

Factors Influencing Users' Satisfaction Towards Image Use in Social Media: A PLS-SEM Analysis

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Irma Syarlina Che Ilias^{1,2}, Suzaimah Ramli¹(✉), Muslihah Wook¹,
Nor Asiakin Hasbullah¹

¹Department of Computer Science, Faculty of Defense Science and Technology,
National Defence University of Malaysia, Selangor, Malaysia

²Computer Engineering Technology Section, Malaysian Institute of Information
Technology, Universiti Kuala Lumpur, Kuala Lumpur, Malaysia
suzaiman@upnm.edu.my

Abstract—Images for social media are an essential component of any blog or social media post. As we now live in the age of the 'camera in everyone's pocket', a new dynamic era of image creation and content has emerged. However, people use media due to specific motives or gratifications that lead to their satisfaction of social media use. This research study utilized uses and gratification theory (UGT), a sociology theory related to the motives of people using the media. The UGT factors include enjoyment, entertainment, social influence, social interaction, and information sharing. There were 441 data that were collected and analysed. IBM SPSS Statistics 20 and Smart PLS 3.3.3 were used for the data analysis. Result showed that information sharing was the most influencing factors on users' satisfaction to use image in social media. Therefore, the factors identified in these studies could be used as a guideline and references in future study related to social media awareness and implications.

Keywords—uses and gratification theory, satisfaction, image use, social media

1 Introduction

Social media are the incorporation of digital media, such as images into a digital environment that allows people to interact with data for a variety of purposes. Compared to others, images produce higher levels of interaction because images are the attributes to the audience's viewing time, easily shared and constantly used in various social media platforms. With the knowledge of motive or gratification, images are used across most social media platform where users carefully craft the way images are perceived by others and engage to use in the social media [1].

A study by Norsharina et al. [2], suggest future research to look into reason for using social media platforms. According to Ajis et al. [3], based on Uses and Gratification Theory (UGT), people are using social media due to motive that provide satisfaction and fulfil their needs. In addition, Gan et al. [4] showed that satisfaction affected users' behavior to continue using social media. There are also many theories have been proposed to explain users' acceptance and intention on the social media [5].

Since motive or gratification provide satisfaction to user's needs, this study aimed to elucidate the factors influencing users' satisfaction on image use in social media. Considering prior studies [6]–[10], we identified and explored five UGT factors: enjoyment, entertainment, social influence, social interaction and information sharing. Based on our knowledge, this is the first study that reports on users' satisfaction specialized on image use in social media.

2 Literature review and hypothesis development

2.1 Image use in social media

Rogers [11] discussed that there was an evolution on image use. It started with digital images during the 1990s, networked images on 2000s and image use in social media since 2010s. Social media provide a platform to upload photos based on users' choice as profile picture, cover photo and many more [12]. Furthermore, photo as image holds a dominant position among the various types of content shared and viewed on social media, becoming increasingly important across all major social media platforms [13].

2.2 Uses and gratification theory

The theory of UGT explains how people use media, and investigates the various gratifications that drive media use [14]. UGT emphasizes the various effects of gratifications on people's motivation to engage in behaviors [15]. Moreover, several research studies used UGT to examine and explore why individuals used social media and the benefits gained when consuming media, connecting, and also exchanging content and knowledge from those media using various media [16]. Users will continue to interact with social media if their satisfaction and desires are in line with the platform [17]. In addition, according to Kujur and Singh [18], UGT is well-adapted to investigate the effects and factors of visual communications and using such images on social media. Therefore, the diversity of the usage of social media is expressed in the UGT study.

Enjoyment: Yan Li [6] indicated that social media could offer various forms of enjoyment. A strong relationship between enjoyment and social media use has been advocated by a great deal of empirical evidence. Likewise, the use of social media is expected to meet users' needs to enjoy and enhance their inner satisfaction. Therefore, this study hypothesized:

H1: User's satisfaction with the images is positively affected by enjoyment.

Entertainment: Entertainment is the final pleasure discovered to be correlated with social media activities to relieve boredom or just to have fun [19]. Entertainment is important in relation to the popularity of social media content, indicating that users use social media as a means of entertainment [7]. Therefore, this study hypothesized:

H2: User's satisfaction with the images is positively affected by entertainment.

Social Influence: Social influence captures the perceived expectations of individuals or groups of specific referents of a person, and his or her motivation to meet these expectations [20]. Disciplines such as Information Systems (IS) have been included in the study of the social influence of social circles in the digitised society [8]. Therefore, this study hypothesized:

H3: User's satisfaction with the images is positively affected by social influence.

Social Interaction: The social interaction refers to the benefits of socialising with other media users and it has been shown to be a great significance in studies on media user [21]. In addition, social media are a type of medium that allows for interactive or two-way social interactions, shifting the pattern of information dissemination from one to many audiences [9]. Therefore, this study hypothesized:

H4: User's satisfaction with the images is positively affected by social interaction.

Information Sharing: Information sharing correlates with social media interactions and communications with members to increase and satisfy a user's satisfaction with a social media platform [22]. It also entails status changes and public posts, and is a vehicle for a higher proportion of information sharing [23]. Therefore, this research study hypothesized:

H5: User's satisfaction with the images is positively affected by information sharing.

3 Materials and method

This section contains information on the study method, data collection, the instrument used, the pilot study, the study sample, and demographic data.

3.1 Research method

The quantitative research method was used to measure the factors that influenced image use in social media. The study population comprised of 67,634 students of 11 MARA Education Institute (IPMA) in various states in Malaysia. However, it is possible and difficult to capture all elements (individuals or items) in the target population because each research study has limitations and constraints, such as time, energy, cost and area distance [23], [25].

Therefore, the accessible population of IPMA were chosen from two states, Selangor and Kuala Lumpur. Four chosen IPMA within both states also represented the two groups of IPMA, namely KPTM and KUPTM from the Higher Education group, and GiatMARA and UniKL from TVET institution group. Since the elements in the population were known [26], this study was based on complex probability sampling, a selecting stratified sampling technique for sample selection based on the IPMA group types.

As suggested by Memon et al. [27], since PLS-SEM was used to analysed the conceptual models, this study considered two methods suggested by PLS-SEM to estimate the appropriate sample size:

- A priori analysis using G Power software [28], [29].
- The sample size table by Krejcie & Morgan [30], [31].

The minimum sample sizes obtained from the priori analysis using G Power software and the sample size tables were 199 and 377, respectively. Although each method yielded a minimum size value, this study chose the minimum sample size of the highest value (377) because according to Taherdoost [32], the higher the sample size value, the less sampling error. Moreover, high sample sizes are good because they provide greater reliability to the study findings, and enable more complex statistical analysis [33]. [34] have recommend trying the methods on larger samples.

3.2 Data collection

As a data collection tool, a questionnaire was created. The questionnaire was divided into two sections: demographic information and questions about each factor. Furthermore, 8 and 30 items were evaluated to determine the factors that influenced the use of images on social media. All items in this study were rated on a 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). The validity and reliability of the measurement instrument were checked using a pilot study with a small-scale study of a group of respondents who had similar characteristics to the actual survey population [26], [35].

The pilot study on Cronbach's alpha was carried out with 40 students, and the Cronbach's alpha for all six constructs exceeded the cut-off point of 0.70 [36]. As a result, in the actual survey, all of the constructs were employed and were successfully answered by 530 respondents. However, those who submitted incomplete data were excluded, yielding 441 usable surveys.

3.3 Data analysis

There are two methods of data analysis conducted: descriptive analysis and structural equation modelling analysis. Both were conducted after the preliminary data analysis which showed 89 surveys were removed through data cleaning.

3.4 Research model

The association between UGT factors and users' satisfaction with the images used on social media is represented as research model in Figure 1 based on the literature review and proposed hypotheses. As suggested by Rautela et al. [37], research model can be empirically tested to strengthen the model developed. Figure 1 illustrates that the research model of the factors for users' satisfaction consists of enjoyment (EN), entertainment (ET), social influence (SF), social interaction (ST) and information sharing (IS). In total, there were 30 items to measure the proposed model and hypothesis.

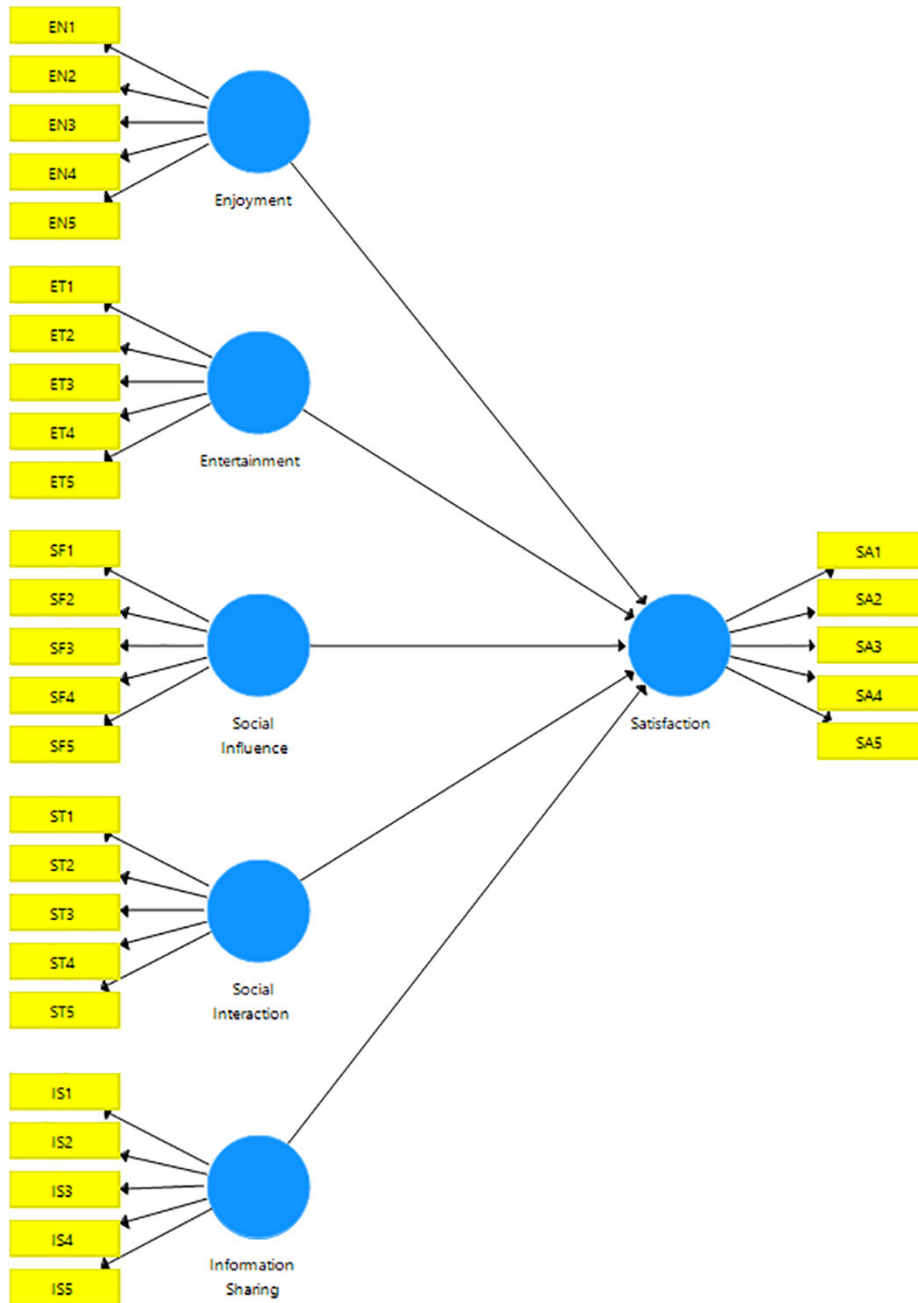


Fig. 1. Research model – measurement and structural model

4 Results

4.1 Descriptive analysis

IBM SPSS Statistic 20.0 was used to run the demographic and construct analysis.

Table 1. Descriptive analysis of demographic variables

No	Demographic Variable	Category	Frequency	Percentage (%)
1	Gender	Male	181	41%
		Female	260	59%
2	Age	Below 17	2	0.5%
		18 to 20	230	52.2%
		21 to 22	160	36.3%
		Above 24	49	11.1%
3	IPMA Type	GIAT MARA	7	1.6%
		KPTM	115	26.1%
		KUPTM	97	22.0%
		UniKL	222	50.3%
4	IPMa location	Kuala Lumpur	284	64%
		Selangor	157	36%
5	IPMa program level	Certificate	53	12.0%
		Diploma	174	39.5%
		Bachelor's degree	214	48.5%
6	Most active social media accounts used.	Facebook	68	15.4%
		Instagram	201	45.6%
		Tik Tok	97	22.0%
		Twitter	75	17.0%
7	Most preferred information types used on social media	Audio	37	8.4%
		Image	172	38.9%
		Text	86	19.6%
		Video	146	33.1%
8	Most preferred places where images are used on social media	Album	54	12.4%
		Comment	37	8.4%
		Cover photo	52	11.7%
		Post	113	25.6%
		Profile photo	92	20.9%
		Story	93	21.0%

Based on the descriptive analysis shown in Table 1, the gender breakdown of the respondents indicated that women accounted for 260 (59%) of the total respondents while men were only 181 (41%). The majority of the respondents were between 18 to 23 years old (230, 52.2%) and most of them were from bachelor program (214, 48.5%).

Compared to the other IPMAs, UniKL students had larger respondents (222, 50.3%) of total respondents and IPMA in Kuala Lumpur had greater respondents (284, 64%). Instagram was the most active social media accounts used by respondents (201, 45.6%) and 172 (38.9%) respondents preferred to use image on social media compared to other information types. The results of the analysis also showed Post (25.6%), Story (21.0%), Profile photo (20.9%) and Album (12.4%) were among most preferred places where respondents used images on social media.

Table 2 shows the results of the construct analysis for all the six constructs in the research study. The results of the analysis showed that the constructs enjoyment (EN), entertainment (EN) and information sharing (IS) had at high score level among the respondents. The rest of the constructs got scale scores at a medium level. In addition, the standard deviation showed a small value, meaning that the study data were not spread far beyond the mean value [38].

Table 2. Descriptive analysis of construct

No	Construct	Mean	Standard Deviation	Scale Score
1	Enjoyment (EN)	5.268	0.991	High
2	Entertainment (ET)	5.011	1.126	High
3	Social Influence (SF)	4.486	1.192	Medium
4	Social Interaction (ST)	4.938	1.261	Medium
5	Information Sharing (IS)	5.362	1.093	High
6	Satisfaction (SA)	4.600	1.338	Medium

4.2 Structural equation modelling analysis

SmartPLS 3.3.3 Statistical Tool was used to run the measurement and structural model. The research study used a factor analysis to test the validity and reliability of each item used in the research model in order to test Hypotheses 1–5. It was necessary to validate the measurement models for the constructs that were constrained to the same loadings. The results of the measurement models are shown in Table 3. The composite reliability (CR) is estimated to estimate reliability, with a CR of 0.8 or greater deemed acceptable for research study [39]. Table 3 shows that all constructs exceed the cut-off value of 0.8, indicating that all items support the constructs’ internal consistency.

To assess the constructs’ convergent validity, two approaches, the items’ cross loadings and average variance extracted (AVE), for each construct were used. The analysis showed four items were below 0.7, and they were deleted; EN4, EN5, ET5 and SF5. As suggested by Reinartz [40], item with low loading can be eliminated to substantially increase AVE and CR. The total items deleted were 13.33% which were less than 20% of the total items that were strongly advised to not be deleted [41].

According to Chin (1998), an AVE greater than 0.5 was considered statistically significant. The AVE value of each construct in this study was greater than 0.5. The square root of the AVE for each construct and the correlation involving the construct were evaluated to assess discriminant validity. According to Fornell C & Larcker FD [39], the square root of the AVE for each construct must be greater than the correlations

that include the constructs. The results demonstrated that the discriminant validity was acceptable. Therefore, all of the constructs were sufficiently reliable and valid to test the hypotheses.

In Structural Model Analysis, it is critical to ensure that there is no lateral collinearity in the structural model before evaluating it [43]. The lateral collinearity test results are shown in Table 3. All of the Inner VIF values for the five UGT factors that needed to be investigated for lateral multicollinearity were less than 5, indicating that lateral multicollinearity was not a concern in the research study [36].

Table 3. Lateral collinerity assessment

Construct	Satisfaction (SA)
Enjoyment (EN)	1.972
Entertainment (ET)	2.663
Information Sharing (IS)	2.123
Social Influence (SF)	2.122
Social Interaction (ST)	2.893

In this study, five direct hypotheses between independent and dependent constructs were developed. Table 5 shows that all relationships have a T-value of 1.645 and are significant since P-value<0.05. As a result, all hypotheses were accepted. The R² value of 0.630 was greater than the 0.26 value suggested by Cohen [33], indicating that this research model was significant and accepted. The change in R² value, as proposed by Hair Jr et al. [44], should also be examined and reported. Cohen [33], guidelines were used to measure effect size, with values of 0.02, 0.15, and 0.35 representing small, medium, and large effects, respectively. Table 5 demonstrates that all UGT constructs had a small effect on R² for Satisfaction.

In addition, the predictive relevance of the research model was tested using a blind-folding procedure. Hair Jr et al. [44], stated that if the Q² value was greater than zero, the model had predictive relevance for a dependent construct. The Q² value for Satisfaction was greater than zero, indicating that the model had an adequate predictive relevance. Furthermore, a reflective measure of predictive relevance, the values of 0.02, 0.15, and 0.35 indicated that an independent construct had a small, medium, or large predictive relevance for a specific dependent construct, respectively. The results showed small q² effect size for EN, ET, SI and IS constructs on satisfaction while no q² effect size was detected for SF construct on satisfaction.

Figure 2 presents the final research model on evaluating the influence factors on users’ satisfaction to use image in social media. The figure shows the summary from Tables 4 and 5, between inner model (Path Coefficient or Standard Beta), outer model (Cross Loadings) and dependent construct (R²).

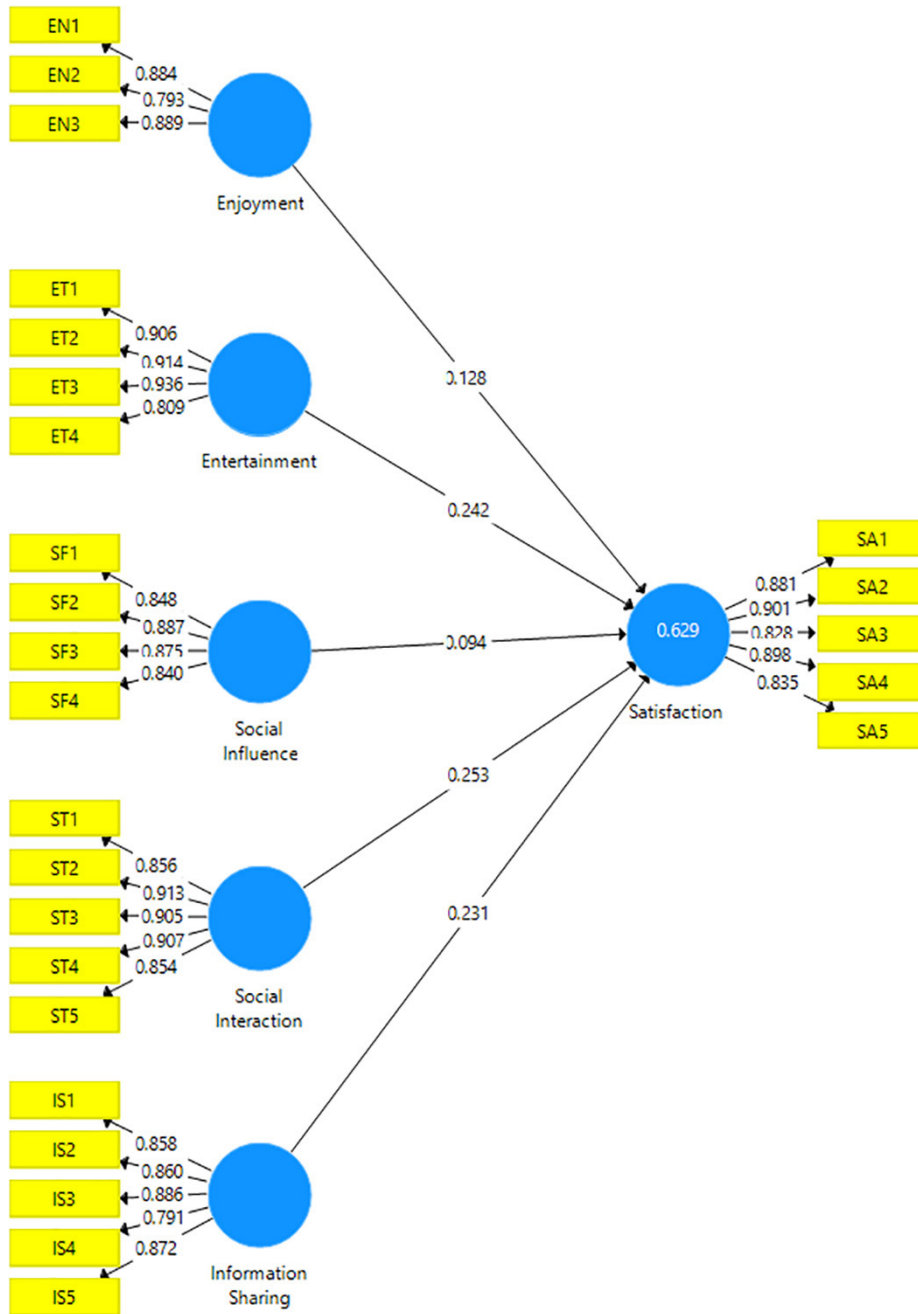


Fig. 2. Research model – measurement and structural model

Table 4. Measurement model analysis

Construct	Cross Loading	Composite Reliability	AVE	Cronbach' Alpha	Correlation of Constructs									
					EN	ET	IS	SA	SF	ST				
Enjoyment (EN)	EN1	0.892	0.734	0.818	0.857									
	EN2													
	EN3													
Entertainment (ET)	ET1	0.94	0.797	0.914	0.684	0.893								
	ET2													
	ET3													
	ET4													
Information Sharing (IS)	IS1	0.931	0.730	0.907	0.528	0.603	0.854							
	IS2													
	IS3													
	IS4													
	IS5													
Satisfaction	SA1	0.939	0.755	0.919	0.590	0.690	0.665	0.869						
	SA2													
	SA3													
	SA4													
	SA5													
Social Influence (SF)	SF1	0.921	0.744	0.886	0.435	0.609	0.513	0.594	0.863					
	SF2													
	SF3													
	SF4													
Social Interaction (ST)	ST1	0.949	0.787	0.932	0.529	0.648	0.691	0.704	0.69	0.887				

Table 5. Hypothesis testing

Hypothesis	Standard Beta	Standard Error	T-Value	P-Value	R ²	f ²	Q ²	q ²
H1	0.129	0.050	2.573	0.005	0.629	0.022	0.467	0.011
H2	0.240	0.063	3.837	0.000		0.059		0.032
H3	0.096	0.056	1.718	0.043		0.011		0.006
H4	0.259	0.057	4.556	0.000		0.060		0.028
H5	0.224	0.052	4.314	0.000		0.068		0.036

5 Discussion and future studies

Firstly, the result showed that all UGT factors, namely enjoyment (EN), entertainment (ET), social influence (SF), social interaction (ST) and information sharing (IS) were significant, and all the factors influenced users’ satisfaction on using image in social media. Information Sharing was the most influencing factors. This is supported by Liu et al. (2019). Information sharing represents the extent to which image as social media content allows users to convey and spread information, share interest with others, increase users’ social connections and be useful to others.

Secondly, the R² value calculated represented the combined effects of independent variables (UGT factors) on dependent variable (Satisfaction) and showed that the model had substantial level of predictive accuracy. This is supported by Hair Jr et al. [36], [44]. Hence, the Users’ satisfaction with image use in social media was determined by Enjoyment, Entertainment, Social Influence, Social Interaction and Information Sharing that could be derived from image as the content in social media.

Finally, the items measured were consistent with what it intended to measure. The loading values for each item were greater than 0.708, indicating that each variable could explain at least 50% of the variance for that item. This is supported by Hair Jr et al. [44]. Therefore, there are 26 items that can be used as instrument to study image use in social media while four items could be further improved.

Although this study will be useful in both academic research and managerial applications, future studies should pay attention to a few issues. This study primarily collected data from IPMA, an educational institution under the government agencies, and our findings may not be generalizable to other populations. In addition, this research model focused on factors influencing users’ satisfaction. Therefore, the model could be extended to user continuance intention and behaviour to use image in social media. Quantitative method was used; hence, a mix method or qualitative method could be used to explore different approaches and findings.

6 Conclusion

This study investigated the key considerations or factors influencing social media users’ satisfaction towards image as content. Five UGT factors were part of research model developed and analyzed. Overall, the study found that motive or gratification factors played a role as consideration factors prior to satisfaction such as Information

Sharing, the most influencing factors. Hence, a substantial level of predictive accuracy of the research model was shown based on the R^2 value (0.629) within the UGT factors and user satisfaction.

However, there were four instrument or items which were deleted due to the loading values requirement, namely EN4, EN5, ET5 and SF5. Therefore, by revising the deleted instrument or items, we were able to improve and strengthen the research model. Ultimately, this study shows that choosing image as content comes with a vast array of motive or gratification which is not easily able to satisfy users.

7 Acknowledgment

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9 Authors

Irma Syarlina Che Ilias is a Senior Lecturer at Universiti Kuala Lumpur, Malaysia. She is currently a PhD student in Computer Science at National Defence University of Malaysia. She has widely experience in computer networking and multimedia system since 2001. She also has been recognized as professional technologist by the Malaysian Board of Technologist. Her research interests include visual informatics, human behavior and social networks in computer technology.

Suzaimah Ramli received her PhD in Electrical, Electronic and System Engineering from Universiti Kebangsaan Malaysia in 2011, Master of Computer Science from Universiti Putra Malaysia in 2001, and Bachelor of Information Technology (Hons) from Universiti Utara Malaysia in 1997. Her research interests include image processing and artificial intelligence applications in various domain particularly in education, security and defence. Currently she is working as an Associate Professor at Department of Computer Science, Faculty of Defence Science and Technology, National Defence University of Malaysia. She is a member of Malaysia Board of Technologist and Informatics Intelligence Special Interest Group, UPM. She has published and presented most of her research findings to various international conferences and articles in many international journals specifically in her research niche.

Muslihah Wook received her PhD in Information Science from Universiti Kebangsaan Malaysia in 2017, Master of Computer Science from Universiti Putra Malaysia in 2004, and Bachelor of Information Technology (Hons) from Universiti Utara Malaysia in 2001. Her research interests include big data analytics and data mining applications in various domain particularly in education, security and defence. Currently she is working as a Senior Lecturer at Department of Computer Science, Faculty of Defence Science and Technology, National Defence University of Malaysia. She has become members of International Association of Computer Science and Information Technology (IACSIT) and Institute of Research Engineers and Doctors (IREED) since 2011 and 2013 respectively. Recently, she has been appointed as a technical reviewer of Education and Information Technologies and Journal of Big Data—Springer journals indexed by ISI and Scopus (Q1), and other outstanding journals as well.

Nor Asiakin Hasbullah is currently a Senior Lecturer at the Department of Computer Science, National Defence University of Malaysia. Asiakin holds a Ph.D. in IT and Quantitative Sciences (System Sciences) and Master of Science in Information Technology from the MARA University of Technology Malaysia and Bachelor Degree of Science in Information Technology (Hons.) from the National University of Malaysia. Her research interest and expertise are in the field that covers intersection between society and technology such as information privacy, ethics in ICT, social informatics and social network behaviour. She is also a professional technologist, recognition given by the Malaysian Board of Technologist.

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