Tourism SME's Adoption of Social Media Analytics Tools and Technology

Shadrack Stephen Madila*
School of Computational & Communication Science and Engineering (CoCSE), Nelson Mandela African Institution of Science and Technology (NM-AIST), Department of Information Communication Technology, Moshi Co-operative University (MoCU), Email,
shadrackm@nm-aist.ac.tz

Mussa Ally Dida
School of Computational & Communication Science and Engineering (CoCSE), Nelson Mandela African Institution of Science and Technology (NM-AIST), Email,
mussa.ally@nm-aist.ac.tz

Shubi Kaijage
School of Computational & Communication Science and Engineering (CoCSE)
Nelson Mandela African Institution of Science and Technology (NM-AIST), Email,
shubi.kaijage@nm-aist.ac.tz

*Corresponding Author

Abstract

The study analysed the current state of the adoption of social media analytics (SMA) technology and tools to tourism small and medium enterprises (SME) in Tanzania and to understand the factors which influence the adoption of SMA tools to tourism SMEs. SMA became the basic technology in understanding and getting insight into social media data. Tourism SMEs are among the users of social media platforms. The researcher carried out the survey in Arusha and Kilimanjaro regions to determine the current state of the adoption of SMA to tourism SMEs. The technology, organization and environment (TOE) framework has been used to determine the factors that contribute to the adoption of SMA. The study finding shows that many tourism SMEs are using social media in their business activities however the adoption of SMA is very low, majority of the SMA are not adopting and using SMA. Technology, organization and environmental factors seem to allow the adoption of SMA to tourism SMEs. The study contributes to the research body of knowledge on the current status of adoption of SMA to tourism SMEs and managerial contribution on the factors to determine when tourism SMEs wants to adopt SMA.

Keywords: social media, social media analytics, TOE, tourism and SMEs

Introduction

Social media analytics (SMA) is defined as the usage of tools and frameworks for collecting, monitoring, analysing, summarizing and visualizing social media data to extract useful patterns to provide intelligence (Fan & Gordon, 2014). As the number of users of social media increases, it also increases business organizations and SMEs to increase the utilization of social media platforms to interact with their customers. Social media provides structured data and unstructured data, SMA is conducted to analyse both structured and unstructured data by using techniques such as machine learning models, web crawling, linguistic data to get an insight into the various issue including sentiment opinion and geographical information (Madila et al., 2021). SMA is performed using tools obtained in social media platforms like Facebook analyser, Twitter analyser and Instagram insight or by using independent commercial tools.

Small and medium enterprises (SMEs) can use SMA to get useful information from different business departments within, these include the sales department, marketing department, customer relation, product development department as well as public relation department. SMA can provide customer insight based on their needs and preferences, capturing the performance of their product promotions, obtaining customer feedback on their services and products as well as viewing their market trend data (Ruhi, 2014).

Among the SMEs which are utilizing SMA in their business operations are tourism SMEs. Tourism SMEs are small business firms that operate within the tourism sector, firms like hotels, tour operator services, travel agents, restaurants and airline operators (Mosweunyane et al., 2019). Several studies describe the usage of SMA in tourism, Mirzaalian and Halpenny (2019) found that SMA can be used by tourism SMEs to find out text analysis and sentiment analysis, topic modelling, to check the trend, conduct predictions, perform social network analysis, to obtain spatial data analysis as well as comparative analysis. SMA became the basic activity in understanding social media data for SMEs, however little is known regarding the status of the adoption of SMA for SMEs in Tanzania. This study shed light on the adoption of SMA to SMEs, particularly on tourism SMEs in Tanzania. The study aimed at finding out the current status of the adoption of SMA tools and technology to tourism SMEs. The research question is, what are the factors which determine the adoption of SMA technology and tools to tourism SMEs in Tanzania.

In order to understand the factors, that determine the adoption of the SMA to tourism SMEs the study uses the TOE framework. The TOE frame has three factors which are technology, organization and environment. The TOE framework is the suitable model used to explain and explore how organizations and SMEs can adopt new technologies (Ur Rahman et al.,2020). This framework will help to understand how these factors influence the adoption of new technologies to tourism SMEs. This assessment of adoption status can help these firms to identify the available technology solutions which most are lacking, it can also provide policymakers with primary knowledge in order to formulate policies related to technology and design tailor-made programs for tourism SMEs regarding new useful technology (Bharati & Chaudhury, 2006).

Literature review
SMEs ICT technology adoptions
The adoption of ICT technologies for small and medium-sized enterprises brought many advantages as it helped in lowering production and Labour cost, added value to the products and services and also it increased the companies' competitive advantages (Nguyen, 2009). Several ICT technologies have been adopted and used by SMEs. Some of the scholarly works which explain the adoption of technologies to SMEs are; Alshamaila et al. (2012) investigate the cloud computing adoption. Al Ghamdi et al. (2012) gives the factors influencing e-commerce adoption in Saudi Arabia retailers, El-Gohary (2012) studies e-marketing adoption among tourism SMEs firms in Egypt and Al Sharji et al. (2018) studies the adoption of social media among SMEs in the United Arab Emirates.

Social media and social media analytics tourism SMEs usage
There are some studies that analyse and highlight the application of SMA for tourism SMEs however these studies are from developed countries. The study conducted by Chang et al. (2017) introduces the framework which will guide the process of conducting sentiment analysis of hotel reviews from TripAdvisor. Park et al. (2016) find the thought and emotions of Asian restaurant clients by conducting sentiment analysis of their social media platform, the study collected customer tweets and perform sentiment analysis to find either customers who have

negative or positive thoughts and emotions. Von Hoffen et al. (2019) conducted sentiment analysis to find the insight from the customer tweets which explain customer perception of the services provided by the online market for accommodation specific on Airbnb. Navaro and Rodriguez (2019) collected Facebook and Instagram data and build a tool that analyzed the data and provide insight on budget accommodation in tourism regions. The study explains how social media data can be used by tourists to find budget accommodation.

Technology-organization-environment framework

The TOE framework was developed by Tornatzky et al. (1990) for studying the adoption of IT technologies in organizations including SMEs. The TOE framework is most suitable to understand the technology adoption at the organization level (Oliveira & Martins, 2011). The TOE framework has been used to study the adoption of technologies in developed countries and developing countries. TOE has been used to investigate the adoption of several technologies, Parveen (2012) used the TOE framework to explain the factors influencing the adoption of social media in Malaysia. Gangwar et al. (2015) used TOE to investigate the adoption of cloud computing. Wen and Chen (2010) applied TOE framework to study the adoption of e-business and Stieglitz et al. (2018) employed TOE model to study the adoption of social media analytics for crisis management. The adoption theories are used to explain, understand or predict the adoption of a given technology. In this study, TOE framework is used to understand the factors which influence the adoption of SMA technology to tourism SMEs

Methodology

A survey was conducted to examine the study research questions. Qualitative and quantitative data were collected using semi-structured open-ended questionnaires and interviews with the tourism managers and owners. The interviews and open-ended questionnaires were used because they allow freedom and adaptability to obtain information from the interviewees (Alkhalil et al., 2017). The data collection process took three months. It all started with the pilot study. A total of 71 tourism SMEs has been interviewed in Arusha and Kilimanjaro regions. The distribution of tourism SMEs interviewed were 1 airline operator, 23 tour guides operator, 26 travel agents and 21 hotels and restaurants. Arusha and Kilimanjaro were selected as study areas because of their richness in tourism SMEs in Tanzania. Many tourism SMEs have their offices in Kilimanjaro and Arusha regions. Kilangi (2012) established a population of 152 tourism SMEs in Arusha and Kilimanjaro. Significantly, there is no study conducted in this area on the topic of social media analytics. The study employed purposely sampling to select respondents, Interviewed SMEs are those who utilize social media in their business activities. The study distributed 85 online questionnaires using google forms and 40 printed questionnaires. 20 printed questionnaires were returned and 51 respondents submitted the online questionnaires. The online google forms were used based on the situation during data collection, data collection were conducted during the Covid 19 pandemic. The collected data were coded and analyzed by using statistical tools (python and Microsoft excel) using descriptive statistics like percentages and frequencies.

Study findings

Tourism SMEs and respondents' information

The study desired to understand the types of the tourism organization, the organization head office, respondent's position in the organization and the respondent's education level. The tourism SMEs were hotels/restaurants 21, travel agents 26, tour guide operator 23 and one (1) air operator. 35 tourism SMEs have their head office in Arusha and 36 tourism SMEs are from Kilimanjaro. 18 interviewed tourism SMEs working as operational managers, 5 respondents

were owners of the tourism SMEs, 1 respondent was reservation manager, 1 respondent was general manager, 15 were managing directors, 25 respondents were sales and marketing managers, 3 respondents were IT managers and 3 financial managers. Respondent's education profile presents 3 master's degrees, 61 bachelor's degrees, 1 respondent certificate in tourism, 3 respondents they have advanced secondary school certificate and other 3 respondents they have ordinary secondary school certificate.

Tourism SME's social media use

During the survey, the study examined what kinds of social media platforms these tourism SMEs are using in their business activities. Finding from the study revealed that many tourism SMEs use more than one platform. The majority of the tourism SMEs have a presence in Facebook social media platform 69 which is 97.18%, followed by Instagram 63 equal to 88.73%, Twitter is used by 28 tourism SMEs which is 39.43%, 15 tourism SMEs are using google+ equals to 21.12% and 8 tourism SMEs they have a presence in Linkedin which is 11.26%. The findings are summarized in Table 1 below.

Table 1. Social media platforms used by tourism SMEs

Social media Platform	Frequency	Percentage
Facebook	69	97.18%
Instagram	63	88.73%
Twitter	28	39.43%
Google+	15	21.12%
Linkedin	8	11.26%

Tourism SME's adoption of social media analytics

The study wanted to find out the number of tourism SMEs who adopted social media analytics and uses SMA tools to find insight into their social media platforms. In determining this the respondents were asked if they perform SMA or not in their social media platforms and social media campaigns., 19 tourism SMEs respondents equal to 27% said YES, they are performing SMA in their social media platforms and the remaining 52 tourism respondents equal to 73% said NO they are not performing SMA. This result shows that only a few tourism SMEs adopt and use SMA tools in their social media platforms

Tourism SMEs intent to adopt SMA

The study was also conducted with a view of establishing whether SMEs which have not adopted SMA have the intention of adopting it. All 52 non SMA adopters responded to the question with different views. The majority of the respondents have the intention to adopt and use the SMA tools in their social media platforms, these are 37 tourism SMEs equal to 71% of the total tourism SMEs. Another 12 tourism SMEs, which is 23%, are not sure that either they will adopt or not, and the remaining 3 tourism SMEs equals 6% they don't have the intention to adopt and use SMA tools in their social media platforms. The respondent's responses are thus summarized in the figure below.

Expected time for tourism SMEs to adopt SMA

The study inquired on the time when tourism SMEs which have not adopted SMA could do so. The results on the expected time for tourism SMEs to adopt social media analytics shows that the majority of the tourism SMEs will adopt the use of SMA in less than a year, 13 tourism SMEs which is 25% they responded that they will adopt social media analytics in less than six (6) months and 27 tourism SMEs equals to 52% they will adopt SMA in between six months to 12 months, while the minority number 12 tourism SMEs mentioned that they will adopt

SMA in the period which is more than a year. This shows that many tourism SMEs will be expected to adopt SMA in a few months. These findings are presented in the figure below.

Tourism SMEs technology compatibility on adopting SMA

The study examined the effect of the tourism SMEs technology compatibility on the adoption of SMA. In this question the study expected views on the technology they have and the compatibility of adopting and using SMA to find insight on their social media platforms; this was done to the 52 tourism SMEs who are non-adopters of the technology. The findings show that there is compatibility on the tourism SMEs technology used and the adoption of SMA tools, as the majority of the respondents agreed. 63% of the tourism SMEs and non-SMA adopters responds was that the technology is compatible to adopt SMA, 31% of the respondents agreed that the technology is very compatible while the remaining 6% are not sure that the technology is either compatible or not compatible. Results show that there is compatibility between the adoption of SMA and the technology used by tourism SMEs. One of the respondents during the interview said "actually our firm has all the infrastructure need to conduct SMA if we could know this technology before we could be among the implementers of SMA". The findings on technology compatibility with SMA are thus summarized in the figure below.

How employees of tourism will influence the adoption of SMA

The respondents have been asked how their employees will influence the adoption of the SMA in their firms. Those 52 non-SMA adopters responded to the question of their employees will influence their decision to adopt and use SMA tools to find insight on their social media platforms. Table 2 below shows the respondents' results, were 1 respondent which is 2% mentioned that the employees they influence very much the adoption SMA, 11 respondents 21% mentioned that they influence, 37 respondents equal to 71% says that their employees don't influence the adoption of SMA and 3 respondents equal to 6% responded that they don't know if their employees will influence or not. The summary of the results shows that the majority about 70% are not influenced by their employees on the adoption of SMA.

Table 2. How employees influence the adoption of SMA

Response	Frequency	Percentage
Influence very much	1	2%
They influence	11	21%
They don't influence	37	71%
I don't know	3	6%

Readiness of tourism SMEs top management to support employees to conduct SMA

The respondents were asked to state the readiness of their top managers to support their employees to conduct SMA to find insight on their social media platforms. 52 tourism SMEs non-adopters of SMA respond to the question on the top managers' readiness to support the employees on SMA usage. 15 tourism SMEs equal to 29% are neutral in responding to the top managers' readiness to support their employees on SMA usage, 36 tourism SMEs respondents which are about 69% said that the top managers are ready to support employees on SMA usage and the remaining 1 respondent which is 2% mentioned that the top managers are not ready to support employees to conduct SMA. These results show that managers are ready to support their employees on the SMA adoption and usage. The results are presented in the figure below.

Tourism SME's competitiveness influence on the adoption and usage of SMA
The study examined if the competitive presence in the tourism sector can influence the tourism SMEs on the adoption and usage of SMA. 52 tourism SMEs non-adopters of the SMA offered their views. 30 tourism SMEs equivalent to 58% responded that they strongly agreed with the competition in the tourism sector influence adoption of SMA. The other 22 tourism SMEs respondents (42%) mentioned that they agree with the competitiveness in the tourism industry influence the adoption of SMA. Generally, all the respondents agree there is a high influence of the adoption of SMA from the competitiveness in the tourism sector.

Government support and regulations in tourism SMEs adoption and use of SMA
The respondents were asked about the role of government support and regulations how they allow the adoption and usage of SMA in their social media platforms. The question was on how do the government support and regulate tourism SMEs ' adoption and use of SMA. 52 tourism SMEs non-adopters of SMA have either to agree, strongly agree, not agree or remain neutral. The results indicate that 2 tourism SMEs which is 4% were neutral with the question, 30 tourism SMEs respondents equal to 58% strongly agree and the remaining 20 tourism SMEs respondents 38% they agree that the government support and regulations support the tourism SMEs in adopting and using SMA. This shows that there is no resistance from the government on the adoption and use of SMA.

Discussion
The main objective of the study was to find out the current status of tourism SMEs' adoption and usage of SMA tools and technology to their business social media platforms in Tanzania as well as determine the factors which influence the adoption of SMA tools using TOE framework. During the survey, the study inquired on the kind of social media platforms which are commonly used by tourism SMEs. The majority of tourism SMEs said that they are using Facebook 97.18%, Instagram 88.73%, Twitter 39.43%, Google + 21.12% and Linkedin 11.26%, consistent with previous studies which also show that SMEs are using facebook mostly followed by Instagram and Twitter (see Alsharii et al., 2018; Ahmad et al., 2018). This is due to many potential clients of SMEs are using Facebook and Instagram. The results for tourism SMEs' adoption of SMA tools and technology show that the majority of the surveyed SMEs 73% did not adopt the usage of SMA and only 27% of the respondents SMEs which had adopted the technology. Although the majority 71% of non-adopted SMEs said they intend to adopt the usage of SMA in a very short time from six months to a year. The reason many tourism businesses did not adopt the SMA is that they don't have enough knowledge and information about it.

The TOE adoption framework was used to identify the technology, organization and environment factors that influence the tourism SMEs' adoption and use of SMA tools and the technology. The technology compatibility factor has been measured, organization employees' effect and top managers' readiness has been determined in the area of organization. Environment factors have been measured by looking at the tourism SMEs competition and government support and regulations. In this study, the tourism SME's technology compatibility has been determined and the majority of the tourism SMEs 63% have, technology that is compatible to conduct SMA in their business social media platforms. Some respondents agreed that their infrastructure can allow them to conduct SMA but they don't have the knowledge and more information about SMA (Madila et al., 2022).

On the organization factor, the employees' effect on adoption of technology and top manager's readiness to adopt new technology was measured to non-adopters of SMA technology. The findings show that the organization factor influences the tourism SMEs to

adopt and use the new technology. 71% of the respondents mention that the employees of the tourism SMEs didn't influence the adoption of new technologies while on the top manager's readiness to adopt new technology 69% of the tourism SMEs agreed that their top managers are ready for new technology. The findings show that there is a positive influence on the organization side to adopt the new technology from both the employees and top managers. The impact of external environment factors in the adoption of technology has been identified. The study found the impact of competition of other tourism SMEs and government regulations and support. All respondents agreed that competition from other tourism SMEs has an influence in driving them to adopt new technologies including SMA. 58% of the respondents mentioned that there is high support from the government to adopt new technologies even the regulation favours them to adopt this technology. These findings show that the environment factor favours tourism SMEs to adopt and use social media analytics to find insights on their social media platforms.

Conclusion

This study analysed the current state of affairs on examined the adoption of SMA tools and technology in tourism SMEs in Tanzania. By using the TOE framework, the study determines the factors which can determine the adoption of this new technology to tourism SMEs. The study findings show that the majority of the tourism SMEs are using social media platforms in their business activities, the well-used platforms including Facebook and Instagram, the study found that the level of the adoption of SMA to tourism SMEs is still low as the majority of the tourism SMEs are not adopting and implementing SMA. The study reveals that the tourism SMEs technology compatibility favours the adoption of SMEs, organization top managers and tourism SMEs staff support the adoption of SMA and environment factors like competition from other SMEs and governments support and regulations allow the adoptions of SMA to tourism SMEs in Tanzania. The study contributes to the existing literature on the adoption of SMA to tourism SMEs This is the first study on the adoption of SMA to tourism SMEs in Tanzania, and the managerial contribution of the study is to give the tourism SMEs managers and owners factors to determine when they consider adopting the usage of SMA in their social media platforms. The study recommends the government and other social media stakeholders increase awareness of SMA to tourism SMEs and other SMEs to increase the usage and adoption of the technology as it has advantages to their business activities. Further studies can be conducted to find the adoption and usage of SMA in a specific type of tourism SMEs eg. Hotels, tour guide operators etc. and other studies can be conducted to find the adoption status of big tourism business firms and government agencies in the tourism sector.

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