysis

Tab. 3 - Direct effect of variables. Source: own research

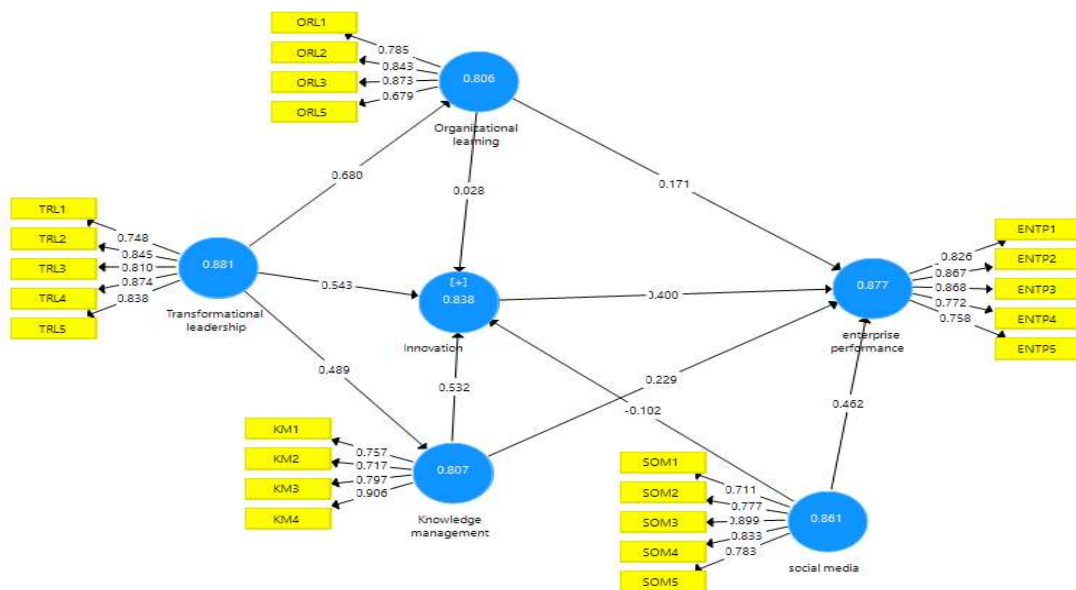
Hypothesis	Path	Original sample	Std. Dev.	t-statistics	p-value	Conclusion
H1a	TRL->ORL	0.680	0.042	16.159	0.000	Not rejected
H1b	TRL->KM	0.489	0.061	8.016	0.000	Not rejected
H2	ORL->INO	0.028	0.059	0.474	0.636	Rejected
H3	KM->INO	0.532	0.086	6.160	0.000	Not rejected

H4	INO->ENTP	0.400	0.033	12.196	0.000	Not rejected
H5	SM->ENTP	0.503	0.037	13.561	0.000	Not rejected

4.3 Transformational leadership and organizational learning

Regarding the consequence of transformational leadership on enterprise learning, the results imply that there is a substantial positive relationship. Specifically, the path coefficient obtained implies that improvement in transformational leadership results leads to an increase in organizational learning of 68 percent when all other factors are held constant (see Tab. 3). This result supports the hypothesis that transformational leadership influences organizational learning (= 0.680; p 0.000). The study differs from prior literature in that it has provided empirical evidence that four dimensions of transformational leadership, including idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration, are crucial as they affect organizational learning. These dimensions are not articulated much in the transformational leadership and organizational learning literature. Further, the study adds to the literature that employees' learning capacity is sustained when the leader conveys certainty that study objectives can be met (Carless et al., 2000), as well as investing much effort in instructing and guiding. Also, the ability of employees to view a situation from several angles and consider the moral and ethical perspective of their decisions fosters their learning. The explanation for this result is that transformational leadership reduces a lack of motivation towards learning. Further, transformational leadership boosts the confidence of employees towards the achievement of their learning objectives as well as instills in them the ability to consider situations from a multi-dimensional perspective (Sayyadi Ghasabeh & Provitera, 2018; Lindblom et al., 2016), which in turn broadens their scope. The results of this study support the results of the study by Khan and Khan (2019), whose study reports that transformational leadership significantly impacts organizational learning. Further, the findings support the result of the study by Tuan and Thao (2018) that transformational leadership has a sizeable influence on organizational learning.

Fig. 3 – Structural model showing direct relationships. Source: SmartPLS3 output



4.4 Transformational leadership and knowledge management

The results, as demonstrated in Tab. 3, indicate a statistically significant positive effect of transformational leadership on knowledge management. Taking into account the path coefficients and, by implication, all other things that have been held constant, a 100 percent increase in transformational leadership will cause a 48.9 percent improvement in knowledge management (see Fig. 3). The result confirms the hypothesis that transformational leadership impacts knowledge management. This suggests that transformational leaders are the forerunners in the successful implementation of knowledge integration as well as enabling the development of alliances with external partners to foster knowledge exchange (Sayyadi Ghasabeh & Provitera, 2018; Jiang et al., 2013). Moreover, employees are motivated to gather pertinent information and to take part in external career associations since transformational leaders encourage creative solutions. This supports prior research's favorable association with transformational leadership and information acquisition. Further, the findings of this study support how the measurements of transformational leadership (intellectual stimulation, individualized consideration, and idealized influence) are associated with knowledge management scales (Sayyadi Ghasabeh & Provitera, 2018), which are lacking in prior literature. Also, the result of this study provides additional perspectives on the various dimensions of transformational leadership and how they facilitate knowledge management. This study supports the findings of Archanjo de Souza et al. (2020) and Birasnav (2014), whose studies conclude that transformational leadership impacts knowledge management. Accordingly, the result corroborates the study of Birasnav et al. (2011), who found a significant relationship between transformational leadership and knowledge management, emphasizing information and knowledge creation.

4.5 Enterprise learning and innovation

Enterprise learning and innovation were found to be insignificantly and positively related in this study. The path coefficient indicates that an increase in the factor leading to organizational learning will increase organizational innovation by 3 percent while holding all other factors constant (see Fig. 3). The significance of enterprise learning for novelty is explained in the literature. For instance, organizational learning creates synergies that assist businesses in fostering innovation, development, and sustainability within their organizations. Further, innovative and creative actions are promoted in any organization that puts learning first (Hussain et al., 2020). Organizations attain and use records, information, knowledge, and procedures to foster invention and transformation by employing these kinds of behaviors as well as creating a learning environment. Moreover, organizational learning, as indicated in extant literature, positively impacts the characteristics of innovation such as innovation quality, capacity, and speed (Son & Phong, 2023). Also, the study of Akgün et al. (2023) supports a significant and favorable impact of enterprise learning competence in terms of managerial assurance, structure perspective, openness and experimentation, and knowledge transference and combination on service innovation. Further, Achdiat et al. (2023) and Hussain et al. (2020) found organizational learning to be related to innovation. But, the finding of this current study suggests organizational learning does not enhance innovation; hence, hypothesis H2 is rejected.

4.6 Knowledge management and innovation

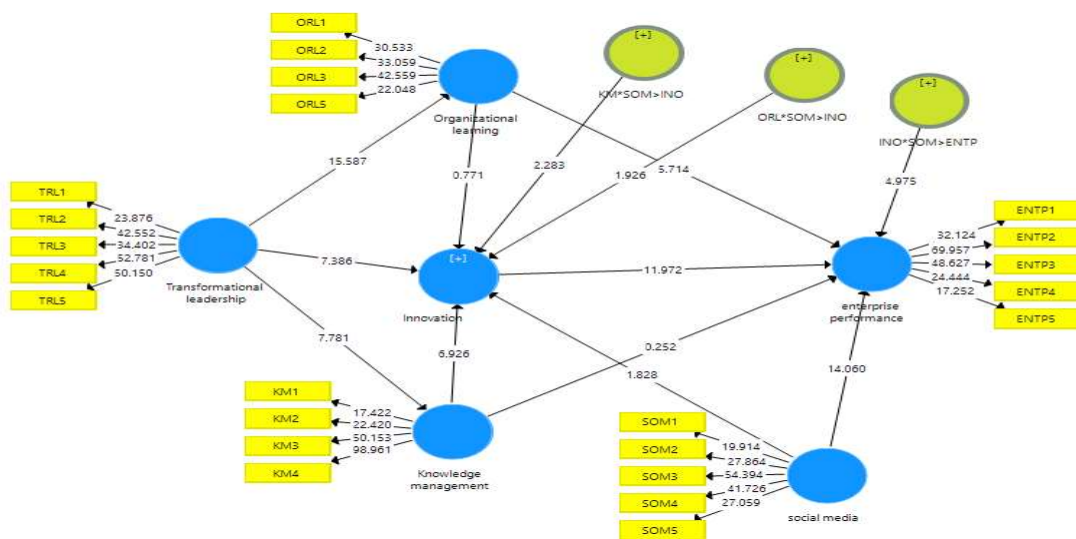
Knowledge management and innovation were found to be positively and significantly correlated in this study. The path coefficient and p-values revealed that, while holding all other factors constant, an increase in knowledge management with regards to transfer, creation, storage, and application results in a 53.2% improvement in the index of innovation measures. The findings lend credence to the idea that innovation is impacted by employees' knowledge management. The findings of this study have been discussed in the existing literature. Studies by Migdadi (2022), and Balasubramanian et al. (2020), for example, have highlighted the knowledge management process through creation as vital for innovation results. By implication, promoting knowledge creation highly influences product and service innovation. Hence, organizations should focus on training employees as well as enhancing their internal research and development activities to develop or improve technologies that foster radical innovation. Also, knowledge sharing and transfer have been found to be strong predictors of innovation (Migdadi, 2022; Donate & Sánchez de Pablo, 2015). Knowledge sharing and transfer among employees within SMEs promotes learning, strengthens their skills and competencies, and increases their capacity to create novel goods, as well as new routines and procedures. Moreover, individuals who are deficient in terms of knowledge are more likely to be skeptical towards innovation and change (Hussain et al., 2020). And, new knowledge creation is key to digital innovation. Therefore, the result of this study corroborates and is in line with the results of the extant literature. As the current study has found, studies have suggested that knowledge management through application and storage promotes innovation (Balasubramanian et al., 2020). Moreover, in support of this study, Lam et al. (2021) suggest that knowledge management positively and significantly enhances innovation capability. This study fills the knowledge gaps allowed by earlier research by quantifying the combined impact of the knowledge management process (transfer, acquisition, storage, and creation) on innovation, while earlier studies (Migdadi, 2022; Balasubramanian et al., 2020; Donate & Sánchez de Pablo, 2015) conceptually measured each single construct or focused on specific aspects of the knowledge management process (Lam et al., 2021).

4.7 Innovation and enterprise performance

Concerning the effect of innovation on performance, the results obtained suggest that there is a statistically significant positive correlation relating innovation and enterprise performance. Taking into consideration the path coefficient of = 0.400; $p < 0.000$, there is an implication that when factors accounting for innovation increase, enterprise performance will improve by 40 percent, all other variables being held constant (see Tab. 3). These findings are consistent with the notion that innovation has an impact on enterprise performance. This study has provided initial evidence that innovation enhances enterprise measurements including profitability, sales growth, customer performance, net profit margin, and overall performance. These findings can be explained by the fact that organizations with greater innovation capacity are better positioned to take advantage of market opportunities than non-innovative companies, allowing them to respond to problems faster and foster new product and service development. Further, both product and service innovation have developed into tools for preserving competitive advantage as well as essential tools for the continued operation of organizations. Moreover, organizations that possess a high level of innovation are more likely to be successful in meeting customer needs, increasing brand values, attracting new customers, and creating new capabilities that allow them to improve a firm's

performance or profitability (Kurdi et al., 2020; Liao & Tsai, 2019). Also, this is so because innovation promotes organizational sustainability, increases revenue, and improves the welfare of employees (Bishop, 2020). Additionally, it seeks to identify novel approaches to problem-solving through both individual and group learning, which, in the long run, improves business performance. Further, this study has empirically proven that product, service, and technological innovation positively influence enterprise performance, including profitability, sales expansion, client satisfaction, net profit margin, and overall performance, which bridges the disparity recognized in a prior study by Hanelt et al. (2021), who obtained similar results but measured digital innovation on operation performance utilizing return on asset, market performance using market-to-book ratio, as well as analyst forecasts utilizing a three-year earning per share (EPS) forecast. Further, this study's results align with the findings of prior research suggesting that product, service, and technological innovation sustain as well as enhance organizational performance (Limsangpetch et al., 2022; Tajvidi & Karami, 2021).

Fig. 4 – Structural model showing moderation paths. Source: SmartPLS3 output



4.8 Social media and enterprise performance

The direct correlations between the variables, social media and enterprise performance have a substantial and positive relationship, as shown by the path coefficient and p-value = 0.455; p 0.000. The path coefficient suggests that, while holding all other factors constant, an increase in social media application usage results in a 46 percent improvement in organizational performance. Our findings add evidence from SMEs in an emerging economy that social media contributes to enterprise performance, supporting existing social media marketing research. For example, the results of Kamboj et al. (2017) suggest that financial and market performance are impacted by social, hedonic, and cognitive uses of social media. Also, extant literature corroborates the favorable impact of social media usage on organizational performance (Tajvidi & Karami, 2021). Thus, H5 is accepted.

Tab. 4 - Moderating effect of social media. Source: own research

Hypothesis	Path	Beta	Std. Dev.	t-status	p-value	Conclusion
H5a	SOM*INO->ENTP	-0.036	0.007	4.975	0.000	Not rejected
H5b	SOM*ORL->INO	-0.110	0.060	1.926	0.055	Rejected
H5c	SOM*KM->INO	0.123	0.054	2.283	0.023	Not rejected

This study hypothesized that social media moderates the correlation between innovation and enterprise performance, enterprise learning, and innovation, in addition to knowledge managing and innovation. The interaction effect involving social media and innovation on enterprise performance is substantial ($= 0.036$; $p 0.000$), as shown by the data in Tab. 4 and Fig. 4. Hence, the support for hypothesis H5a. Considering the path coefficient, the favorable impact of innovation on enterprise performance is reduced in the presence of social media. By implication, SMEs' performance will increase through the advancement in novel products and services, as well as the process and technology, without the support of social media within the invention procedure. The results of this study further demonstrate that social media considerably alters the affiliation amid knowledge management and innovation by demonstrating that sharing information on social media, including WhatsApp, Facebook, Instagram, Twitter, Snapchat blogs, LinkedIn, and Facebook Messenger, has emerged as a knowledge creation, sharing, storage, and acquisition platform that fosters innovation (H5c). Moreover, the results of the study demonstrate that social media does not moderate the association linking enterprise learning and enterprise performance among SMEs, indicating that enterprise learning through various social media platforms does not enhance or reduce enterprise performance (H5b). Also, with or without social media, other means through which SMEs acquire knowledge will improve their performance.

Tab. 5 - Mediating effect of knowledge management. Source: own research

Path	Impact of IV on M (a)	Impact of M on D (b)	Direct influence (c')	Indirect impact (a*b)	Total impact (c)	Variance accounted for (VAF)	Conclusion
TRL->KM->INO	0.489	0.532	0.264	0.260	0.524	50%	Partial mediation

After examining the main predictors of innovation and enterprise performance, the study tested if knowledge management underlies the cause-and-effect correlation linking transformational leadership and innovation. The reason has been that extant literature has confirmed the connection amongst transformational leadership and knowledge management (Archanjo de Souza et al., 2020; Sayyadi Ghasabeh & Provitera, 2018; Birasnav, 2014), as well as knowledge management and innovation (Migdadi, 2022; Balasubramanian et al., 2020; Donate & Sánchez de Pablo., 2015). This study obtained a direct impact of transformational leadership on innovation, which confirms the conclusions of prior studies (Lei et al., 2020; Watts et al., 2020). Hence, the study followed Preacher and Hayes' (2008) bootstrapping approach to mediation. The condition necessitates a direct connection between all the constructs. The results from Table 5 suggest a significant relationship between TRL and KM, KM and INO, and TRL and INO. Hence, the study concluded that knowledge management intermediates the transformational leadership and innovation

relationship. Using the variance accounted for (VAF), the study measured the strength of the mediation effect. The VAF of 50 percent suggests that knowledge management partially mediates the link connecting transformational leadership and enterprise innovation. By implication, the association relating transformational leadership, knowledge management, and organizational innovation reveals that managers require transformational leadership characters to enhance the knowledge of employees and enable them to engage in innovative activities. Therefore, organizations should build the qualities of transformational leadership among employees, encourage them to acquire knowledge and abilities, and create an enabling environment that supports innovation.

4.9 Contribution of the research

Based on the empirical analysis, the current investigation has some originality, in that the mediation and moderation influences of INO and SOM is evaluated for the first time. SOM is also explored for the first time through NRBV. Again, the investigation of ORL, KM, INO, and SOM on ENTP is different from past literary works (Odei et al., 2021; Khalid et al., 2023). The study closes the gaps in of other studies (Khan & Khan, 2019; Noruzy et al., 2013). This study ignores the significance of social media in SMEs' performance. The investigation contributes to the influx of debate on SOM and INO adoption and exploitation of social media platforms to generate development, competitiveness, and sustainability in a business landscape that is continually shifting. SMEs in emerging economies like Ghana account for the highest manufacturing activities. Therefore, leadership involvement in knowledge management, and learning to create an innovative product and process for an enterprise to achieve its objectives cannot be overlooked. As enterprises are now seconds away from social media for marketing, advertisement, communication, and training of new employees, its affiliation with enterprise performance is significant to academia and industry leaders.

5. CONCLUSION

This study investigated the impact of social media on enterprise learning, knowledge management, enterprise innovation, transformational leadership, and enterprise performance. The study assessed the moderating role of social media on the link connecting innovation and enterprise performance, organizational learning, and innovation, together with knowledge management and innovation among SMEs. The study utilized data from SMEs in Ghana's manufacturing sector. Smart PLS structural equation modeling was engaged to analyze the hypotheses suggested by the study. According to the findings, transformational leadership remains a key predictor of enterprise learning (H1a) and knowledge management (H1b). The reason has been that such leaders are able to create the facilitating environment necessary for acquiring information and new ideas as well as managing knowledge. Also, organizational learning was revealed not to have an impact on organizational innovation (H2), indicating that SMEs in manufacturing sectors, specifically, may be subjected to learning not for innovation activities but for other reasons. Further, knowledge management enhances innovation (H3), which in turn increases organizational performance (H4), suggesting that knowledge creation, sharing, application, and transfer play vital roles in the conception of new products and services as well as business processes. The findings also exhibit that social media performs an essential function in improving firm performance (H5). Further, social media acts as a moderator in the innovation-to-enterprise performance and knowledge

management-to-innovation relationships. Again, knowledge management considerably mediates the significant positive impact of transformational leadership on enterprise innovation. The direct impact, however, is greater than the indirect influence, indicating that, so long as there is a conscious effort with regards to the organizational process of collecting, varying, allocating, utilizing, and reusing knowledge, transformational leadership will have a greater impact on enterprise innovation.

5.1 Practical implications

Implications need to be emphasized in light of the findings. First, it was established that transformational leadership considerably influences enterprise learning, knowledge management, and enterprise innovation. So, transformational leadership is crucial to the development of SMEs. Hence, SMEs should concentrate on developing the traits of transformational leadership among employees to increase organizational performance. Additionally, it was discovered that social media improves organizational performance among SMEs. This implies that organizations should continuously promote the utilization of social media to augment their performance. Knowledge management plays a partial intervening role in the correlation connecting transformational leadership and enterprise innovation. By implication, SMEs must understand how significant knowledge management is and place much emphasis on results in innovative activities, which have the tendency to translate into overall organizational performance. Transformational leadership, knowledge management, enterprise learning, innovation, and social media, as underlined in this study, are critical to the overall performance of organizations. Hence, SMEs should effectively combine these skills, characteristics, and behaviors for the growth and survival of their institutions.

5.2 Limitations and potential research directions

Despite the intriguing results of this investigation, restrictions should be considered. First, the study is limited to SMEs in the manufacturing sector in Ghana. Therefore, the outcomes probably do not relate to other industries where the usage of social media as well as transformational leadership styles are limited. Hence, there is a need for future studies to address this limitation by extending and testing our conceptual framework in such sectors. Further, this study did not utilize a specific social media application to determine its impact as well as the moderation effect of the study constructs. The various social media applications have their strengths and weaknesses. Considering this, future studies should concentrate on a specific social media application and its impact on other organizational factors within the same or different sectors. Moreover, transformational leadership is a critical contributing factor to knowledge management and enterprise innovation, which are also key predictors of organizational performance. Hence, we propose that future studies examine the multiple intermediating roles of knowledge management and innovation in transformational leadership and enterprise performance relationships.

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Appendix 1: Measurements of variables and sources

Variable	Questionnaires	Sources
Knowledge management	<p>KM1-Transfer- There are communities of practices or learning groups to share knowledge and experiences.</p> <p>KM2-Creation- There is a strong commitment (for example, training, equipment) to depend on internal R&D activities to develop or improve technologies (products, processes)</p> <p>KM3-Storage- There are databases that allow employees to use knowledge and experiences that have previously been loaded into the databases.</p> <p>KM4-Application- All the employees have access to relevant information and key knowledge within the firm.</p>	(Donate & Sánchez de Pablo, 2015; Archanjo de Souza et al., 2020)
Transformational leadership	<p>TL1- Idealized Influence with the indicator “leader considers the moral and ethical consequences of the decision,”</p> <p>TL2- Inspirational motivation with the indicator “leader expresses confidence that the goal is achievable,”</p> <p>TL3- Intellectual stimulation with the indicator “leader makes others see the problem from various perspectives,”</p> <p>TL4- Individualized consideration with the indicator “leader spends time teaching and training.”</p> <p>TL5- Leadership in the company is strong enough to inspire and direct employees.</p>	(Cavazotte et al., 2020; Carless et a., 2000)
Organizational learning	<p>ORL1- The organization has learned or acquired much new and relevant knowledge over the last three years.</p> <p>ORL2- Organizational members have acquired some critical capacities and skills over the last three years.</p> <p>ORL3- The organization’s performance has been influenced by new learning it has acquired over the last three years.</p> <p>ORL4- The organization is a learning organization.</p> <p>ORL5- The corporation engages in frequent collaboration and information sharing with other institutions.</p>	(Noruzy et al., 2013; Hussain et al., 2020)
Innovation	<p>INO1- The company introduces new items and services to the market.</p> <p>INO2- The company has grown far more innovative than its rivals.</p> <p>INO3-Pioneering technological innovation in the industry.</p> <p>INO4- In response to customer demand for greater concern for the environment, the company has introduced timely improvements to its manufacturing methods.</p> <p>INO5- When it comes to creating innovative products, our company outperforms the market leaders.</p>	(Limsangpetch et al., 2022; Nasir et al., 2022)
Enterprise performance	<p>ENP1- profitability</p> <p>ENP2-sales growth</p> <p>ENP3- Customer performance</p> <p>ENP4-Net profit margin</p> <p>ENP5- Overall performance.</p>	(Yuliansyah et al., 2021)
Social media	<p>SOM1- I often uses social media to obtain work-related information and knowledge.</p> <p>SOM2- I regularly uses social media to maintain and strengthen communication with colleges in my work.</p> <p>SOME3-What is your frequency of usage of social media in the work?</p> <p>SOM4- How often do you use social media to distribute messages to stakeholders.</p> <p>SOM5- How often does your enterprise employ social media for product and service communication?</p>	(Hussain et al., 2020)