# Exploring the Effect of Social Networking Service on Homestay Intention in Vietnam by GM(1, N) and Multiple Regression Analysis

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A significant area of Social Computing is the Social Network Service (SNS), known as Social Network Applications. In recent years, researchers have commonly used SNS as an instrument for linking and communicating. Homestay travel has been prevalent for a long time with the rise of social media. The goal of this study is to examine the influence of Social Network Service functions on homestay travel intention in Vietnam. Fourteen Social Network Service functions were summarized from the literature review and used as the variables influencing the purpose of homestay travel to develop a five-point Likert scale questionnaire for convenience sampling to perform an online survey. For further study, two hundred and twenty valid respondents were included. The GM(1, N) analysis showed interest sharing, photo sharing, and video sharing as the first to third most principal factors in their highly seasoned weighting towards homestay travel intention. On the other side, helping decision, helping interaction, and helping planning as the last three lists of weighting scores. Besides, multiple regression analysis shows that offering recommendations, helping planning, and sharing interest simultaneously predict homestay travel intention while the others don't. That means consumers would heavily rely upon the functions of sharing interest of social network services to evaluate their traveling options. It is proposed that homestay traveling vendors should pay more attention to the marketing of previous travelers' experiential interests to provoke the awareness of customers.

*Keywords:* GM(1, N), social networking service, homestay intention, social computing, multiple regression analysis

# **1. INTRODUCTION**

One of the world's biggest and most labor-rich service sectors is travel and tourism industry. In 2019, it was estimated that the number of international tourist arrivals worldwide would reach approximately 1.46 billion [1]. Globally, travel and tourism's direct contribution to GDP was approximately 2.9 trillion U.S. dollars in 2019 [2].

In 2017, there were 1.2 billion international travelers, and it is estimated that by 2030 there will be 1.8 billion passengers. Tourism accounts for almost 10% of the world's work-

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force [3]. There is limited global data on the scale of the P2P lodging economy. Peer-topeer (P2P) accommodation has an estimated 8 million beds. Although this is only a small portion of the global accommodation market (7%) It is rising faster than conventional housing [2]. At the end of 2016, MasterCard projected the overall volume of transactions in the P2P housing economy to be US\$75 billion, almost doubling to US\$139 billion at the end of 2020. For main peer-to-peer accommodation in 2013-2025, the estimated compound annual growth rate is 31 percent. The growth rate of conventional bed and breakfasts (B&Bs) and hostels are around six times as high [4].

Self-guided tours, along with the growth of the tourism industry, have become prosperous in recent decades. At the same time, rising peer-to-peer (P2P) network development has led to major changes in the tourism sector [5]. Tourists typically check and collect data for homestay tourism from different social networking sites. The archetypes of the rising and sharing economy are seen as networks such as Couchsurfing, Airbnb, Mealsharing, Uber or Lyft linked to various types of accommodation or transport services [6].

Since social networking sites are a sort of self-media, the content of the information provided and updated by many social networking sites is extremely huge. The selection of necessary and helpful data is a necessary e-technique that any user must know when signing into social networking services. Homestay tourism has attracted tremendous interest in recent years and has become prevalent for international and domestic visitors. More than mere social interaction, network relationality focuses on the strength of transient relationships outside accommodation facilities that form the tourist experience. There are four key principles of network relationality, that is temporary belongingness, a priori empathy, technology as a bridge to face-to-face interactions, and relational spaces [7].

In Vietnam, for foreign visitors who are good at traveling worldwide to explore and learn new experiences by experiencing different local lives, homestay tourism is considered an ideal tourism arrangement. Widespread property, varied customs, and traditional festivals encourage homestay tourism with so many races to draw international and domestic visitors to travel to different regions to learn more fresh adventures. The Vietnam National Administration of Tourism issued a "Guiding document for tour operators in homestay services" in 2013 to require homestay tour operators to meet certain standards to provide facilities, services, management of security and safety, and environment. It is also undeniable that homestay tourism is a prospective and promising trend in Vietnam tourism [8].

To investigate the affecting degree of various social networking service features on homestay intention in Vietnam, an earlier version of this paper [9], which was presented at the 25th International Conference on Technologies and Applications of Artificial Intelligence (TAAI 2020), summarized the variables and reduced the dimensions associated with data in [10] to find the social networking service factors of homestay intention in Vietnam based on GM (1, N) model. Because it is a preliminary study, that research results illustrated the ranking of the influential factors of homestay intention by solving a system of linear equations in multiple variables. After establishing the influence degree of the functions of social networking service on homestay intention, it is necessary to conduct a more delicate study to determine the significance of these factors. Therefore, this article extends and supplants the earlier version to examine the main characteristics of social networking sites that induce "homestay tourism in Vietnam."

The result difference between the current version and previous publication lies in the

two factors: helping planning and offering recommendation. These two factors are significant, next only to sharing interest, in multiple regression in the former version while obtain low ranking in the latter version.

## 2. LITERATURE REVIEW

Homestays initially grew in popularity as a way for language, cultural or student travelers to immerse themselves in the local culture of a town or city. A homestay is an increasingly popular form of accommodation that connects guests with individual hosts who have opened their homes to travelers. Homestay lodging differs from other popular forms of private accommodation because of its host-present model. The market is significant and is quickly expanding. Homestay.com estimates the valuation of the global private accommodation marketplace to be approximately US\$15 billion [11].

In general, homestay can be categorized into two kinds: (1) accommodations for foreign students who participate in an overseas learning program to learn local languages, culture, and experiences; (2) accommodation for overseas or domestic visitors living with host families of a destination, instead of hotels. For the second type, host families are commercial residences. Those living in these kinds of local host families pay to live in private homes and attempt to connect with the landlord family [12]. Tourists will perform all regular activities with the host family during homestay trips to gain knowledge of local traditions and lifestyles. Visitors will have the opportunity to spend time learning customs, evaluations, and community with host families, and then help them have the opportunity to experience the fun of rural life.

Information from online user reviews is valuable and vital for customers as online user reviews are initially intended to design for the reference of customers and thus become a significant source. For industry, other means of communication between businesses and customers have been replaced and balanced by this type of source. [13]. In order to get in contact with customers, the details on the item would benefit from word-of-mouth (WOM). There is no question that in today's virtual world, electronic word-of-mouth (EWOM) contact through websites plays an imperative role. Because online user review is the concrete display of EWOM, it presents the form similar to recommendation useful for various online products and services. In competitive apps store market, user comments play a vital role in the download decision. It is proved to be an effective method for developing the features of apps and a personalized app recommender system will improve the performance of other EWOM methods [14].

Social networking services (SNS) have become a regular practice for every generation in recent years, after two decades of development and growth. It is also considered a valuable marketing tool by marketers. Since customers may search social networking sites for any information they need, these sites have become forums for consumers to discuss goods or services.

In addition, users can not only obtain opinions from friends and family members due to the featured attributes of social networking sites but also broaden the reach of contact with new individuals to listen to their experiences. This phenomenon greatly defines and disseminates EWOM contact. Besides, the great interest of consumers in social networking services prompts advertisers to understand that SNS is a valuable way to connect with customers to communicate information with EWOM in order to get in contact with customers. [15]. Accordingly, there are tremendous demands for a powerful personalized service (Social Group Query) to automatically suggest suitable social groups with minimized social distance to help planning activities [16].

According to the concept of social influence, people are consistently influenced by other people. The popularity of others lies among the various causes affecting social influence [17]. Previous research showed that people in an independent world reveal modest social influences effect while very strong social influences effect in the social influence worlds [18]. Information sharing is characterized by the immediate interaction role of social media as a means of important information exchange [19]. Consequently, through online channels, social media users can produce, share, and find any details. Social networking also promotes contact between brands and consumers, so it is possible to assess the relationship between them [20]. As result, knowledge is now seen as a working development of users of social media [21]. Consumers would like to do their hardest to obtain information in this situation to make a buying decision. The inherent explanation is that, after assessing a variety of available options and conducting cost-performance analysis, consumers often make a buying decision.

Currently, by obtaining adequate information, analyzing different choices, performing a cost-benefit study, *etc.*, customers want to make informed buying decisions. Marketers must appear on social media to meet the opinions of customers on the product. Afterward, this not only included mutual two-way contact, but also customer behavior on brands and performance [22].

In order to share their opinions and exchange intelligence together, customers can now access different brand-related social media platforms or groups. In this context, advertisers may indirectly influence the attitudes of users towards products and brands [23]. Numerous studies have shown that the most common social media subjects are customer transactions and purchasing experiences. Consequently, online information has in some sense become a kind of impartial third party and therefore allows consumers to have a positive effect on the brand [24].

However, in the last few years, the profile of the average homestay traveler has dramatically changed, thanks in part to online aggregators that specialize in linking guests and hosts. [11]. Those who want to have a homestay destination can find relevant details easily and improve their purpose of homestay tourism due to social networking sites. By checking in points-of-interest (POI) to the website, tourists can share their locations and experiences with others [25]. In this respect, it is the opportunity to develop an end-to-end personalized and dynamic travel recommendation system by exploring the inherent pattern of users' check-in behavior which is embedded in users' historical POI records implying users' preference [26, 27]. Finally, how to automatically generate, personalize and customize the travel packages for potential tourists is a kernel issue in SNS [28]. That is why the purpose of this study is to understand the homestay tourism impression of travelers through social networking sites.

# **3. RESEARCH METHOD**

#### 3.1 Materials and Measurements

This study is a partial continuation of a prior study [9] by summarizing and reducing

the dimensions of its study and the related data set. The original research framework of [10] established an empirical research model with four variables including social networking sites, electronic word-of-mouth communication, information sharing, and homestay intention. Next, a questionnaire was developed according to these four variables based on questions adapted from preceding researches and self-designed questions. The five-point Likert scale system with 1 denoting strong disagreement to 5 for strong agreement is applied for the questionnaire design. An online survey was conducted by convenience sampling with 220 convincing respondents.

Despite this, after screening and scrutinizing the variables, dimensions, and factors of ref [10], this research extracted homestay travel intention and fourteen functions of social network service including sharing an idea, helping search, helping decision-making, sharing own experience, sharing blogging, helping planning, helping communication, sharing interest, offering consultation, helping interaction, sharing video, sharing a photo, offering knowledge, and offering a recommendation.

The Likert scale, a kind of psychometric scale, are usually used for designing questionnaires in various research fields. Because the scale is employed to measure linguistic variables evaluating by meaning of words or sentences [29, 30], there exists the ambiguity of meanings between adjacent linguistic qualifiers. Hence, the linguistic variables measured with Likert scale can be converted to qualitative values by grey numbers because Grey System Theory (GST) has been regarded as an ideal method to deal with uncertainty in system since its initiation in 1982 [31, 32].

#### $3.2 \, \text{GM}(1, N)$

A grey system theoretically means that a system contains unknown information, uncertain information and known information represented by a range from black through grey to white. The goal of GST is to transform uncertain information to meaningful and useful information in systems [33] and hence to analyze and resolve latent and intricate systems [34]. With its successful practical solutions to various problems, GST proves to be a suitable methodology in many fields [35].

By the definition of grey system, the proposition that the four variables consisted of fourteen functions of social network service will influence homestay travel intention is a latent and intricate system. Homestay travel intention is the behavior of the system and the functions of social network service are the influencing factors affecting the system's behavior. In this case, GM(1, N), as a sub-type of Grey system theory, is appropriate to analyze this causal-effect system. However, owing to the methodological limitation, GM(1, N) can only determine the ranking of influential factors but not their significance albeit it's benefits of solving the problem of uncertainty over the alternatives. The analysis of GM(1, N) as a preliminary study was originally presented in 2020 at the International Conference on Technologies and Applications of Artificial Intelligence [9]. This paper extends the research to determine the significance of influential factors. Therefore, this article incorporated GM(1, N) analysis and multiple regression analysis to analyze respondent data of these fifteen variables to discover the weighting and significance of each factor of functions of social network service toward homestay travel intention.

In general, GM(1, N) is used to investigate the relative importance of factors towards target behavior. The mathematical definition and principle of GM(1, N) are stated as

follows. For sequences  $x_i^{(0)}(k)$ , i = 1, 2, 3, ..., N, if  $x_1^{(0)}(k)$  is the behavior of a system, and sequences  $x_2^{(0)}(k)$ ,  $x_3^{(0)}(k)$ ,  $x_4^{(0)}(k)$ , ...,  $x_N^{(0)}(k)$  are the influencing factors affecting the system's behavior, where N for a number of variables and k for a number of observations. Because the original data sequences may be difficult to reveal their variations from each other, it's better to generate data by accumulate generating operation (AGO) to disclose the hidden regular pattern in the system [36]. Subsequently, the AGO data of influencing factors are incorporated with the moving average AGO data of behavior factor to form a system of linear equations in multiple variables. Finally, the weighting value of each influencing factors can be obtained by solving the simultaneous equations. The mathematical calculating procedure of GM (1, N) are stated as follows [37-42]. 1. Building original sequences.

$$X_{N}^{(0)} = \begin{bmatrix} x_{1}^{(0)}(1), x_{1}^{(0)}(2), x_{1}^{(0)}(3), \dots, x_{1}^{(0)}(k) \\ x_{2}^{(0)}(1), x_{2}^{(0)}(2), x_{2}^{(0)}(3), \dots, x_{2}^{(0)}(k) \\ x_{3}^{(0)}(1), x_{3}^{(0)}(2), x_{3}^{(0)}(3), \dots, x_{3}^{(0)}(k) \\ \vdots & \vdots & \vdots & \vdots \\ x_{N}^{(0)}(1), x_{N}^{(0)}(2), x_{N}^{(0)}(3), \dots, x_{N}^{(0)}(k) \end{bmatrix}$$
(1)

where k = 1, 2, 3, ..., n.

2. Building accumulated generating operation (AGO) sequences.

$$X_{N}^{(1)} = \begin{bmatrix} x_{1}^{(1)}(1), x_{1}^{(1)}(2), x_{1}^{(1)}(3), \dots, x_{1}^{(1)}(k) \\ x_{2}^{(1)}(1), x_{2}^{(1)}(2), x_{2}^{(1)}(3), \dots, x_{2}^{(1)}(k) \\ x_{3}^{(1)}(1), x_{3}^{(1)}(2), x_{3}^{(1)}(3), \dots, x_{3}^{(1)}(k) \\ \vdots & \vdots & \vdots & \vdots & \vdots \\ x_{N}^{(1)}(1), x_{N}^{(1)}(2), x_{N}^{(1)}(3), \dots, x_{N}^{(1)}(k) \end{bmatrix}$$
(2)

where

$$\begin{aligned} x_i^{(1)} &= (\sum_{k=1}^{1} x_i^{(0)}(k), \sum_{k=1}^{2} x_i^{(0)}(k), \sum_{k=1}^{3} x_i^{(0)}(k), \dots, \sum_{k=1}^{n} x_i^{(0)}(k)) \\ i &= 1, 2, 3, \dots, N. \\ k &= 1, 2, 3, \dots, n. \end{aligned}$$

3. Integrating the AGO sequences with the original sequences.

$$x_{1}^{(0)}(k) + az_{1}^{(1)}(k) = \sum_{i=2}^{N} b_{i} x_{i}^{(1)}(k)$$
(3)

where  $z_1^{(1)}(k) = 0.5x_1^{(1)}(k) + 0.5x_1^{(1)}(k-1), k \ge 2$ . 4. Substituting all AGO values into Eq. (3).

$$a_{1}z_{1}^{(1)}(N) = \begin{bmatrix} b_{2}x_{2}^{(1)}(2) + \dots + b_{N}x_{N}^{(1)}(2) \\ b_{2}x_{2}^{(1)}(3) + \dots + b_{N}x_{N}^{(1)}(3) \\ b_{2}x_{2}^{(1)}(4) + \dots + b_{N}x_{N}^{(1)}(4) \\ \vdots & \vdots & \vdots \\ b_{2}x_{2}^{(1)}(n) + \dots + b_{N}x_{N}^{(1)}(n) \end{bmatrix}$$

$$(4)$$

5. Building GM(1, N) matrix equation according to Eq. (4).

$$\begin{bmatrix} x_1^{(0)}(2) \\ x_1^{(0)}(3) \\ \vdots \\ \vdots \\ \vdots \\ x_1^{(0)}(n) \end{bmatrix} = \begin{bmatrix} -z_1^{(1)}(2) & x_2^{(1)}(2) & \dots & x_N^{(1)}(2) \\ -z_1^{(1)}(3) & x_2^{(1)}(3) & \dots & x_N^{(1)}(3) \\ \vdots & & & & \\ \vdots & & & & \\ -z_1^{(1)}(n) & x_2^{(1)}(n) & \dots & x_N^{(1)}(n) \end{bmatrix} \begin{bmatrix} a \\ b_2 \\ \vdots \\ \vdots \\ \vdots \\ b_2 \\ \vdots \\ b_2 \\ \vdots \\ \vdots \\ b_N \end{bmatrix}$$
(5)

"a" is the development coefficient and "b" means the drive coefficient.

6. Resolving  $\hat{a} = (B^T B)^{-1} B^T Y$  by means of least square method to obtain the following results.

$$\hat{a} = \begin{bmatrix} a \\ b_2 \\ \cdot \\ \cdot \\ \cdot \\ b_N \end{bmatrix} B = \begin{bmatrix} -z_1^{(1)}(2) & x_2^{(1)}(2) & \dots & x_N^{(1)}(2) \\ -z_1^{(1)}(3) & x_2^{(1)}(3) & \dots & x_N^{(1)}(3) \\ \cdot & & & & \\ \cdot & & & & \\ \cdot & & & & \\ -z_1^{(1)}(n) & x_2^{(1)}(n) & \dots & x_N^{(1)}(n) \end{bmatrix} Y_N = \begin{bmatrix} x_1^{(0)}(2) \\ x_1^{(0)}(3) \\ \cdot \\ \cdot \\ x_1^{(0)}(n) \end{bmatrix}$$
(6)

The relationship between the influencing sequences and the major sequence could be found by the value of  $b_N$ .

## 3.3 Multiple Regression Analysis

As a mature and traditional statistical method, the principle and process are briefly described as follows. The objective of the model is to determine how the depend variable *y* is related to the *p* independent variables  $x_1, x_2, ..., x_p$ . the multiple linear regression model can be formulated as:  $y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + ... + \beta_p x_p + \varepsilon$ .

Suppose the data sequences of depend variable and independent variables are  $(y_1, x_{11}, x_{12}, ..., x_{1p})$ ,  $(y_2, x_{21}, x_{22}, ..., x_{2p})$ , ...,  $(y_n, x_{n1}, x_{n2}, ..., x_{np})$ , they can be represented as the matrix form.

$$Y = \begin{bmatrix} y_1 \\ y_2 \\ \vdots \\ y_n \end{bmatrix}, X = \begin{bmatrix} 1 & x_{11} & \cdots & x_{1p} \\ 1 & x_{21} & \cdots & x_{2p} \\ \vdots & \vdots & \ddots & \vdots \\ 1 & x_{n1} & \cdots & x_{np} \end{bmatrix}, \beta = \begin{bmatrix} \beta_0 \\ \beta_1 \\ \vdots \\ \beta_p \end{bmatrix}$$

Afterwards, the least square method is used to find the estimate of  $\beta$  by minimizing:

$$S(\beta) = S(\beta_0, \beta_1, \dots, \beta_p) = \sum_{i=1}^n (y_i - \beta_0 - \beta_1 x_{i1} - \beta_2 x_{i2} - \dots - \beta_p x_{ip})^2$$

Then the least square estimate b is

$$b = \begin{bmatrix} b_0 \\ b_1 \\ \vdots \\ b_p \end{bmatrix} = (X'X)^{-1}X'Y$$

where  $X^t$  is the transpose of the matrix X.

The fitted regression equation is

 $\hat{y} = b_0 + b_1 x_1 + b_2 x_2 + \ldots + b_p x_p.$ 

The predicted value for an observation with  $x_{n2}, \ldots, x_{np}$  is

 $\hat{y}_N = b_0 + b_1 x_{N1} + b_2 x_{N2} + \ldots + b_p x_{Np}.$ 

# 4. RESULTS

### 4.1 Descriptive Statistics

The demographic profile of respondents is shown in Table 1. 60.9% were female while 39.1% were male. 55.9% of all respondents reported they were single at the time of the survey, and 44.1% of respondents reported they were married. The majority of all survey respondents belonged to the age group of 21 to 30 with 54.5% and the second proportion (30.0%) within the age group interval from 31 through 40 while respondents age below 20 and above 40 were both less than 10%. The highest reported percentage was 42.7% of university undergraduates, followed by respondents from college (19.1%) and master (17.7%). The largest percentage of respondents was those who with full-time jobs with 47.7% followed by self-employed (21.8%). Table 1 shows that 26.4% of respondents earned 6 - 10 million Vietnam Don and 23.2% with 11 - 15 million, totally accounting for about half of all respondents. The majority (52.7%) of all survey respondents resided in metropolises and 20.9% in the city. As for the frequency of using SNS, 82.7% of respondents visit SNS every day. And the most popular SNS was Facebook, with a total of 63.2%.

Table 1. Demographic profile of respondents.					
Variable	Freq.	Pct. (%)			
Gender					
	Male	86	39.1		
	Female	134	60.9		
Civil status					
	Unmarried	123	55.9		
	Single	97	44.1		
Age					
	$\leq 20$	16	7.3		
	21-30	120	54.5		
	31-40	66	30.0		
	> 40	18	8.2		
Education					
	Junior HS	9	4.1		

	Senior HS	36	16.4
	College	42	19.1
	University	94	42.7
	Graduate	39	17.7
Occupation			
1	Student	26	11.8
	Part-time Job	27	12.3
	Full-time Job	105	47.7
	Self-employed	48	21.8
	Other	14	6.4
Monthly Income			
•	< 6 M VND	32	14.5
	6-10 M VND	58	26.4
	11-15 M VND	51	23.2
	16-20 M VND	35	15.9
	21–25 M VND	16	7.3
	> 25 M VND	28	12.7
Residence			
	Metropolis	116	52.7
	City	46	20.9
	Town	30	13.6
	Countryside	24	10.9
	Coastal areas	4	1.8
Freq. of using SNS			
	Daily	182	82.7
	2-6 a week	30	13.6
	Once a week	4	1.8
	Once a month	4	1.9
SNS type			
	Facebook	139	63.2
	Instagram	20	9.1
	You tube	21	9.5
	Google	33	15.0
	Other	7	3.2

Source: Adapted from Tran Thi (2018)

## 4.2 GM(1, N) Analysis

GM(1, N), one of the grey modeling (GM), is utilized in this study to examine the effect of functions of social network service on homestay travel intention. Corresponding to the research's purpose, homestay travel intention is the behavior of the causal-effect system and the fourteen functions of social network service are the influencing factors. The former is denoted as  $x_1$  and the latter as  $x_1, ..., x_{15}$  according to GM (1, N) model as follows.

x<sub>1</sub>: Homestay Intention

- *x*<sub>2</sub>: Sharing Idea
- x<sub>3</sub>: Helping Search

x<sub>4</sub>: Helping Decision-Making

*x*<sub>5</sub>: Sharing Own Experience

*x*<sub>6</sub>: Sharing Blogging

x<sub>7</sub>: Helping Planning

 $x_8$ : Helping Communication $x_9$ : Sharing Interest $x_{10}$ : Offering Consultation $x_{11}$ : Helping Interaction $x_{12}$ : Sharing Video $x_{13}$ : Sharing Photo $x_{14}$ : Offering Knowledge $x_{15}$ : Offering Recommendation

In accordance with the aforesaid Eqs. (1) to (5), the comprehensive calculation procedure is illustrated as follows.

- 1. Creating the original sequences according to Eq. (1) as Table 2.
- 2. Constructing the AGO sequences according to Eq. (2) as Table 3.

Table 2. Original sequences.					
Questions	<b>P</b> <sub>1</sub>	$P_2$	<b>P</b> <sub>3</sub>		P220
<i>x</i> 1	4	5	5		3
<i>x</i> <sub>2</sub>	5	4	5		2
х з	5	5	5		4
<i>X</i> 4	4	5	5		4
<i>x</i> 5	4	5	5		3
<i>X</i> 6	5	5	5		4
<i>X</i> 7	4	5	5		4
<i>X</i> 8	4	5	5		3
<i>x</i> 9	5	5	5		3
X 10	4	5	5		2
X 11	5	5	5		3
<i>x</i> 12	5	5	5		4
X 13	5	5	5		4
X 14	5	5	5		4
X 15	5	5	5		4

Table 2.	Original	sequences.
	~	sequences.

Table 3.	AGO	sequences.
I able 5.	100	sequences

Questions	P <sub>1</sub>	P <sub>2</sub>	P <sub>3</sub>	 P <sub>220</sub>
x <sub>1</sub>	4	9	14	876
<i>X</i> 2	5	9	14	865
Х 3	5	10	15	864
<i>X</i> 4	4	9	14	849
<i>X</i> 5	5	10	15	886
<i>X</i> 6	5	10	15	875
<i>X</i> 7	4	9	14	863
<i>X</i> 8	4	9	14	841
<i>X</i> 9	5	10	15	876
X 10	4	9	14	842
<i>x</i> 11	5	10	15	838
X 12	5	10	15	889
X 13	5	10	15	882
X 14	5	10	15	879
X 15	5	10	15	887

3. Combining AGO sequence with the original sequences as Eqs. (3)-(5).

[9]		-6.5	9	10	$\begin{bmatrix} b_1 \end{bmatrix}$
14		-11.5	14	15	$b_2$
:	=			:	1:
876		-874.5	865	887	$b_{15}$

4. Solving the system of simultaneous equations to find the value of  $b_N$ .

Therefore,  $b_2=0.3595$ ,  $b_3=0.3661$ ,  $b_4=0.0576$ ,  $b_5=0.2306$ ,  $b_6=0.2105$ ,  $b_7=0.0266$ ,  $b_8=0.407$ ,  $b_9=0.6797$ ,  $b_{10}=0.1045$ ,  $b_{11}=0.0554$ ,  $b_{12}=0.566$ ,  $b_{13}=0.6309$ ,  $b_{14}=0.0968$ ,  $b_{15}=0.3752$ , and their ranking are obtained and shown as Table 4. The results showed that interest sharing, photo sharing, and video sharing are the top three factors while sharing idea, sharing own experience, and sharing blogging only rank as seventh to ninth place. That means the users of social media services prefer the legible content rather than lengthily detailed description. On the other hand, helping communication and helping search rank as the fourth and sixth factors while helping decisions, helping interaction, and helping planning are ranked as the last three factors. That indicates users of social media services prefer the functions of collecting information but not the decision support function.

	Lactors of Othe (1	····
Factors	Weighting	Ranking
Sharing Idea	0.3595	7
Helping Search	0.3661	6
Helping Decision-Making	0.0576	12
Sharing Own Experience	0.2306	8
Sharing Blogging	0.2105	9
Helping Planning	0.0266	14
Helping Communication	0.4070	4
Sharing Interest	0.6797	1
Offering Consultation	0.1045	10
Helping Interaction	0.0554	13
Sharing Video	0.5660	3
Sharing Photo	0.6309	2
Offering Knowledge	0.0968	11
Offering Recommendation	0.3752	5

Table 4. Ranking of factors by GM (1.N).

#### 4.3 Multiple Regression Analysis

Multiple regression analysis by using the enter method was conducted to see if the fourteen factors significantly predicted homestay travel intention. Table 5 shows that the model explain a significant amount of the variance in homestay travel intention ( $F(14, 205) = 56.287, p < .0001, R^2 = .794, R^2_{Adjusted} = .779$ ). Since none of the VIFs exceed 10, we can conclude that there is no severe collinearity in this regression. The analysis shows that offering recommendation (*Beta* = .450, t(219) = 6.307, p < .05), helping planning (*Beta* = .213, t(219) = 3.012, p < .05), and sharing interest (*Beta* = .147, t(219) = 1.988, p < .05) significantly predict homestay travel intention while the others don't.

Table 5. Result of multiple regression analysis.						
Predictors	Coefficients	t	Sig.	VIF		
(Constant)	.195	1.344	.180			
Sharing Idea	.122	1.893	.060	4.155		
Helping Search	.092	1.367	.173	4.469		
Helping Decision-Making	.112	1.619	.107	4.731		
Sharing Own Experience	002	-0.029	.977	5.094		
Sharing Blogging	087	-1.221	.224	5.032		
Helping Planning	.213	3.012	.003	4.947		
Helping Communication	.024	.356	.722	4.563		
Sharing Interest	.147	1.988	.048	5.434		
Offering Consultation	.022	.343	.732	4.015		
Helping Interaction	048	-0.752	.453	4.021		
Sharing Video	.106	1.237	.217	7.274		
Sharing Photo	076	-0.895	.372	7.125		
Offering Knowledge	108	-1.527	.128	4.966		
Offering Recommendation	.450	6.307	.000	5.059		

Table 5. Result of multiple regression analysis

# 5. CONCLUSIONS AND SUGGESTIONS

As the results of GM(1, N) analysis show, interest sharing, photo sharing, and video sharing rank as the first to third, respectively, in terms of their highly seasoned weighting towards homestay travel intention. That is, the above three factors are the principal causes of influencing homestay travel intention. On the other hand, helping decisions, helping interaction, and helping planning are ranked as the last three weighting scores. Besides, multiple regression analysis shows that offering recommendation, helping planning, and sharing interest simultaneously predict homestay travel intention while the others don't. That means consumers would rely upon the functions of sharing interest, photo, and video by others to evaluate their traveling options. The result, which is consistent with social influence theory, showed that people's behavior will be influenced when they learned what others had done before [17, 43, 44]. However, the final decision to the homestay, detailed planning, and interaction with homestay vendors will not be influenced by SNS. What we can infer from this result is that consumers want more autonomy and control over their travel decisions. They would rather treat SNSs as personal assistant tools than rely entirely on them to make travel decisions. That is to say, today's tourists prefer to take references from others' traveling experiences to design their own travel schedule. In this case, their travel will be more abundant and unique than others. The conclusion might be made that the SNS application of homestay operation should focus more on personalized sharing to induce potential customers' interest. It is suggested that homestay traveling vendors should pay more attention to use the function of SNS to promote previous travelers' experiences to increase future customers' awareness.

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