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**Journal of Environmental Management and Tourism** is an interdisciplinary research journal, aimed to publish articles and original research papers that should contribute to the development of both experimental and theoretical nature in the field of Environmental Management and Tourism Sciences.

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## Technology-Organization-Environment Model and Technology Acceptance Model in Adoption of Social Media Marketing on SMEs Tourism

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### Abstract

This study aims to analyze the model of social media adoption in SMEs tourism in Special Region of Yogyakarta, with antecedents' managers innovativeness, pressure from competitors, barrier to adoption, Perceived Usefulness (PU), Perceived Ease of Use (PEU) and attitude. Two theoretical approaches are used, namely Technology Acceptance Model and Technology-organization-environment (TOE) models. This research is a survey research. Respondents in this study are managers of SMEs tourism. The social media adoption model was tested empirically using 200 respondents. Structural Equation Model is used to analyze research data. This study analyzes the social media adoption of tourism SMEs in developing countries, because although there are many studies on social media adoption in developing countries, very few focus on social media adoption in the small-scale tourism industry. This research integrates TAM and TOE in exploring the adoption of social media marketing on SMEs tourism by adding a barrier to adoption. The results of this study indicate that the TAM model combined with TOE supports the social media adoption model. Most of the variables studied were largely significant, but this study could not justify the influence of barriers on social media adoption.

**Keywords:** manager innovativeness; pressure; barrier; perceived usefulness; perceived ease of use and adoption social media

**JEL Classification:** M31; Z32.



## Introduction

Social media has changed the approach to forming relationships in today's society (Kot *et al.* 2017). The increasing use of social media applications forces marketing organizations to respond by adopting and integrating new communication technologies better with the online target audience (Milwood, Marchiori and Zach 2013; Arshad and Akram 2018). This social media has also influenced tourism marketing strategies in doing business in the tourism industry. Although important social media and many tourism companies want to adopt social media, there are still a large number of tourism companies that ignore the use of social media (Pesonen *et al.* 2014). Iacovou (2016) added that in marketing activities in the tourism industry, social media integration carried out by professionals is still lacking. Marketers in the tourism industry use more traditional push marketing to promote tourism businesses, products and services. The use of E-tourism is only to convert text, audio, and images into digital forms and integrate them with all tourism activities.

This study aims to analyze the adoption of social media in SMEs tourism. This study also aims to create a conceptual model for social media adoption of effective tourism in developing countries. Indonesia as one of the developing countries has a number of well-known tourism potentials, one of which is in the province namely Special Region of Yogyakarta. The Special Region of Yogyakarta has extraordinary tourism potential with its natural beauty and diverse cultural heritage. However, most of the tourism business is still operating traditionally. Therefore, Yogyakarta failed to become a single destination and reach potential market targets because tourism operators have not been able to offer technology-supported pre-purchase facilities (Sugandini *et al.* 2018). Most tourism businesses in the Special Region of Yogyakarta are small businesses and are owned by the private sector. So that this research also contributes to efforts to close the research gap on the adoption of social media on SMEs tourism.

SMEs have unique characteristics as small businesses, so the existing literature on large organizations does not necessarily apply to SMEs (Kuan and Chau 2001). Small businesses are not only characterized by low sales, smaller assets and fewer employees, but also by resource poverty. Because of this particular form, SMEs are more influenced by external forces and are usually less willing to take risks (Góngora 2016), because SMEs do not have financial security. The adoption decisions and the way social media affect their business may be different from large companies. Thus, the need to study adoption and its effects on business, for the case of certain SMEs is still very much needed (Arshad and Akram 2018).

Shang (2014) and (Góngora 2016) stated that there was little attention to research on social media adoption in tourism SMEs. Lama *et al.* (2018) also stated that although much research on e-commerce adoption in general in developing countries but very little focused on social media adoption in the tourism industry. This study also uses TAM and TOE to explore the adoption of social media marketing in tourism by adding a barrier to adoption. The CEO / Manager innovativeness was used as part of the TOE to strengthen the findings of previous researchers who were still a little discussing about the role of managers innovativeness on social media adoption (Góngora 2016). Another variable used to predict social media adoption is perceived usefulness, perceived ease of use and attitude towards social media (which is part of TAM, Davis 1989); pressure from competitors which are part of the TOE model (Tornatzky and Fleischer 1990), and barrier to adopt social media (Lama *et al.* 2018). Barrier to social media adoption in this research is seen from the lack of resources in SMEs tourism and perceived risk.

## 1. Literature Review

### Social Media

Social Media is part of websites and online media. Social media is a site that provides a forum for users to interact online in the form of web content in the form of images, text, audio and video (Farrag and Nasr 2017). Including social media are Blog, Facebook, Twitter, Youtube, Instagram, LinkedIn, Flickr and others. Social media allows tourists to be active parties in supplying and disseminating information which in turn can significantly affect the success or failure of tourist destinations (Alizadeh and Isa 2015, Nawaz and Mubarak 2015). In addition, Fotis *et al.* (2010) identified two reasons for the growing popularity of social media among tourists. First, the nature of tourism products allows potential tourists to rely on the experience available on social media for the decision-making process. Second, social media allows tourists to become storytellers of their experiences in tourist destinations (Alizadeh and Isa 2015).

### **Adoption of social media**

This research considers social media as a technological innovation. Therefore, this study also uses the theory of technological innovation as a reference to study the adoption of social media by SMEs. According to Rogers, (1995), innovation is an idea, practice, or object that is considered new by individuals or other adoption units. This shows that innovation does not have to be something new found, but something that is considered new by the adopters. Mhizha *et al.* (2015) stated that the development of information communication technology adoption in the tourism industry has dramatically changed the way tourism companies operate. Enter and Michopoulou (2013) state that Technology Acceptance Model (TAM) can explain information seeking, trust, and sharing travel experiences in influencing tourists' behavioural intentions to use Facebook. The adoption of information and communication technology on social media has the potential to strengthen SMEs tourism by providing communication tools to meet the online needs of the domestic market, and allow access to the market (Ndekwa and Katunzi 2016). TOE is also used in this study to understand the adoption of new technologies at the organizational level. The TOE proposed by Tornatzky and Fleischer (1990) identified three important aspects of an organization that influence the process of adoption and implementation of technology, namely: the technological context, organizational context and environmental context.

### **Manager Innovativeness and attitude towards social media**

Damanpour and Schneider (2009) argue that older managers are always associated with acceptance of past conditions and have greater sociological commitment to organizational routines, so older managers are less willing to commit and change. Increasingly innovative managers are more receptive to innovation (Góngora 2016). In SMEs, managers make all decisions from daily operations to future investments (Voss and Brettel 2014), so that their roles directly influence the process of adopting Information Technology (IT) (O'Donnell 2014). A better understanding of IT adoption and manager's innovation is very important for successful implementation (Aykol and Leonidou 2014; Ragab 2016). Matikiti *et al.* (2018) states that good knowledge of innovation from a manager influences attitudes on social media. Dalvi-Esfahani *et al.* (2018) states that CEO innovativeness influences social commerce adoption in SMEs travel agencies.

H1: The Manager Innovativeness has a positive effect on attitude towards social media.

### **Pressure from competitor and attitude towards social media**

The TOE model shows that social media marketing adoption can be influenced by pressure from competitors (Chao and Chandra 2012). If a competitor adopts or has adopted social media marketing, it will force the organization to adopt it to be normally competitive (Wamba and Carter 2014). Góngora (2016) in his study on Spanish SMEs showed that there was an external pressure from competitors on social media adoption. This is supported by the results of research conducted by Matikiti *et al.* (2018) which shows that pressure from competitors influences attitudes toward social media in travel agencies and tour operators in South Africa.

H2: Pressure from competitors has a positive effect on attitude towards social media.

### **Barrier and Adoption Social Media**

SMEs tourism are often faced with a lack of resources and innovative knowledge. Limited resources pose relatively high risks for innovative activities (Najda-Janoszka and Kopera 2014). Company resources include human resources, costs, technology, and other business resources (Lama *et al.* 2018). Lama *et al.* (2018) also stated that lack of skills is one of the most important obstacles in technology adoption. Moorthy *et al.* (2017) states that risk barriers are inherent uncertainties in innovation. Moorthy *et al.* (2017) also shows that risk barriers negatively affect intention to adopt mobile commerce. The results of the research conducted by Sanchez *et al.* (2019) show that perceived risk is negatively related to the intention of adopting innovation. Matikiti *et al.* (2017) also states that perceived risk has a negative effect on the attitude towards the use of social networking.

H3: Barrier to adoption has a negative effect on social media adoption.

### **Perceived Usefulness (PU), Perceived Ease of use (PEU) and Adoption Social Media**

Matikiti *et al.* (2018) states that TAM variables such as perceived benefits and perceived ease of play influence the adoption of social media marketing in the South African tourism industry. The research results of Matikiti *et al.* (2017) also state that perceived usefulness influences the intention to adopt Social Networking Sites (SNS). Weerasinghe and Hindagolla (2018) also states that PU and PEU are the determining variables in adopting social

network sites. TAM is a good model and can predict predictions of user acceptance and technology adoption in various research contexts. Bogea and Brito (2018) conducted research on marketing executives of large companies in Brazil based on TAM. The results show that PEU and PU affect social media adoption.

H4: Perceived Usefulness has a positive effect on social media adoption.

H5: Perceived Ease of Use has a positive effect on social media adoption.

### Attitude toward Social Media and Adoption Social Media

Serben (2014) conducted a study on owners of small African-American businesses using the model of unified acceptance and use of technology (UTAUT) models, the results showed that attitudes toward adoption had an effect on adoption of social media. The results of the research by Matikiti *et al.* (2017) on the business of travelers and leisure travelers show that attitude influences the intention to adopt SNS. Dalvi-Esfahani *et al.* (2018) states that attitude towards information technology has a positive influence on the use of social commerce in travel agencies. Matikiti *et al.* (2018) stated that attitude towards social media adoption had an effect on the adoption of social media marketing.

H6: Attitude towards social media has a positive effect on social media adoption.

## 2. Methodology

This research is a survey research using a questionnaire as a data collector. This study analyzes the model of social media adoption in SMEs tourism in Special Region of Yogyakarta. This SMEs tourism is a tourism business that offers services directly to tourists or whose services are directly needed by tourists. Included in this category are all travel agents, tourist information and attractions which are classified as small scale businesses (SMEs). The amount of data used is 200 SMEs tourism. Respondents in this study were managers. Data analysis using SEM-AMOS. The innovativeness manager question item was adopted from Góngora (2016). Pressure from competitors comes from Góngora (2016) and Matikiti *et al.* (2018). Perceived barrier was adopted from Pesonen *et al.* (2014); Siamagka (2015); and Lama *et al.* (2018). PEU and PU adapted from Vankatesh and Davis (2000); Siamagka (2015). Attitude and adoption of social media adapted from Matikiti *et al.* (2018) and Davis (1989).

## 3. Results

### Profile of Respondent

This study uses data collected from 200 respondents of tourism SMEs managers or managers. Data was obtained from 75 travel agents, 75 tourist information and 50 attractions managers in DIY. The average length of business for this tourist is over 3 years. All respondents have adopted social media, both paid and free. Instagram is a form of social media used by all tourism actors in DIY, Facebook and blogs are also other choices in marketing tourism products.

### Data analysis results

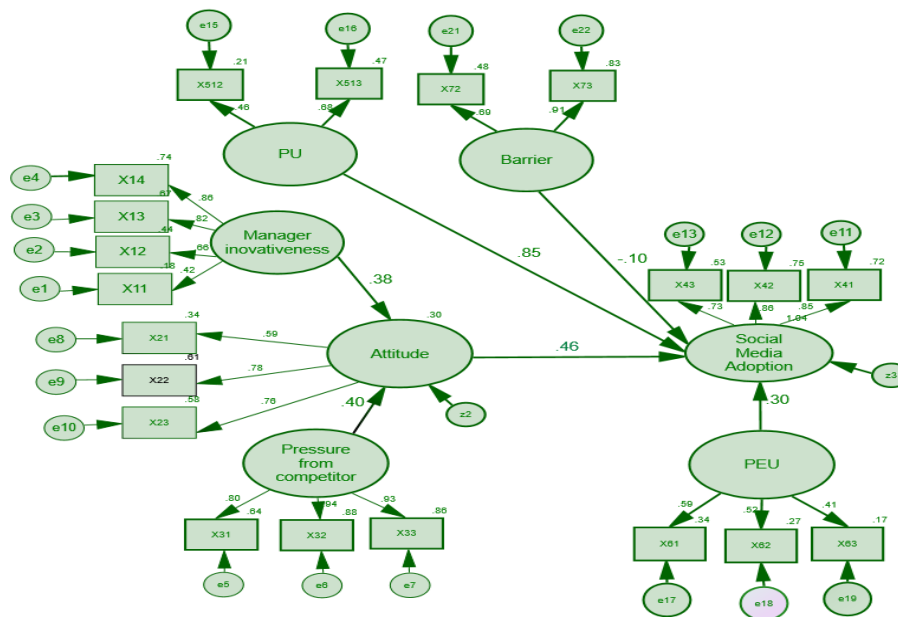
The results of the overall measurement model are quite good, so that it can proceed to the structural model analysis stage without modification. The results of structural model analysis are presented in table 1 and figure 1. The results of testing the structural model in Figure 1 show that all hypotheses are supported at a significant level of 0.05.

Table 1. Results of testing structural models

Type of Goodness of fit model	Indeks Goodness of fit model	Recommended value	Result	Information
Absolute fit measures	p	$\geq 0.05$	0.030	Good
	GFI	$\geq 0.90$	0.929	Good
	RMSEA	$\leq 0.08$	0.081	Good
Incremental fit measures	TLI	$\geq 0.90$	0.906	Good
	CFI	$\geq 0.94$	0.946	Good
Parsimonious fit measures	Normed $\chi^2$ (CMIN/DF)	$1 \leq \text{Normed } \chi^2 \leq 5$	4.080	Good



Figure 1. Structural Model of Social Media Adoption



The results of testing the structural model in Figure 1 and table 2 show that all hypotheses are supported by data at a significant level of 0.05. The first hypothesis states that there is a positive relationship between manager innovativeness (MI) and attitude towards adoption of social media, supported. Standardize Regression Weight (SRW) of 0.357 was statistically significant at  $p \leq 0.05$ . The second hypothesis states that there is a positive relationship between competitors (PfC) and attitude towards adoption of social media (ASM) is supported. SRW of 0.393, statistically significant at  $p \leq 0.05$ . The third hypothesis states that there is a negative relationship to barriers to social media adoption (BASC) and social media adoption is not supported. SRW is -0,139, not statistically significant at  $p \leq 0.05$  because it has a p value of 0.103. The fourth hypothesis which states that there is a positive relationship between PEO, PU and social media adoption (SMA) is supported. SRW of PU is 0.769 and SRW of PEU is 0.396 statistically significant at  $p \leq 0.05$ . The sixth hypothesis which states that attitudes towards social media has a positive effect on social media adoption is supported. SRW of 0.397 statistically significant at  $p \leq 0.05$ .

Table 2. Results of hypothesis testing

Path	SRW	p-value	CR	Hypothesis
MI → ASM	0.382	***	4.662	H1: Supported
PfC → ASM	0.396	***	5.128	H2: Supported
BASM → SMA	-0.102	0.178	1,347	H3: Not Supported
PU → SMA	0.853	***	4.585	H4: Supported
PEU → SMA	0.300	0.003	2.934	H5: Supported
ASM → SMA	0.461	***	6.283	H6: Supported

#### 4. Discussion

This study extends the TAM and TOE models to explain the main variables of social media adoption in the settings of SMEs. The expansion of the model in this study is to add a barrier to adoption variable in the main model, but unfortunately the influence of the barrier to adoption is not significant in influencing social media adoption. This is because many tourism SMEs managers consider that social media is familiar to employees and they assume that investment in social media is not costly, because most tourism SMEs still use unpaid social media. So the results of this study cannot support Najda-Janoszka and Kopera 2014; Lama *et al.* (2018); Moorthy *et al.* (2017) and Sanchez *et al.* (2019).

The TOE model proposed by Tornatzky and Fleischer (1990) is supported by the results of this study. The organizational context is analyzed from the role of managers' innovativeness. The environmental context analyzed through pressure from competitors. Both of these variables are analyzed in their role to influence attitude toward social media. This research can show that managers in tourism SMEs do like to try new technologies, have ideas that are always up to date with technological developments, prefer taking risks. This

causes the managers of tourism SMEs to be young and prefer social media which they consider to be something new and exciting. The results of this study support Damanpour and Schneider (2009), Góngora (2016), Voss and Brettel (2014), O'Donnell (2014), Aykol and Leonidou (2014), Ragab (2016) and Dalvi-Esfahani *et al.* (2018).

Regarding pressure from competitors, managers of tourism SMEs have understood that social media has been used extensively by competitors intentionally, thus causing an increase in the need for social media. Tour managers have started to make changes, from the use of traditional marketing to modern marketing based on information technology. Social media became the main choice for all tourism SMEs managers analyzed in this study. The results of this study support Chao and Chandra (2012), Wamba and Carter (2014), Góngora (2016) and Matikiti *et al.* (2018).

TAM states that PU, PEU and attitude have a positive influence on innovation technology adoption (Davis 1989). The results of this study indicate that managers of SMEs tourism perceive that social media can increase the effectiveness of business performance. In addition, social media is easy to learn and easy to apply. Tourism managers also assume that social media is beneficial for tourism SMEs. Thus, the rate of adoption of social media for use by tourism actors in DIY has increased. The results of this study support Matikiti *et al.* (2018), Matikiti *et al.* (2017), Weerasinghe and Hindagolla (2018) and Bogea and Brito (2018).

### Conclusion and Limitation

This research presents a model for understanding the adoption of social media marketing used in small tourism businesses. In addition, this study validates the application of TOE and TAM frameworks in analyzing social media marketing adoption by tourism business SMEs. This makes the TAM model more meaningful in the context of understanding the acceptance and use of social media in SME settings. However, this study has several limitations, first, a survey was conducted on SMEs tourism that have adopted social media in Special Region of Yogyakarta. The results must be interpreted with caution, especially related to the generalization of the research findings of social media users as a whole. Instagram and Facebook from the results of this study show the most popular social media sites among all respondents. Future studies can include analyzing data from other social media sites, and adding variables in behavioral theory to improve predictions of social media acceptance and usage behavior suggested by the TAM and TOE models. Other variables that have not been analyzed in this study that can influence the adoption of social media include the age of the manager, the education level of the manager, the pressure from the customer (Matikiti *et al.* 2018), the role government, user type (Hanafizadeh *et al.* 2012), perceived trust (Abu-Shanab 2012), perceived behavioral control and subjective norms (Matikiti *et al.* 2017).

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