



Exploring the global landscape: How digital communication and advanced technology empower SMEs

Muhammad Haseeb Shakil

COMSATS University Islamabad, Lahore Campus, Pakistan

The Superior University, Lahore, Pakistan

*Nurul Wahidah Binti Mahmud Zuhudi

Taylor's University, Malaysia

NurulWahidah.MahmudZuhudi@taylors.edu.my

Muhammad Mukarram

The Superior University, Lahore, Pakistan

Ali Sajjad

The Superior University, Lahore, Pakistan

Aqsa Akbar

COMSATS University Islamabad, Lahore Campus, Pakistan

ABSTRACT

This paper examines the relationship between digital communication and the globalisation of small and medium-sized enterprises (SMEs), with a particular focus on the role of technology as a mediator. Globalisation has created numerous new opportunities and challenges for SMEs, and effective communication has become a critical factor for their success. With the increasing availability and adoption of digital technologies, SMEs now have new means to overcome communication barriers and expand their reach to global markets. However, technology adoption alone may not be sufficient, and effective communication strategies are required to fully leverage its potential. This paper explores the ways in which technology can mediate the relationship between communication and globalisation of SMEs, with a particular focus on the role of digital communication. The study utilises survey data collected from a sample of SMEs operating in various regions of Pakistan. Overall, the paper highlights the importance of effective communication in the globalisation of SMEs and the critical role that technology can play as a mediator in this process. The findings of the study have practical implications for SMEs and policymakers regarding the adoption and use of digital communication tools to enhance their globalisation efforts.

Keywords: **Communication, advanced technology, globalisation**

INTRODUCTION

Small-medium enterprises (SMEs) lack technological, financial & human resources which has become a constraint its globalisation process using technology. SMEs can create industry linkages for the development of a broad-based industry. In developing countries, it is not possible to sustain employee ability and sustainability without SMEs. The growth of new export markets could be considered a strong strategic mechanism to promote globalisation among SMEs. Clustering and networking also play a vital role in generating the competitiveness of SMEs in the global market. SMEs can boost their globalisation process through their relationships and networks (Foghani et al., 2017).

Small and medium enterprises (SMEs) play a vital role in economic growth, and help to create employment opportunities (Halim et al., 2019). All governments actively encourage their SMEs to look at the global market for potential company growth by taking advantage of export opportunities. However, this has never been a simple process. To compete with other industry players globally, SMEs have to possess a competitive advantage (Kanibir et al., 2014). Due to the complexity of the international business environment, researchers frequently concentrate on examining capability-performance relationships, which likely involves a step-by-step analysis of whether divergent capability-performance results are attributed by organisational capabilities that fail to develop competitive advantages (Cieslik & Kaciak, 2009).

Globalisation is the process by which a business or organisation develops international influence to start operating on an international scale. It is the speedup of business activity to support the exchange of goods, products, services, or practices all over the world (Beck, 2018). Some globalisation indicators include cross-border movement of ideas, people, technology, portfolio capital, and “effective institutional practices”. Globalisation plays a vital role in the growth of every business. Although social media is a platform by which entities can get in touch on the global level, cultural diversification remains a challenge (Chaloupková et al., 2020). For instance, the autonomous industry of Europe has been damaged heavily triggering a big crisis. The autonomous industry has a complex system of interconnected entities which requires mutual interaction through effective communication (Hojdik, 2021).

The exchange of information through verbal or non-verbal tools is called communication. In the same way, the exchange of information, knowledge, and messages in the global context is called global or international communication. The paradigm of communication has shifted from face-to-face communication to social communication in different platforms. Today, social communication is preferred in the new and modern global market (Lebedko, 2014). Additionally, digital innovation is an effective way to transform data and information to innovate new ways and practices (Foroudi et al., 2017). Digital innovation offers an opportunity to expand business operations on a global level and support the globalisation process (Contractor, 2021). Technological advancements can help facilitate global coordination with the relevant stakeholders. Technological advancements also reduce the cost of transportation, enhance communication among nations, and help the global sourcing of raw materials. Technology contributes to globalisation by helping firms find foreign opportunities. Thus, effective communication aligned with advanced technology has become the core of the new world economy (Mikail & Aytakin, 2016).

Since globalisation and communication are two different concepts and considering that most past studies have examined internationalisation in regard to the role of product innovation and pricing, the need for further research on communication and globalisation is recognised (Falahat et al., 2020; Westerlund, 2020). Further, the world is always changing

due to unexpected crises. In addition, many parts of the global world has embraced the virtual work world which has changed work patterns and workplace practices. These changes also present SMEs opportunities to work on a global level using technological platforms. Recognising this, the present study sets out to measure the role of communication in globalisation with the mediation effect of technology.

Moreover, to the best of our knowledge, there is currently a limited understanding of the following research questions: Does communication play a vital role in the globalisation process of SMEs? Is technology considered a mediator between communication and the globalisation of SMEs? In this paper, we aim to shed light on these research gaps by investigating the role of communication in globalisation with mediating role of technology. Policymakers, owners of small enterprises, and young entrepreneurs can focus their expertise on the development of strategies strongly associated with the globalisation of SMEs (Naradda Gamage et al., 2020).

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

After World War I, the growth of capitalism slowed down as both globalisation and capitalism suffered from the far-reaching consequences of the war. Next, World War II caused fundamental changes in global development because a new hierarchy of states took form in regional and global institutions, international laws were established, and many foreign territories underwent decolonisation. The current process of globalisation involves the transfer of information technology and financial markets (Ruzana, 2015). The Actor-Network theory, introduced in 1984, posits that all human and non-human factors have equal influence on technological innovations. This theory looks at how networks are formed and how they contribute to success.

Digital communication and globalisation

Communication is an important tool for the exchange of information and knowledge and brings the human nature into new scenarios (de Bem Machado et al., 2019). Globalisation is the process by which a business or organisation develops international influence to start operating on an international scale. It is the speedup of business movement to facilitate exchange of goods, products, services, or practices all over the world (Beck, 2018). Digital communication in globalised world involves innovative ways of disseminating information (Falahat et al., 2020).

Today, digital communication has significantly expanded the reach of SMEs beyond their local markets. Through websites, e-commerce platforms, and online marketplaces, SMEs can now access a global customer base, breaking down geographical barriers and enabling them to sell their products or services to customers worldwide, thus enhancing their opportunities for growth and profitability (Musungu, 2021). It also facilitates SMEs' integration into global supply chains. Through online sourcing platforms and digital marketplaces, SMEs can connect with suppliers and manufacturers from around the world, allowing them to access a wider range of raw materials, components, and resources at competitive prices which enables SMEs to optimise their production processes, reduce costs, and improve overall efficiency (Attaran, 2020). Digital communication tools also enable SMEs to collaborate and network with international partners, industry experts, and potential investors. Virtual communication platforms, webinars, and online forums provide opportunities for knowledge-sharing, partnership formation, and accessing mentorship and guidance from experienced professionals, regardless of geographical distances (Foghani et al., 2017).

SMEs create industry linkages for the development of broad-based industries. In developing countries, it is not possible to sustain employee ability and sustainability without SMEs. As such, the growth of new export markets or customer bases is considered a strong strategic mechanism to promote globalisation among SMEs. To overcome the constraints of credit and investment costs, clustering plays a vital role (Giordani et al., 2020). It provides trade credits among companies. Clustering and networking also play a vital role in building up the competitiveness of SMEs in the global market. SMEs can develop their globalisation process using their relationships and networks because relationships and networks influence market decisions and help SMEs to enter the global market (Foghani et al., 2017). Based on this discussion we propose the first hypothesis as follows:

H1: Communication significantly and positively contributes to the globalisation of SMEs.

Digital communication and technological advancements

Transformations in international communication have given rise to the concept of interconnectedness of entities. New media technologies have helped connect countries for exchange of resources, knowledge, skills, and experiences. Further, computerised technology reduces the cost of communication by enabling virtual communication instead of face-to-face communication. Thus, media agencies today invest aggressively in the latest and most effective communication strategies (Drezner, 2019).

Key global organisational capabilities come from a combination of efficient human resources, teamwork, coordination among employees and entities as well as knowledge and skills (Katsou et al., 2020). Change management is an important feature of management today. In addition to adapting to new ideas and changing business landscapes, it is also very important to know how to manage diversity (Siebert et al., 2015). Managing diversity means maximising the benefits from a diverse workforce while minimising problems that can affect human resources. Diversity management is a big challenge in the 21st century for managers as they must delicately manage diversity-related issues and foster the inclusion of all employees irrespective of background (Barak, 2022).

Past studies have shown that the Internet helps to integrate the structure of human life on a global level. Through Internet, various new tools of coordination that contribute to the efficiency of the workplace have been developed and adopted. These tools reduce common barriers in business like lack of space, disruptions to economic activity, etc. However, the whole process requires proper discipline, rules, and policies. The growth of Internet along with globalisation has helped business structures to grow into multinational corporations (MNCs) (Haseeb et al., 2019). Another study revealed that communication aligned with technology has become the core of the new world economy. Digital communication now provides faster communication which contributes to exponential growth and higher productivity (Drezner, 2019). It empowers organisations and firms as well as affects the practices of international relations. One can even say that the balance of power in international relations is dependent on the revolution of technology (Mikail & Aytakin, 2016). The second hypothesis posited is as follows.

H2: Communication significantly and positively contributes to technological advancements.

Technological advancements and globalisation

Literature shows that technology is one of the critical success factors of SMEs (Lecerf & Omrani, 2020). When adopting a strategy plan and strengthening an organisation's

core strengths, technology has been identified as an essential element for competitiveness (Oh & Pinsonneault, 2007). Thus, business owners and management have significantly increased their investment in technology over the years. Technically, distinct interfaces are frequently linked to lower costs in the transmission of services or goods (Donbesuur et al., 2020). Earlier studies, however, tend to focus on technology adoption as a global process. Based on industry reports, technology has cross-cutting benefits with a wide range of implications for SMEs. It also contributes to creating a favourable climate for SMEs to engage in international trade (Lecerf & Omrani, 2020).

According Bagheri et al. (2019), technology is significantly correlated with the internationalisation of SMEs. Their study also demonstrated the positive impact of technology on the inclination, resource, information, and network aspects of export activities. Technology simplifies the interaction of a business with a variety of different agents (Mashaly, 2021). Additionally, exporters need a higher degree of coordination between and within firms. This explains why a business that is able to utilise optimally its resources, skills, and expertise through effective communication within its functional units is much more competitive abroad (Chen et al., 2020). Through information technology (IT) processes and systems like relationship management, data warehouses, and data mining systems, technology offers a variety of support for market research to minimise foreign market uncertainty (Berdik et al., 2021). Based on this literature, we predict the following:

H3: Technological advancement significantly and positively contributes to the globalisation of SMEs.

Mediating role of technological advancements

Technology provides the opportunity for social networking that allows individuals or businesses to assemble virtually and share their concerns, knowledge, and experience. It also allows businesses to find their suppliers or customers and maintain relationships with them (Appel et al., 2020). Technology creates a virtual space that can be utilised anytime (Lane & Coleman, 2012). Social networks are vital as instruments to acquire business partners and build partnerships. In this regard, digital communication helps support and maintain the connection with partners/parties living abroad (Chen et al., 2020).

The advantages of innovation for SMEs cannot be understated. Accessibility to quality information such as market intelligence is critical for business performance and development. In this respect, digital innovation is vital for innovating new processes and practices. Thus, technological advancements present vast opportunities for SMEs to achieve growth and innovation which leads higher profits and sustainability. Digital innovation is also widely recognised as the core competence of competitive advantage (Foroudi et al., 2017). Accordingly, we propose the fourth hypothesis as follows:

H4: Technological advancements significantly and positively mediates the relationship between communication and globalisation.

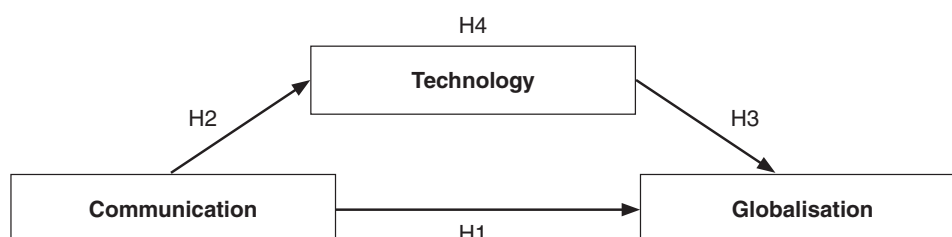


Figure 1. Research framework

RESEARCH METHODOLOGY

Data and measurement

With the aim of gathering data on SMEs' advanced technology and communication in Pakistan, a sample of SME enterprises was randomly chosen from various parts of country. From this sample, a total of 300 CEOs or business owners were selected to participate in the study. Data were collected in two stages through interviews and questionnaires. For the pilot study, the questionnaire was first administered to three business owners chosen at random. Based on the pilot study results and subsequent interviews, minor changes were made to the questionnaire before the actual data collection took place (Presser et al., 2004). In total, a final dataset of 121 valid responses was obtained.

A thorough literature review served as the foundation for the development of the measurement items. A 5-point Likert scale with responses ranging from strongly disagree (1) to strongly agree (5) was used to operationalise and assess the variables. The questionnaire comprised three sections. The first part consisted of questions related to communication, the second part related to advanced technology, and the third part related to globalisation. The scale to measure communication was adopted from Gabbiadini et al. (2020) while for technology, a six-item scale was adopted from Reyna and Meier (2018), and globalisation, a five-item scale from Wach et al. (2018).

Measurement model

The study's structural model was measured, validated, and tested using structural equation modelling (SEM). When including latent variables and testing complicated models, SEM is especially helpful. More precisely, we used the Smart PLS 4.0 software to apply the Partial Least Squares (PLS) SME technique (Ringle et al., 2015). Using the Cronbach alpha (Alpha), composite reliability (CR) index, and average variance extracted (AVE) index, the reliability of the measurements was tested. All the tests produced results that met the evaluation criteria, that is between 0 and 1 for the alpha value, greater than 0.7 for the CR index, and 0.5 for the AVE index. All values fell under the suggested threshold, as presented in Table 1, establishing internal consistency reliability and convergent validity (Hair Jr et al., 2016). Moreover, the values for outer loadings were also greater than 0.70 as shown in Table 1 and Figure 2 (Hair Jr et al., 2014; Henseler et al., 2015).

Table 1. Results for convergent validity

Variables	Items	Loadings	Alpha	CR	AVE
Digital communication	C1	0.839	0.944	0.957	0.819
	C2	0.953			
	C3	0.942			
	C4	0.927			
	C5	0.856			
Globalisation	G1	0.844	0.871	0.907	0.662
	G2	0.884			
	G3	0.817			
	G4	0.741			
	G5	0.773			

Table 1. (con't)

Variables	Items	Loadings	Alpha	CR	AVE
Advanced technology	T1	0.895	0.904	0.928	0.687
	T2	0.883			
	T3	0.921			
	T4	0.882			
	T5	0.750			
	T6	0.597			

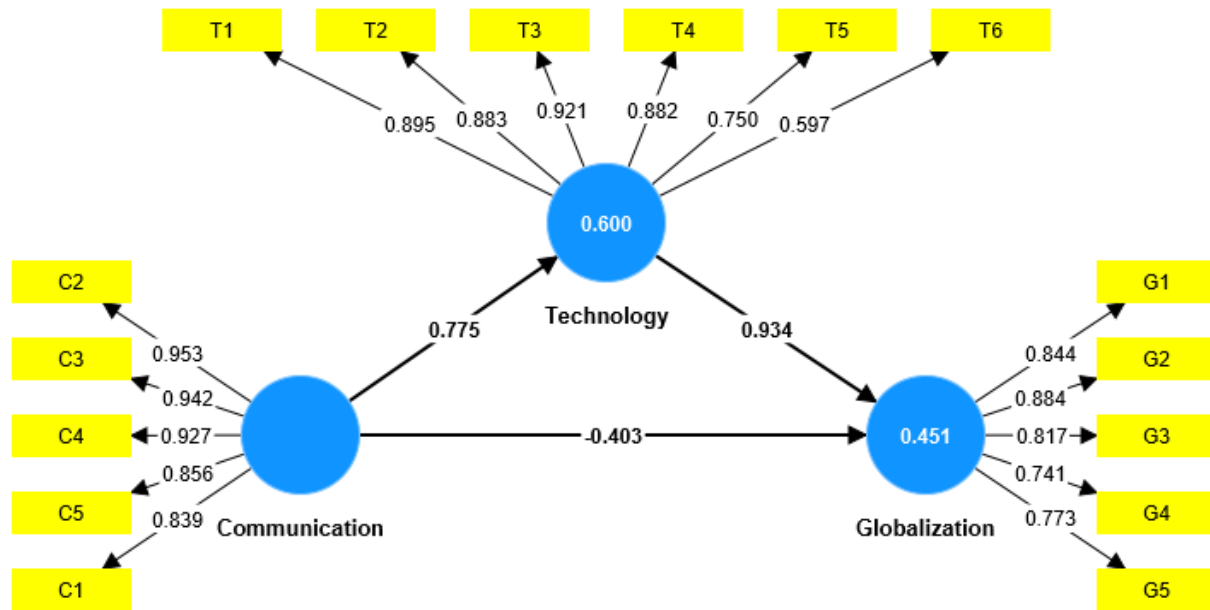


Figure 2. Convergent validity

To test discriminant validity, Heterotrait-Monotrait Ratio (HTMT) was employed (Henseler et al., 2015). If the HTMT value is more than 0.85, discriminant validity is an issue. As all the HTMT values derived were < 0.85, as reported in Table 2, the study’s discriminant validity is established.

Table 2. Heterotrait-Monotrait (HTMT) ratio

	Communication	Globalisation	Technology
Communication			
Globalisation	0.354		
Technology	0.826	0.715	

RESULTS

Generally, correlation analysis is conducted to validate the association between the variables of a study. This analysis shows the extent to which the variables under study are associated with each other (Senthilnathan, 2019). The value of correlation lies between -1.0 and +1.0, where a value of 1 depicts a perfect correlation between the variables. The

analysis results in Table 3 indicate a highly significant positive correlation between the variables under study. The correlation matrix shows that all the variables of the study are strongly correlated with one another.

Table 3. Correlation analysis results

Variable	Communication	Globalisation	Technology
Communication	1		
Globalisation	.756**	1	
Technology	.326**	.648**	1

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

To test the hypotheses, PLS-SEM was employed. We used a complete bootstrapping configuration of 500 subsamples, a mean replacement for missing values, and a one-tailed test for hypothesis testing, to be more precise. The globalisation of SMEs is favourably correlated with communication, as indicated in Table 4, confirming hypothesis H1. Technology and communication are positively correlated, supporting hypothesis H2. The globalisation of SMEs is favourably correlated with technology, supporting hypothesis H3. The mediating effects were examined using the bootstrapping approach. In the context of PLS-SEM, this method is the one most frequently recommended (Hair Jr et al., 2016). Table 4 displays the relationships and the findings of the hypothesis testing. According to the statistical analysis, technology demonstrates a useful mediating role in the relationship between SMEs' globalisation and communication, supporting hypothesis H4.

Table 4. Results of hypothesis testing

Hypothesis	Relationship	B	SD	t value	p value	Decision
H1	Communication → Globalisation	-0.403	0.111	3.618	0.000	Supported
H2	Communication → Technology	0.775	0.052	14.766	0.000	Supported
H3	Technology → Globalisation	0.934	0.107	8.697	0.000	Supported
H4	Communication → Technology → Globalisation	0.724	0.129	5.615	0.000	Supported

DISCUSSION

The results reveal that communication is an essential capability that can support the globalisation of Pakistan's SMEs. In other words, the globalisation of SMEs in Pakistan can be supported by the companies' ability to respond to foreign market trends and innovate their products or services using technology to exploit market opportunities. In the interviews, the respondents emphasised that modern technologies have transformed the way businesses operate and have significantly reduced barriers to international expansion. They mentioned that digital communication channels such as email, video conferencing, and instant messaging have facilitated seamless communication with international clients, reducing time and costs associated with traditional methods. Further, advanced manufacturing technologies have improved production processes, satisfied the requirements of international markets while maintaining quality standards. Another respondent recommended that SMEs develop a clear strategy and understanding of the target market when leveraging digital communication and advanced technologies for

globalisation purposes. Investing in talent, providing the right training, and collaborating with technology partners or consultants were also recommended. Additionally, SMEs are also advised to prioritise data security and privacy by implementing robust cybersecurity measures and complying with relevant regulations.

This study adds on to the growing body of work on the advantages of communication and technology for SME globalisation. The findings establish that the globalisation process of SMEs relies on both communication and advanced technologies. Digital communication serves as a catalyst for the globalisation of SMEs by expanding market reach. Thus, by embracing and leveraging digital communication tools and strategies, SMEs can unlock the benefits of globalisation and thrive in the global marketplace. This finding is consistent with the work of Falahat et al. (2020), which emphasised the association between digital communication and SME internationalisation. Additionally, the results reveal that advanced technologies have a direct significant effect on SMEs' globalisation as they play a transformative role in driving globalisation. The ongoing development and adoption of advanced technologies will continue to shape and accelerate the process of globalisation, facilitating global interactions and cultural exchange on an unprecedented scale. The finding is also consistent with Lecerf and Omrani (2020) who contended that technology plays a role in developing a positive environment for SMEs' participation in global business.

Moreover, our findings demonstrate a significant relationship between communication and technology for Pakistani SMEs, which is consistent with the study of Drezner (2019). In addition, while not all companies may emphasise on digital communication and technology as compared with other capabilities, technology still needs to be prioritised as it plays a crucial role in the globalisation of SMEs (Lebedko, 2014). This could be related to the fact that Pakistani SMEs are more than willing to invest in communication and technology rather than marketing. Advanced technologies act as a mediator between digital communication and the globalisation of SMEs by providing the necessary infrastructure, connectivity, tools, and insights to effectively harness the benefits of digital communication in the global marketplace. It enables SMEs to overcome geographical barriers, improve operational efficiency, enhance customer experiences, and make data-driven decisions, ultimately propelling their globalisation endeavours.

Based on the results of the hypothesis test, regarding the globalisation of SMEs, we succeeded in learning more about the role of entrepreneurs and policymakers in the development of a firm's capacities. The results support the notion that strong technology and communication skills are critical for a successful performance in global marketplaces. SMEs must perform better globally in parallel with initiatives to strengthen their market intelligence and innovative capabilities to boost their growth. Strategies to increase the probability of entering and competing in a foreign market include continuous improvement processes, cost and quality control, and the removal of trivial marketing expenses. Policymakers should plan more capacity-building activities such as seminars, training, workshops or talk sessions with renowned and expert professionals regarding the globalisation of SMEs.

Theoretically, this study offers empirical data on globalisation, communication, and the mediating role of technology in Pakistan's SMEs. Only valuable capabilities, according to the resource-based perspective, can provide a source of competitive advantage. Past literature has demonstrated that communication plays a vital part in developing a competitive edge by giving a company an opportunity to go global. In support of this argument, we looked at whether all necessary abilities are "valuable" for the SME's competitive advantage. This study thus goes one step further to demonstrate the interconnectedness between communication, technology, and the globalisation of SMEs.

LIMITATIONS AND FUTURE DIRECTIONS

As with all studies, the present study too has its own limitations. In considering the basic factors of communication and technology for globalisation, the impact of other potential elements that might be relevant to the process of globalisation of SMEs had not been considered. Second, due to time restrictions, a relatively small sample size of only 121 valid responses was obtained, which could compromise the generalisability of the findings. Third, the study only looked at how strongly communication, technology, and globalisation are related. For future studies, researchers may consider extending the model by studying the effect of employee's innovative behaviour which may contribute to process of globalisation of SMEs. Further, the same model may be adopted for other business sectors as well. Additionally, future researchers can consider making a comparison between exporters with low and high intensities.

Open Access: This article is distributed under the terms of the Creative Commons Attribution License (CC-BY 4.0) which permits any use, distribution and reproduction in any medium, provided the original author(s) and the source are credited.

References

- Appel, G., Grewal, L., Hadi, R., & Stephen, A. T. (2020). The future of social media in marketing. *Journal of the Academy of Marketing Science*, 48(1), 79–95.
- Attaran, M. (2020). Digital technology enablers and their implications for supply chain management. *Supply Chain Forum: An International Journal*, 21(3), 158–172.
- Bagheri, M., Mitchelmore, S., Bamiatzi, V., & Nikolopoulos, K. (2019). Internationalization orientation in SMEs: The mediating role of technological innovation. *Journal of International Management*, 25(1), 121–139.
- Barak, M. E. M. (2022). *Managing diversity: Toward a globally inclusive workplace*. Sage Publications.
- Beck, U. (2018). *What is globalisation?* John Wiley & Sons.
- Berdik, D., Otoum, S., Schmidt, N., Porter, D., & Jararweh, Y. (2021). A survey on blockchain for information systems management and security. *Information Processing & Management*, 58(1), 102397.
- Chaloupkova, P., Petrtyl, M., Verner, V., & Kokoska, L. (2020). Dietary supplements versus functional foods: Consumers' attitudes to their consumption. *British Food Journal*, 122(12), 3853–3868.
- Chen, R. R., Davison, R. M., & Ou, C. X. (2020). A symbolic interactionism perspective of using social media for personal and business communication. *International Journal of Information Management*, 51, 102022.
- Cieslik, J., & Kaciak, E. (2009). The speed of internationalization of entrepreneurial start-ups in a transition environment. *Journal of Developmental Entrepreneurship*, 14(04), 375–392.
- de Bem Machado, A., Souza, M. J., & Catapan, A. H. (2019). Systematic review: intersection between communication and knowledge. *Journal of Information Systems Engineering and Management*, 4(1), em0086.
- Donbesuur, F., Ampong, G. O. A., Owusu-Yirenkyi, D., & Chu, I. (2020). Technological innovation, organizational innovation and international performance of SMEs: The moderating role of domestic institutional environment. *Technological Forecasting and Social Change*, 161, 120252.
- Drezner, D. W. (2019). Technological change and international relations. *International Relations*, 33(2), 286–303.
- Falahat, M., Ramayah, T., Soto-Acosta, P., & Lee, Y.-Y. (2020). SMEs internationalization: The role of product innovation, market intelligence, pricing and marketing communication capabilities as drivers of SMEs' international performance. *Technological Forecasting and Social Change*, 152, 119908.
- Foghani, S., Mahadi, B., & Omar, R. (2017). Promoting clusters and networks for small and medium enterprises to economic development in the globalisation era. *Sage Open*, 7(1), 2158244017697152.

- Foroudi, P., Gupta, S., Nazarian, A., & Duda, M. (2017). Digital technology and marketing management capability: achieving growth in SMEs. *Qualitative Market Research: An International Journal*, 20(2), 230–246.
- Gabbiadini, A., Baldissarri, C., Durante, F., Valtorta, R. R., De Rosa, M., & Gallucci, M. (2020). Together apart: The mitigating role of digital communication technologies on negative affect during the COVID-19 outbreak in Italy. *Frontiers in Psychology*, 11, 554678.
- Giordani, P., Ferraro, M. B., Martella, F., Giordani, P., Ferraro, M. B., & Martella, F. (2020). *Introduction to clustering*. Springer.
- Hair Jr, J. F., Sarstedt, M., Hopkins, L., & G. Kuppelwieser, V. (2014). Partial least squares structural equation modeling (PLS-SEM) An emerging tool in business research. *European Business Review*, 26(2), 106–121.
- Hair Jr, J. F., Sarstedt, M., Matthews, L. M., & Ringle, C. M. (2016). Identifying and treating unobserved heterogeneity with FIMIX-PLS: Part I–method. *European Business Review*, 28(1), 63–76.
- Halim, A., Wiryawan, B., Loneragan, N. R., Hordyk, A., Sondita, M. F. A., White, A. T., ... & Yuni, C. (2019). Developing a functional definition of small-scale fisheries in support of marine capture fisheries management in Indonesia. *Marine Policy*, 100, 238–248.
- Haseeb, A., Xia, E., Saud, S., Ahmad, A., & Khurshid, H. (2019). Does information and communication technologies improve environmental quality in the era of globalisation? An empirical analysis. *Environmental Science and Pollution Research*, 26, 8594–8608.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135.
- Hojdik, V. (2021). Current challenges of globalization in the automotive industry in European countries. *SHS Web of Conferences*, 92, 01015.
- Kanibir, H., Saydan, R., & Nart, S. (2014). Determining the antecedents of marketing competencies of SMEs for international market performance. *Procedia-Social and Behavioral Sciences*, 150, 12–23.
- Katsou, E., Nika, C. E., Buehler, D., Marić, B., Megyesi, B., Mino, E., ... & Atanasova, N. (2020). Transformation tools enabling the implementation of nature-based solutions for creating a resourceful circular city. *Blue-Green Systems*, 2(1), 188–213.
- Lane, M., & Coleman, P. (2012). Technology ease of use through social networking media. *Journal of Technology Research*, 3, 1–10.
- Lebedko, M. G. (2014). Globalisation, networking and intercultural communication. *Intercultural Communication Studies*, 23(1), 28–41.
- Lecerf, M., & Omrani, N. (2020). SME internationalization: The impact of information technology and innovation. *Journal of the Knowledge Economy*, 11, 805–824.
- Mashaly, M. (2021). Connecting the twins: A review on digital twin technology & its networking requirements. *Procedia Computer Science*, 184, 299–305.
- McCalman, J., Paton, R. A., & Siebert, S. (2015). *Change management: A guide to effective implementation* (4th Ed). Sage Publications.
- Musungu, T. W. (2021). *Influence of information communication technology on market access by small and medium-sized enterprises in Trans Nzoia County, Kenya* [Unpublished master's thesis]. Kenya Methodist University.
- Naradda Gamage, S. K., Ekanayake, E., Abeyrathne, G., Prasanna, R., Jayasundara, J., & Rajapakshe, P. (2020). A review of global challenges and survival strategies of small and medium enterprises (SMEs). *Economies*, 8(4), 79.
- Oh, W., & Pinsonneault, A. (2007). On the assessment of the strategic value of information technologies: conceptual and analytical approaches. *MIS Quarterly*, 31(2), 239–265.
- Presser, S., Couper, M. P., Lessler, J. T., Martin, E., Martin, J., Rothgeb, J. M., & Singer, E. (2004). Methods for testing and evaluating survey questions. *Public Opinion Quarterly*, 68(1), 109–130.
- Reyna, J., & Meier, P. (2018). Using the Learner-Generated Digital Media (LGDM) framework in tertiary science education: A pilot study. *Education Sciences*, 8(3), 106. <https://doi.org/10.3390/educsci8030106>
- Ringle, C. M., Wende, S., & Becker, J.-M. (2015). SmartPLS 3. SmartPLS GmbH, Boenningstedt. *Journal of Service Science and Management*, 10(3), 32–49.

Senthilnathan, S. (2019). Usefulness of correlation analysis. Available at SSRN: <https://ssrn.com/abstract=3416918> or <http://dx.doi.org/10.2139/ssrn.3416918>

Wach, K., Głodowska, A., & Maciejewski, M. (2018). Entrepreneurial orientation, knowledge utilization and internationalization of firms. *Sustainability*, 10(12), 4711.

Westerlund, M. (2020). Digitalization, internationalization and scaling of online SMEs. *Technology Innovation Management Review*, 10(4), 48–57.

Muhammad Hasseb Shakil

is a master's student at the Department of Management Sciences, COMSATS University Islamabad Campus and works as Executive Research Operations at the Office of Research, Innovation and Commercialization, Superior University, Lahore, Pakistan.

Nurul Wahidah (Dr)

holds a PhD from Universiti Sains Malaysia and is currently, a senior lecturer at the School of Media and Communication, Taylor's University. She has vast experience in social science research, advertising and new media.

Muhammad Mukarram

is a PhD scholar at the Faculty of Business & Management Science, Superior University, Pakistan and is also the Manager of Capacity Building there. He has been with the university for eight years and has served as lecturer in the Faculty of Business & Management Science for seven years.

Ali Sajjad (Dr)

received his PhD from Universiti Utara Malaysia and served as a lecturer in the Faculty of Business & Management Science, Superior University, Pakistan for seven years. He completed his bachelor's degree and master's degree at Superior University, Lahore, Pakistan and was a Gold Medallist for both studies.

Aqsa Akbar (Dr)

is Assistant Professor in the Department of Management Sciences, COMSATS University Islamabad Lahore Campus, Pakistan. She has vast experience in teaching and research and is also a PhD supervisor, recognised by the Higher Education Commission of Pakistan.
