Social Media Analytics Tool Usage among Tourism SMEs in Tanzania

Shadrack Stephen Madila[1] and Jaffar Msafiri Ponera[2]

[1]ICT department, Moshi Co-operative University, Tanzania
[2]Department of Knowledge Management, Moshi Co-operative University, Tanzania

Email: shadrack.madila@mocu.ac.tz

Abstract

The study investigated the use of social media analytics tools by tourism SMEs in Tanzania. The study deployed quantitative methodology, where questionnaires were distributed among tourism SMEs to gather data for the study. The study collected 71 filled-out questionnaires, which were distributed using a Google survey. The collected questionnaires were analysed using the Python 3.8 statistical package. The findings of the study show the majority of tourism SMEs are not using social media analytics tools in their business operations. The findings of the study also revealed that tourism SMEs in Tanzania encountered technological challenges, such as the volume of data, variety of data, and analytical skills. Organisational challenges such as a lack of guidelines and, finally, environmental problems such as inadequate infrastructure and knowledge of social media platforms were identified. The study recommends that stakeholders in tourism SMEs provide training about SMA to tourism SMEs as well as improve ICT infrastructure.

Keywords: Social media, analytics tool usage, tourism SMEs, Tanzania

1. Introduction:

Social media analytics (SMA) became the basic technology for understanding and getting insights into social media data. In Tanzania, tourism SMEs are among the sectors that contribute much to the gross domestic product of the economy and are the source of many jobs. The sector is performed primarily by small and medium-sized enterprises, of which the majority uses social media in their business activities. Tourism is considered one of the world's largest industries (Melovic, 2022). It is the greatest source of employment and wealth (UNWTO, 2020). In Tanzania, tourism is a crucial sector that generates foreign exchange and creates many jobs (Kara & Mkwizu, 2020). Tourism provided more than 25% of the country's total exports, 60% of service receipts, and 12% of employment in 2017 (Charles, 2018). Most of the tourism service operators are small and medium-sized enterprises (SMEs) (David & Musabila, 2021).Tourism SMEs include all small businesses that provide services to tourism, such as hotels, tour operators, travel agencies, and airline operators (Wardati & Mahendrawathi, 2019). Tourism SMEs are using different social media platforms in their business activities (Ndekwa & Katunzi, 2016). These social media platforms produce data that comes from diverse sources, such as chats, forums, media sharing, and mixture applications, which generate massive amounts of noisy, distributed, structured, and unstructured dynamic data that are difficult to understand (Madila et al., 2022).

Social media analytics (SMA) is concerned with the usage of analytical frameworks and tools to collect, summarise, analyse, and interpret social media data to extract patterns and insights from it (Xiang et al., 2016). Social media analytics is applied in different fields, including politics, business, tourism, and hospitality (Madila et al., 2021). Several studies have reported on the usage of SMA in the tourism and hospitality fields. In 2017, Chang et al. carried out research on SMA in hotels and restaurants. The study put forth a strategy for using trip advisor customer evaluations to conduct sentiment analysis. According to Xiang et al. (2016), social media analytics can be used to gather market information for hotels. The study used data from Twitter's social media to do sentiment analysis to gain insight into market intelligence. Another study by Park et al. (2016) uses sentiment analysis on the Twitter social media platform to use SMA to study the emotions of restaurant patrons in Asia. Berezina et al. (2015) use sentiment analysis to identify satisfied and dissatisfied customers of the hotel using hotel reviews from social media platforms and identify the areas where they are satisfied or not satisfied. Adopting and using SMA tools and technologies shows a positive benefit to tourism SMEs (Madila, 2022). However, SMEs are facing several challenges during the use of this technology. This study aims to find out the challenges that tourism SMEs are facing in Tanzania with the use of SMA tools.

2. Literature Review

2.1 Social media analytics

The increase in social media usage has led to the generation of massive amounts of social media data, which are in different formats, including text, images, and voices (Wardati & Mahendrawathi, 2019). Social media analytics is the approach to assembling social media data from different social media platforms and evaluating and analysing it to get insight (Hayat et al., 2019). The process of gathering and evaluating data from social media platforms to assist decision-makers in tackling certain issues is known as social media analytics. Among others, social scientists, business managers, and medical professionals use them (Lee, 2017). Analysing social media data is advantageous for the organisation to manage business activities like public relations, customer relations, and business intelligence (Stieglitz, 2014). These SMA tools are used in different fields, including politics, health, agriculture, and natural disasters. (Holsapple, 2014) identified different techniques that are applied for SMA; these techniques include sentiment analysis, opinion mining, topic modelling, trend analysis, and visual analytics. In the tourism sector, SMA is applied by SMEs like hotels and restaurants, tour guide operators, and airline operators. Lee (2017) affirms that compared to traditional media analysis, which frequently involves human data collection and labour-intensive analysis, automated social media analytics is less expensive and faster.

2.2. Uses of Social Media Analytics in Tourism Sector

Tourism SMEs such as hotels, restaurants, tour guide operators, and other tourism industry companies use social media analytics to assist them in making business decisions and managing their social media campaigns. Several studies describe the use of SMA in tourism SMEs. According to Kordzadeh and Young (2020), businesses can utilise analytics frameworks to find out what users are saying about them and their competitors. Park *et al.* (2018) investigated the use of SMA tourist communication amid emergencies. During crises, social media managers watch community members remarks and respond to their customers. Park et al. (2016), He et al. (2017), and Berezina et al. (2015) employed the sentiment analysis social media technique. Park et al. (2016) examined the emotions of restaurant patrons in Asia using SMA. The study used sentiment analysis on the social media platform Twitter. He et *al.* (2017) demonstrated SMA in the execution of tourism comments from various hotels using sentiment analysis for trip advisors. Berezina et al. (2015) used sentiment analysis to distinguish satisfied and dissatisfied hotel customers via hotel social media platforms, as well as the precise areas in which they are satisfied or not. Flores-Ruiz et al. (2021) use sentiment analysis of Twitter data to identify tourists during the COVID-19 epidemic. Geetha et al. (2017) employ the linear regression method to generate changes in hotel customer

evaluations. The study also makes predictions based on sentiment polarity. Another study, Gao et al. (2018), uses SMA to undertake competitive analysis, identifying rivals through text mining and sentiment analysis. According to surveys, tourism SMEs are among those who employ this technology in their commercial operations.

According to Tam and Jeong-Nam (2019), one of the challenges in utilising SMA is that social media platforms like Facebook, Instagram, and Twitter are progressively limiting access to their data by third parties. Additionally, these systems are unable to reliably collect and interpret visual data, including images and videos. SMA is responsible for creating and evaluating frameworks and informatics tools that gather, track, analyse, summarise, and report (visualise) the particular social media data of a customer or target audience. The difficulty, therefore, lies in analysing the vast amount of data and user-generated material and determining the audience-user correlation in order to extract relevant information from user opinions, attitudes, trends, and challenges (Ayodeji & Kumar, 2019).

3.   Technology, Organization and Environment Model

The TOE framework is applied to explain the factors that influence an organisation's decision to adopt an ICT innovation. The TOE factors are the technology, the organisational, and the environment factors (Masana & Muriithi, 2018). Technology factors refer to the agility of an organisation, which depends on the availability of resources to explore the potential of desired ICT innovation. These include ICT infrastructure, technological skills, and compatibility. Organisational factors are those related to how internal resources are used. These include the size of an organisation, the organisation structure, and support from organisation executives. The environmental factors are those that surround the environment within which an organisation operates; these factors are related to market forces, pressure from competitors, and regulation from the government (Raed *et al.,* 2021). Several researchers use the TOE framework to determine the challenges of adopting ICT innovation in developing countries. Awa *et al.* (2015) and Nazir et al. (2022) use the TOE framework to find out the challenges of e-commerce adoption. The TOE framework was also used by Amoah et al. (2023) to find out factors affecting the adoption of social media by SMEs in Ghana. Hence, based on those applications of TOE, the study finds that it is appropriate to use TOE to find the challenges of using social media analytics tools among tourism SMEs in Tanzania.

4.   Method and Materials

This study used quantitative methodology to examine the challenges of using SMA tools among tourism SMEs in Tanzania, using the Kilimanjaro and Arusha regions as the case studies. The two regions were chosen because of the high number of tourism SMEs compared to other regions of Northern Tanzania. Questionnaires were distributed to the managers and owners of tourism-related SMEs using a Google survey because this study was conducted during the outbreak of COVID-19. A total of 71 tourism SMEs were selected for the study, and questionnaires were distributed to be filled out. The complete distribution of the collected questionnaires was 1 airline operator, 23 tour guide operators, 26 travel agents, and 21 hotels and restaurants. The collected questionnaires were analysed using the Python statistical analysis tool. Data were presented in the form of tables, frequencies, and percentages.

5. Results

The study employs the TOE framework to examine the use of SMA by tourism SMEs'. The findings of the study are presented in the next sub-sections.

The findings of the study revealed that the majority of tourism SMEs were not using SMA analytics in their business operations; this was indicated by 52 (73%) of the respondents, while minority tourism SMEs 19 (27%) reported that they were using SMA tools in their business operations, as shown in Table 1.

Usage of SMA	Number of respondents	Percentage
Yes	19	27%
No	52	73%
Total	**71**	**100**

(i) Technological factors

The following technological factors were assessed among tourism SMEs: volume of data, variety of data, velocity of data, and analytical challenges. The respondents selected multiple factors of challenges that affect their adoption and usage of SMA tools by tourism SMEs. The findings reveal that 83% of respondents selected volume of data as a challenge for their adoption and use of the SMA tool, 66% selected variety of data, 59% selected velocity of data, and the remaining 84% selected analytical challenges as the obstacle to using the social media analytics tool.

Table 2: Technological factors

Technological factors	Number of respondents	Percentage
Volume of data	59	83%
Variety of data	47	66%
Velocity of data	42	59%
Analytical challenges	60	84%

(ii) Organisation factors

The study examined the organisational factors that affect tourism SMEs usage of social media analytics tools. organisational factors such as lack of resources, organisation culture, and lack of guidelines The findings revealed that 70% of the respondents mentioned lack of resources as the challenge for adoption and usage of social media analytics tools, and 80% mentioned organisational culture as their challenge in adopting and using social media analytics. Lastly, 78% said that the lack of guidelines for using social media analytics tool was the challenge for them.

Table 3: Organizational factors

Organizational factors	Number of respondents	Percentage
Lack of resources	50	70%
Organizational culture	57	80%
Lack of guidelines	56	78%

(iii) Environmental factors

Table 4: Environmental factors

Environmental factors	Number of respondents	Percentage
Infrastructure failure	61	86%
Knowledge of the social media platforms	25	35%
Platform acceptance	21	29%

The environmental factors that affect the adoption of SMA were identified in this study. The findings revealed that 86% of the respondents are facing challenges in adopting SMA applications due to infrastructure failure, 35% of the respondents are having challenges due to their knowledge of social media platforms, and 29% of the respondents mentioned that platform acceptance is a challenge for tourism SMEs to use SMA in their activities.

6. Discussion

The findings of the study demonstrated that Tanzanian SMEs engaged in tourism did not use the SMA tool very often. The SMA tool was only used by a few tourism SMEs, and it was mainly used for client communication and marketing. Madila et al. (2022) found similar results, indicating that tourism SMEs used the SMA tool to get feedback from clients and to brand, advertise, and promote their businesses in addition to keeping and acquiring new customers. According to the study's findings, managers of tourism-related SMEs may delay making well-informed decisions if they don't use the SMA tool because such analytics tools can speed up the analysis compared to manual techniques of analysing data. This indicates that using and adopting the SMA tool is necessary for Tanzania's tourist SMEs to stay competitive. There are still obstacles preventing SMEs from using the SMA tool, although it has many advantages for the development of tourist SMEs and the Tanzanian tourism industry. Three categories apply to these challenges: organisational, environmental, and technical. The study found that on technological aspects, most of the tourism SMEs are facing challenges associated with analytical skills, large volumes of data, and a variety of data. This implies that the large amount of data that tourism SMEs are receiving for SMA from different social media, such as pictures, voice, and text, has caused challenges for tourism SMEs to conduct analysis in order to get insight from social media data because of their inadequate analytical skills. These findings are in line with the study conducted by Stieglitz et al. (2018), which found that the volume of data and variety of those data are the main technological challenges for using the SMA tool. The findings of the study suggest that for tourism SMEs in Tanzania to remain sustainable in their business, they should harness the use of technology, such as the use of SMA tools, which may help them perform proper analysis, which may in turn enable business managers to make the right decisions. This can only be achieved by employing competent ICT personnel capable of using social media analytics tools to analyse a variety of data generated from social media platforms such as Twitter, Facebook, Instagram, Wikis, and many others that are in use.

The organisational challenge was also investigated, and the findings show that the majority of the respondents' claimed that organisational culture was among the challenges to adopting SMA in their social media campaigns. This implies that although SMA tools are used by a small number of tourism SMEs in Tanzania, a lack of organisational culture for using such analytics tools in analysing data is a major challenge because some tourism SMEs in Tanzania are still relying on manual techniques for analysing data generated from social media, which takes more time to generate reports than the use of SMA tools. The study also identified the lack of guidelines as a challenge in using the SMA for tourism SMEs. Similar findings were observed in a study by Madila et al. (2022), which found that the majority of tourism SMEs don't have any guidelines in place to manage SMA tool usage. The use of SMA tools needs to be guided by policies, procedures, and guidelines, which should clearly stipulate the standards and procedures for SMA tool usage. Hence, the absence of a guiding tool has impacted the use of the SMA tool among tourism SMEs in Tanzania.

The findings of the study further established that, due to environmental challenges, there was inadequate infrastructure that affected the use of the SMA tool by tourism SMEs in Tanzania. The use of social media analytics requires adequate ICT facilities, such as data analysis software, tools for data analysis, and the availability of reliable internet connectivity. The absence of the required facilities has affected the use of SMA tools in analysing data generated from social media. This implies that the ICT infrastructure of many tourism SMEs is not appropriate to use the SMA tool. The findings of the study also established that lack of awareness of various social media platforms where data can be generated is another challenge affecting the use of SMA tools by tourism SMEs in Tanzania. The findings deduced from this study are that for tourism SMEs to use SMA tools, there is a need for employees to understand various social media platforms that are currently in use and their appropriate data analytics tools and software.

Conclusion

The findings of the study revealed that there was low usage of the SMA tool by tourism SMEs in Tanzania. Although the use of such analytics tools is limited to a small number of tourism SMEs in Tanzania, they have proven to be useful in facilitating communications with current and prospective customers. The use of SMA has also enabled managers to make decisions based on the information that was generated from the data that was received from various social media sites. The findings of the study also noted various technological, organisational, and environmental challenges encountered by tourism SMEs in Tanzania. Technological factors that affect the usage of SMA by tourism SMEs are caused by volume and variety of data, and the most challenges were caused by analytical challenges. Organisational challenges in the use of SMA tools included a lack of organisational culture for using SMA tools and the absence of guidelines and procedures to guide the use of SMA tools. The study established various environmental challenges, such as inadequate infrastructure and a lack of awareness of various social media platforms that are currently in use by customers.

The study has contributed to providing current technology, organisation, and environmental factors affecting the usage of SMA tools by tourism SMEs in Tanzania. The study concluded that the usage of SMA tools has positive benefits for tourism SMEs, including enabling business managers to make informed decisions to ensure the sustainability of the business, regardless of the challenges from technology, organisation, and environment. The study recommends that stakeholders in tourism SMEs, such as the government, NGO, and other organisations, provide knowledge about SMA to tourism SMEs as well as improve ICT infrastructure to improve the application of ICT services to tourism SMEs.

REFERENCES

Amoah. J., Bruce. E., Shurong. Z., Bankuoru, S. & Kwarteng, K. (2023) Social media adoption in SMEs sustainability: evidence from an emerging economy. *Cogent Business & Management,* 10 (1). https://doi.org/10.1080/23311975.2023.2183573

Awa, H.O., Ojiabo, O.U. & Emecheta, B.C. (2015), Integrating TAM, TPB and TOE frameworks and expanding their characteristic constructs for e-commerce adoption by SMEs. *Journal of Science and Technology Policy Management,* 6(1), 76-94. https://doi.org/10.1108/JSTPM-04-2014-0012

Ayodeji, O.G. & Kumar, V. (2019). Social media analytics: a tool for the success of online retail industry. *International Journal Services Operations and Informatics,* 10(1), 79-95.

Berezina, K., Bilgiham, A., Cobanoglu, C. & Okumus, F. (2015). Understanding satisfied and dissatisfied hotel customers: Text mining of online hotel reviews. *Journal of Hospitality Marketing and Management,* https://doi.org/10.1080/19368623.2015.983631

Charles, G. (2019). Coordinating regulatory agencies for improved tourism policy in Tanzania. *Journal of Hospitality and Tourism Insights*, 2(1), 2-17. https://doi.org/10.1108/JHTI-08-2018-0049

David, M. & Musabila, A. (2021). E-commerce usage and performance of small and medium tourism enterprises in Tanzania. *East African Journal of Social and Applied Sciences,* 3(2), 88-105. https://doi.org/10.2023/eaj-sas.v3i2.128

Gao, S., Tang, O., Wang, H. & Yin, P. (2018). Identifying competitors through comparative relation mining of online reviews in the restaurant industry, *International Journal of Hospitality Management,* 71, 19-32. https://doi.org/10.1016/j.ijhm.2017.09.004

Geetha, M., Singha, P. & Sinha, S. (2017).Relationship between customer sentiment and online customer ratings for hotels-an empirical analysis. *Tourism Management*, 61, 43-54. https://doi.org/10.1016/j.tourman.2016.12.022

Hayat, M. K., Daud, A., Alshdadi, A. A., Banjar, A., Abbasi, R. A., Bao, Y., & Dawood, H. (2019). Towards deep learning prospects: Insights for social media analytics. *IEEE Access*, 7 https://doi.org/10.1109/access.2019.2905101

He, W., Wang, F.K. & Akula, V. (2017). Managing extracted knowledge from big social media data for business decision making. *Journal of Knowledge Management*, 21 (2), 275-294. https://doi.org/10.1108/JKM-07-2015-0296

Holsapple. C., Hsiao. S. & Pakath. R (2014) Business social media analytics: definition, benefits and challenges, 20th Americas Conference on Information Systems, AMCIS 2014 - Savannah, GA, United States

Kara, N.S. & Mkwizu, K.H. (2020). Demographic factors and travel motivation among leisure tourists in Tanzania. *International Hospitality Review*, 34(1), 81-103. https://doi.org/10.1108/IHR-01-2020-0002

Kordzadeh, N. & Young, D.K. (2020). How social media analytics can inform content strategies. *Journal of Computer Information Systems. https://doi.org/10.1080/08874417.2020.1736691*

Lee, I. (2017). Social media analytics for enterprises: typology, methods, and processes. *Business Horizons.* https://doi.org/10.1016/j.bushor.2017.11.002

Madila, S. S., Dida, M. A. & Kaijage, S. (2021). A review of usage and applications of social media analytics. *Journal of Information Systems Engineering and Management*, 6(3), em0141. https://doi.org/10.21601/jisem/10958

Madila, S. S., Marwa, J., Dida, M. A., & Kaijage, S. (2022). Tourism SMEs usage of social media analytics as their business intelligence tool. *International Journal of Advances in Scientific Research,* 8(1), 86-95. https://doi.org/10.31695/IJASRE.2022.8.1.10

Masana, N., Muriithi, G.M. (2018). Investigating TOE factors affecting the adoption of a cloud-based EMR system in the Free-State, South Africa. http://dx.doi.org/10.1007/978-3-319-67837-5_23

Melović, M., Baynazoğlu, M.E.*,* & Šerić, N. (2023), "Family businesses in tourism – the use of digital technologies in times of uncertainty and crisis", *Journal of Family Business Management*, 13(1), 185-209. https://doi.org/10.1108/JFBM-06-2022-0086

Nazir, M.A., Roomi, M.A., & Khan, M. R. (2022) Challenges of E-commerce adoption experienced by Pakistani SMEs: a qualitative analysis. *International Review of Entrepreneurship,* 20(3), 447-476.

Ndekwa, A.G. & Katunzi, T.M. (2016). Small and Medium Tourist Enterprises and Social Media Adoption: Empirical Evidence from Tanzanian Tourism Sector. *International Journal of Biometrics, 11*, 71. https://doi.org/10.5539/ijbm.v11n4p71

Park, D., Kim, W.G. & Choi, S. (2018). Application of social media analytics in tourism crisis communication. *Current Issues in Tourism.* https://doi.org/10.1080/13683500.2018.1504900

Park, S., Bang, J. & Ok., C.M. (2016). Analyzing Twitter to explore perceptions of Asian restaurants. *Journal of Hospitality and Tourism Technology,* 7(4), 405-422. https://doi.org/10.1108/JHTT-08-2016-0042.

Raed. A , Abdullah, A.R.B., Azmawani. A.R. & Ali, M.H. (2021). Challenges and obstacles facing SMEs in the adoption of e-commerce in developing countries; A case of Saudi Arabia. *Estudios de Economica Aplicada*. 39(4). http://dx.doi.org/10.25115/eea.v39i4.4644

Stieglitz, S, Mirbabaie, M., Fromm, J. & Melzer, S. (2018). The Adoption of social media analytics for crisis management – challenges and opportunities. *Twenty-Sixth European Conference on Information System (ECIS2018), Portsmouth, UK.*

Tam, L. & Jeong-Nam, K. (2019). Social media analytics: how they support company public relations. *Journal of Business Strategy,* 4(1), 28-34.

UNWTO (2020), UNWTO World Tourism Barometer, UNWTO, Madrid, (18), 2. https://www.e-unwto.org/doi/abs/10.18111/wtobarometereng.2020.18.1.2.

Wardati, N. K., & Mahendrawathi, E. R. (2019). The impact of social media usage on the sales process in small and medium enterprises (SMEs): A systematic literature review. *Procedia Computer Science*. 161, 976-983. https://doi.org/10.1016/j.procs.2019.11.207

Xiang, Z., Schwartz, Z., & Uysal, M. (2016). Marketing intelligence: social media analytics and hotel online reviews. *Tourism on the Verge,* 281-295. https://doi.org/10.1007/978-3-319-44263-1_16