



The Fifth Information Systems International Conference 2019

Empirical Study of #instastory

Ari Kusyanti^{a,*}, Harin Puspa Ayu Catherina^b, Yustiyana April Lia Sari^b

^aDepartment of Computer Science, Universitas Brawijaya

^bDepartment of Information Systems, Universitas Brawijaya

Abstract

Instagram is a social media which provides services that enable users to share photos or videos via its features called Instastory. Indonesia as the largest Instagram user in Asia Pacific region is worth studying. There are several factors affecting Instagram users to share their photos or videos, such as they are enjoying to represent themselves in an online world so that they can get connected virtually or even build new relationships. Apart from the benefits, there is hidden risk that may occur such as the misuse of personal information they have shared that may lead to privacy violation. The main objective of this study is to analyze the factors that affect Instagram users in sharing their videos or photos via Instastory by using ten latent variables and one second-order variable. The data are collected from 300 respondents who are active users of Instagram. Data from respondents are analyzed using Structural Equation Modelling (SEM) model. The results of this study show that the factors that affect self-disclosure on Instagram via Instastory are self-presentation, enjoyment, perceived collectivism, new relationship building, Internet Users Information Privacy Concerns (IUIPC) and perceived risk.

© 2019 The Authors. Published by Elsevier B.V.

This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>)

Peer-review under responsibility of the scientific committee of The Fifth Information Systems International Conference 2019.

Keywords: self-disclosure; SEM; Instastory; Internet Users Information Privacy Concerns (IUIPC)

1. Introduction

Instagram story (Instastory) is one of the features of Instagram that can be used to share various activities by using short videos or photos that will be erased automatically within 24 hours [1].

* Corresponding author. Tel.: +62-81-233-799-049; fax: +62-341-577-911.

E-mail address: ari.kusyanti@ub.ac.id

Since Instagram launches Instastory feature in August 2016, Instastory users are increasing each day. Currently, Instastory is used by 250 million users spread all over the world [2]. While total Instastory users in Indonesia increased more than 50 percent in a year, hence Indonesia the largest user in the Asia Pacific region [3]. Instastory provides a variety of interesting features so that users are able to share their photos or videos. In addition, in posting Instastory, users can add locations, tags, stickers and even create polls.

They are enjoying posting their photos or videos so that they can represent themselves in an online world. Another reason is they want to share their activities with their family and friends. Furthermore, they want to get connected with new people and build new relationship to extent network of friends. However, when they are sharing their photos or videos through Instastory there is a chance that unwittingly they are disclosing their sensitive personal information. Many users are unaware of what third parties can do with the videos or photos they've shared on Instagram. Furthermore, they do not aware of the personal information they shared have been collected and will be used without notifying the user in advance [4, 5]. Therefore, it is very important for users to be able to control what personal information to be shared online.

As with the case of Instagram in 2017, personal information of around 6 million Instagram users are reportedly leaked [6]. Personal information such as email address and phone number are exploited by hackers and each account is sold 10 US dollars [6]. This may pose a risk to the users since the personal information and what they have shared on Instagram is misused by unauthorized parties. User concerns regarding the risks when the personal information they provide is used without prior notification which violated their privacy. Several studies have been discussed in regard with the case as in [5, 7, 8, 9]. The studies investigated factors that affect the user's personal information disclosure on social networks, which are perceived control, trust in member, trust in provider, perceived risk, relationship building, self-presentation, enjoyment, convenience, and privacy preferences. The model used in this study adapts from previous studies, including research conducted by [7, 10] as an addition of users' privacy concern called Internet Users Information Privacy Concerns (IUIPC). IUIPC is a second order which consist of 3 dimensions namely collection, awareness and control. Based on this model, this study aims to identify the factors affecting Instagram users in disclosing their personal information. This paper is organized as follow. In section 2 provides the literature review of each construct and develop the hypotheses. Section 3 includes summarize the data collection procedures. Section 4 provides the results of empirical tests while Section 5 includes a thorough discussion of the empirical findings. Finally, the conclusion is presented in Section 6.

2. Model structure and hypothesis

This research is confirmatory research based on model and hypothesis by [7, 10]. Each construct of the model along with the hypotheses are explained below.

1. Definition of construct

The definition of each constructs that used in this research is presented in Table 1.

2. Hypothesis for the construct

Perceived risk can be defined as the great expectation of the information being shared is not widespread to the community [10]. It can be interpreted that the greater the trust of users to a social media can affect the perceived risk. The greater the confidence in a social media can make users not feel worried about personal information they share will be widespread or there are third parties who use the information they have shared [11]. In the case of Instagram, it provides control over the videos or photos they share by limiting who can view the videos or photos they share with the public. This control feature can increase user trust to Instagram [12]. In addition to the trust of providers, other users are also important elements that influence users to open up [13]. So that can be drawn some hypothesis, that is:

- *H1a: Perceived control has a significant effect on perceived risk.*
- *H1b: Trust in member has a significant effect on perceived risk.*
- *H1c: Trust in provider has a significant effect on perceived risk.*
- *H2: Perceived risk has a significant effect on self-disclosure.*

Self-disclosure can be defined as behaviour of disclosing personal information to others [12]. The interaction that occurs in the virtual world allows to share personal information with unknown people. The possibility of users sharing information with unknown people via Instastory can be caused by several factors such as goals or benefits they get by

sharing videos or photos on Instagram. Perceived collectivism describes a culture in which people are integrated into one group. Instagram users are a group of people who are mutually integrated with one another, sharing videos or photos on Instagram can cause users more open to other Instagram users. Self-presentation is defined as the process someone reveals to others about their characteristics. Expressing the characteristics can cause a person more open to others, either in the form of sharing their profiles or daily or their habits by sharing videos or photos via Instastory. Enjoyment is defined as the factor of users using online social networking because they feel comfortable and happy that will encourage them to share personal information in greater detail [12]. Therefore, enjoyment is one of factors that can cause users more open about themselves through the video or photos they share on Instagram.

New relationship building is defined that through social media users can establish relationships with people who are known in the real world or establish new relationships with new people [12]. By disclosing their personal information online users expect to get to know other people.

Table 1. Definition of Construct.

Construct	Definition
Internet Users' Information Privacy Concerns (IUIPC)	IUIPC is a model used to describe the attention of Internet users on information privacy. In this model, there are 3 dimensions: collection, control and awareness.
Collection (COL)	To measure the individual's concerns about the activities of social media service provider in collecting their personal information.
Control (CON)	To measure the extent to which users can control the personal information they have provided to service providers.
Awareness (AW)	To measure the individual's concerns about the activities of social media service provider towards their personal information they have given
Perceived Risk (PR)	To measure the extent to which the risk that may occur when an individual chooses to share personal information to a social media.
Perceived Control (PC)	To measure the extent to which when an individual can control the information that has been shared on social media.
Trust in Member (TM)	To measure the trust of individuals to what other users can do to information they have shared on social media.
Trust in Provider (TP)	To measure the trust of users regarding the information they have given to the selected social media service provider.
New Relationship Building (NRB)	To measure the extent to which a user can establish relationships with known people in the real world or establish new relationships with new people on social media.
Self-Disclosure (SD)	To measure the extent of people behaviour of disclosing information personally to others on social media.
Perceived Collectivism (PCOL)	To measure the extent of a group of people who are mutually integrated, share personal information that can make users more opening up to other users.
Self-Presentation (SP)	To measure the extent of a user when revealing their characteristic to other users on social media.
Enjoyment (EN)	To measure the extent to which users have a comfortable and pleasant feeling when users share personal information in greater detail on social media.
Social Influence (SI)	To measure the extent to which a person's beliefs and behaviours are influenced by the actions of others or a group of people around them.

Social influence is a process whereby a person's attitudes and perspectives are influenced by people that are of important to them [12]. Hence the behaviour of users more open themselves by sharing their video or personal photos via Instastory is the influence of another person or a group. Based on the aforementioned discussion can be drawn some hypothesis, which are:

- *H3a: Self-presentation has a significant effect on self-disclosure.*
- *H3b: Enjoyment has a significant effect on self-disclosure.*
- *H3c: Perceived collectivism has a significant effect on self-disclosure.*

- *H3d: New relationship building has a significant effect on self-disclosure.*
- *H3e: Social influence has a significant effect on self-disclosure.*

Sharing personal information on online social networks can possess threats such as personal information misused by third parties or may cause defamation [10]. Perceived privacy concern encourages users to be more aware to limit the amount of personal information they share on Instagram so that these two factors can minimize the risks that may occur. Therefore, the formulated hypothesis is:

- *H4: Internet User's Information Privacy Concerns (IUIPC) has a significant negative impact on self-disclosure.*

Based on the above hypotheses, we developed the research model as shown in Fig. 1.

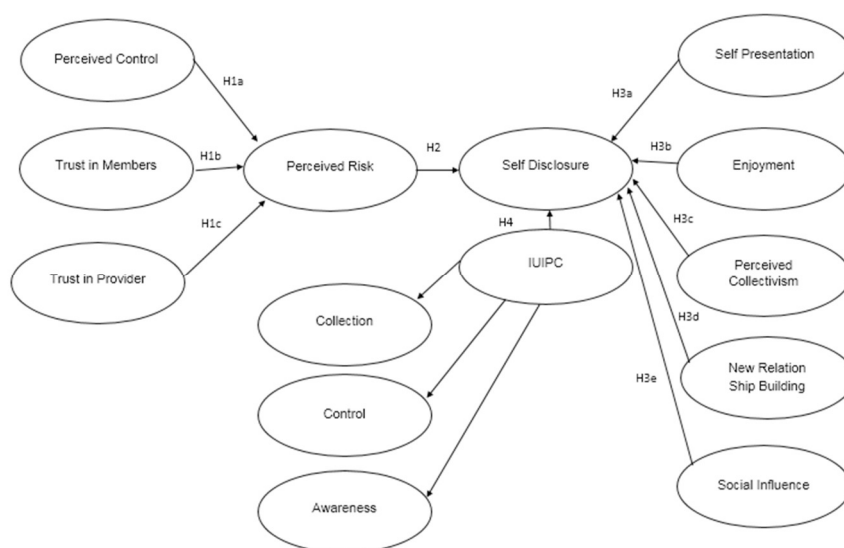


Fig. 1 Research Model.

The model in Fig. 1 will be used to depict the relationship between latent variables of the factors affecting Instagram users in disclosing themselves online. Based on the model, a questionnaire is developed to obtained respondents data.

3. Data collection procedures

Data were collected using a paper-based questionnaire from Instagram users who were active in using the Instastory with an age range from 18 to 24 years old. Respondents were selected to fill out the questionnaire in this study were selected randomly using simple random sampling technique that had an age range from 18 to 24 years old. Selection of respondents with age range 18 to 24 years old because based on surveys conducted found that the largest user group Instagram users in the world are users who are aged with a range of 18 to 24 years old [14]. The questionnaires are distributed to Instagram users in Indonesia in December 2017 – January 2018. A total of 300 questionnaires obtained from users who are actively using Instastory on Instagram. The data is analyzed using Structural Equation Modelling (SEM). The reason why in this research using Structural Equation Modeling (SEM) because it provides a systematic mechanism for validating relationships between constructs and can be used to test relationships between constructs contained in single model and it offered powerful and conscientious analysis technique to test a complex models [15].

4. Data analysis

There are two stages in this SEM analysis i.e. measurement model and structural model. Measurement model is used to determine the relationship connection between indicator and variables while structural model shows the relationship between latent variables.

- Missing Data and Outlier

Based on Little's MCAR, there is no missing data in this study. Mahalanobis distance is used to determine an outlier. Data which has Mahalanobis distance of more than 65.870 is considered the outlier and have to be removed from data processing. From 300 questionnaires collected, there are 31 outliers, so the eligible data to be analyzed are 269.

- Reliability Test

Reliability testing is performed based on Cronbach alpha for every latent variable. Which passed all the cut-off value of Cronbach alpha.

- Factor Analysis

Kaiser-Meyer-Olkin Measure (KMO) is used for sampling adequacy test [16]. KMO value considered good if its value is more than 0.5. In this study KMO test results obtained is 0.882, therefore it can be concluded that the study has a good sampling adequacy and can be proceed to the next analysis.

- Normality Test

Normality test is used to determine whether the data has been distributed normally or not [16]. If the value of significance p Sig. > 0.05 then the conclusion is that the distribution of data is normal, otherwise the distribution of test data is not normally distributed [16]. Results of the significance value p of the overall calculation is 0.082. Based on the results of the normality test performed obtained all data has exceeded the limit of significance p so data distribution is considered normal.

- Levene Test

Levene's test is used to determine whether the data obtained is homogeneous or not [16] so it can be used for subsequent statistical analysis. Data are considered homogeneous if Sig. > 0.05 , but if Sig. < 0.05 then the data is considered not homogeneous. All variables used in this study have value significantly above 0.05 so it can be said all data has been fulfilled criteria of homogeneity.

- Measurement Model Fit

Measurement model fit test is used to determine the relationship between latent variables and its indicators. Measurement model fit test results can be seen in Table 2 along with the squared multiple correlation in Table 3. Based on Table 2, the study has met all the determined criteria. It can be concluded that the research method is fit and can be continued to test structural model fit. The r-square of a variable is the percentage of its variance that is accounted for by its predictors. In this study, all the endogenous variable account for 63% of the variance of self-disclosure.

- Structural Model Fit

Path analysis is used to perform the advanced test which is structural model fit. This test is used to determine the relationship between latent variable to the model. The results of structural model fit can be seen in Table 4. The indicators of structural model fit test is the p-value that has to be more than 0.05. In pursuant to Table 4, the relationship between variables with p-value less than 0.05(*) indicates that the hypothesis is accepted.

5. Research result and discussion

- Discussion On Hypothesis 1a

From the results, Hypothesis 1a is accepted. The results show that perceived control can affect perceived risk. Respondents argue that by being able to control the videos or photos they share, and by being able to take advantage

of the privacy settings provided by Instagram can minimize the risk that may occur when sharing their video or personal photos on Instagram. The privacy settings provided by Instagram that is used to manage which person can view the videos or photos they share or view the information they provide on their profiles, can reduce the user's fear of risks they may experience such as the dissemination of information or videos they share on Instagram.

The results of this study are similar to the results of research conducted by [7] which states that the more users who can control their personal information, the less the level of users worries of the risks obtained.

- Discussion on Hypothesis 1b

Hypothesis 1b is not accepted. The results show that trust in other users in Instagram (trust in member) does not affect perceived risk. Respondents argued that trust in other users in Instagram did not affect or change the risks that may occur when sharing videos or photos through Instastory. Respondents do not trust other users, since they think that other Instagram users are dishonest and do not keep promises, such as other users who misuse personal information or video or photos they share on Instastory.

The results of this study are similar to the results of research conducted by [12] which states there is no effect between trust in members with risk because the user is only concerned about the services that have been provided and the level of privacy settings. They tend to be concerned about the risks they get such as gathering their information that can be misused.

Table 2. Goodness of Fit Index.

Index	Criteria	Value	Info
<i>Chi-square</i>	>0.05	421.222	Good
CMIN/DF	1.00 < CMIN/DF < 3.00	1.983	Good
GFI	>0.9	0.906	Good
RMSEA	<0.05 good fit	0.047	Good Fit

Table 3. Squared Multiple Correlation.

Index	Value
Collection	0.720
Control	0.341
Awareness	0.602

Table 4. Structural Model Fit Result.

Hypothesis	P-Value	Info
	<0.05	
PR ← PC	.003	Accepted
PR ← TP	.745	Not accepted
PR ← TM	.088	Not accepted
SD ← EN	***	Accepted
SD ← NRB	***	Accepted
SD ← IUIPC	.002	Accepted
SD ← SI	.245	Not accepted
SD ← PR	***	Accepted
SD ← PCOL	.022	Accepted
SD ← SP	***	Accepted

- Discussion on Hypothesis 1c

Hypothesis 1c is not accepted. The results indicate that users' trust to the service provider (trust in provider) does not affect the risk received by the Instagram user (perceived risk). Respondents argue that they do not fully believe in the Instagram providers regarding the storage and security of their personal information or the videos and photo they share via Instastory. This caused users worry about the risks they are experiencing while using Instastory. According to respondents, Instagram is still less open about the processing and storage of users personal information, Instagram is also less committed to its users with the information they provide so that users have not fully trusted sharing personal information or videos or images on Instagram.

The results of this study are similar to the results of a study conducted by [17] which states that there is no influence between trust in provider and the risk caused by the number of users who believe in social media but does not affect the risk obtained by the user.

- Discussion on Hypothesis 2

Hypothesis 2 is accepted. The results demonstrates perceived risks affecting users to disclose themselves on Instagram via Instastory. Respondents argue that trust in Instagram, trust in other users and perceived controls affect the risks they feel. They perceive the risk of sharing videos or photos on Instagram, limiting the self-disclosure of Instagram stories by restricting friends who can view the profiles and videos they share, and they restrict every video they share via Instastory. Respondents continued to include personal information on their profiles and kept their private videos via Instastory, but they felt that there are at risks.

The results of this study are similar to the results of research conducted by [18] which states that many users who can feel the benefits of using social media or by providing their personal information so they do not care about the risks that may be occur.

- Discussion on Hypothesis 3a

Hypothesis 3a is accepted. The results suggest that self-presentation has a significant effect on self-disclosure. Respondents argue that sharing a video or photo on Instagram via Instastory can help them to represent themselves online. In addition, completing their profiles on Instagram, through videos or photos they share with friends, is one way to talk about themselves to other Instagram users. Sharing videos about their current activities, and updating profiles when they have spare time is what they do for presenting themselves virtually. By disclosing themselves they want to create a good impression so that they can get to know other users by showing their good side.

The results of this study are similar to the results of research conducted by [12] which states that when a user of a social media can reveal about their characteristics to other users indirectly they include someone who likes more open to others.

- Discussion on Hypothesis 3b

Hypothesis 3b is accepted. The results imply that enjoyment has a significant effect on self-disclosure. Respondents argue that their preference for sharing videos or photos in Instagram via Instastory is one factor that makes them reveal themselves to other users. When they get bored, they often open up an Instastory and even spend their free time using Instagram, either just viewing Instagram stories from other users or sharing videos or photos on friends list on Instagram. They also feel comforted by using Instagram stories either in their free time or relaxed. The fun and comfort they get when using Instagram stories makes them want to express themselves through Instagram stories.

The results of this study are similar to the results of research conducted by [12] which states that when users feel comfortable and happy in using a social media they will tend to continue using it, so social networks that develop hedonic or fun platforms will encourage users to share personal information in more detail.

- Discussion on Hypothesis 3c

Hypothesis 3c is accepted. The results show that a sense of togetherness (perceived collectivism) influences the user to better reveal themselves on Instagram. Respondents argue that they feel a sense of belonging with other Instagram stories users, they also spend time together and even show their care with other Instagram users in their friends list. The sense of comfort that respondents feel when getting along with other Instagram stories users makes them want to disclose and express themselves through Instastory. Their openness by completing profiles on Instagram,

updating profiles when they have free time, and sharing with other Instagram users by sharing their video of the activity or photos.

The results of this study are similar to the results of research conducted by [12] which states that when users who use social media are a group of people who are integrated or connected to one another, sharing personal information can encourage users to be more open to other users.

- Discussion on Hypothesis 3d

Hypothesis 3d is accepted. The results showed that building a new relationship has a significant effect on self-disclosure. Respondents argue that by sharing their videos or photos they can communicate with new people they have not previously met, and it can also expand the network of friends and add new friends.

The results of this study are similar to the results of research conducted by [7] which states that when someone uses a social media to establish relationships with people who are known in the real world or establish new relationships with new people then it will make them to tend to provide personal information to people they just know through social media.

- Discussion on Hypothesis 3e

Hypothesis 3e is not accepted. The results indicate that social influence has no significant effect on self-disclosure. Respondents argue that they use Instagram stories not because they are influenced by other people or the people closest to them. They use Instastory because of their own desires and they feel a lot of advantages they can get when opening up themselves through Instagram stories by sharing their videos or photos.

This result is similar to the results of a study by [19] which states that when a social media user feels that the social media can make them comfortable and can give satisfaction to the user, then the user will tend to use the social media without influence from the people around them.

- Discussion on Hypothesis 4

From the results of Hypothesis 4 is accepted. The results show that privacy concerns of users has a significant influence on self-disclosure using Instastory. IUIPC is a secondary order consisting of control, collection and awareness variables. Respondents argue that the control over personal information or shared videos and pictures, the awareness of how much personal information and videos are shared and how much information is collected in relation to personal information and video is one of the concerns they perceive as one of the privacy concerns faced by every internet user. So that factor becomes the cause they do not fully provide their personal information on Instagram. Full control of how much personal information or videos they share can reduce the privacy issues faced by Internet users so it is not their obstacle to express themselves through Instagram. Respondents argue that concerns about privacy concerns that may be felt by the unauthorized party may lead them to control their self-disclosure when sharing videos or images on Instagram.

6. Conclusion

Factors affecting Instagram users in Indonesia to share their photos or videos via Instastory in Instagram is worth studying since Indonesia is the largest Instagram users in Asia Pacific region. Based on the analysis result, the factors are self-presentation, enjoyment, perceived collectivism, new relationship building, IUIPC and perceived risk. Respondents argue that by sharing videos or photos via Instastory is one factor that causing them to disclose themselves to other Instagram users. There are a lot of advantages that can be gained by the users when they are disclosing themselves. Respondents argue that they feel a sense of belonging with other Instagram users, they also spend time together and even show their caring with other Instagram users in their friends list. Moreover, they can communicate with new people they have not previously met, and it can also expand the network of friends and add new friends. However, even though they are aware of the risk that may occur, it does not stop them in disclosing themselves online. This is due to the features offered by Instagram that enable users to control the amount of information they shared by limiting and restricting friends who can view the profiles and videos they share.

References

- [1] Instagram. (2017) “Menggunakan Instagram [Title in English: *Using Instagram*].” Available from: <https://help.instagram.com/1257341144298972>.
- [2] Agung, B. (2017) “Dibanding Dunia, Instagram Stories Indonesia Lebih Panjang [Tile in English: *Comparing to the World, Instagram Stories in Indonesia is Extended*].” Available from: <https://www.cnnindonesia.com/teknologi/20170726151712-185-230472/dibanding-dunia-Instagram-stories-indonesia-lebih-panjang/>.
- [3] Yordan, Y. (2017) “Indonesia Negeri Instagram Stories [Title in English: *Indonesia, A Place for Instagram Stories*].” Available from: <https://kumparan.com/jofie-yordan/indonesia-negeri-Instagram-story>.
- [4] Dwyer, C., Passerini, K., and S. R. Hiltz. (2007) “Trust and Privacy Concern within Social Networking Sites: A Comparison of Facebook and MySpace” in *Proceedings of the Thirteenth Americas Conference on Information Systems*.
- [5] Kuo, K.-M., and P.C. Talley. (2014) “An Empirical Investigation of the Privacy Concerns of Social Network Site Users in Taiwan.” *International Journal of Scientific Knowledge* **5** (2): 2305-1493.
- [6] Novianty, D., and A. G. Pratomo. (2017) “Enam Juta Akun Instagram Bocor, Satu Akun Dijual Rp100 Ribuan [Title in English: *Six Millions Instagram Account Leaked, Each IDR 100K*].” Available from: <https://www.suara.com/tekno/2017/09/05/132500/enam-juta-akun-Instagram-bocor-satu-akun-dijual-rp100-ribuan>.
- [7] Buckel, T., and F. Thiesse. (2013) “Predicting The Disclosure of Personal Information on Social Networks: An Empirical Investigation.” Germany, University of Wurzburg.
- [8] Krasnova, H., K. Koroleva, S. Spiekermann, and H. Thomas. (2010) “Online Social Networks: Why We Disclose.” *Journal of Information Technology*.
- [9] Xu, H., T. Dinev, and P. Hart. (2011) “Information Privacy Concerns: Linking Individual Perceptions With Institutional Privacy Assurances.” *Journal of the Association for Information Systems* **12** (12): 798-824.
- [10] Malhotra, N. K., S. S. Kim, and J. Agarwal. (2004) “Internets User Information Privacy Concerns : the Construct, the Scale, and a causal Model.” *Information System Research* **15**: 336.
- [11] Mayer, R. C., J. H. Davis, and F.D. Schoorman. (1995) “An Integrative Model of Organizational Trust.” *The Academy of Management Review* **20** (3): 709-734.
- [12] Grabner-Kräuter, Sonja, and Ewald A. Kalusha (2003), “Empirical Research in On-line Trust: A Review and Critical Assessment.” *International Journal of Human-Computer Studies* **58** (6): 783-812.
- [13] Yat, S. C., and W.H. Pang. (2012). “Factors Affecting Online Self-disclosure of University Facebook Users.” *Information Systems and e-Business Management*, Hong Kong Baptist University
- [14] Smith, K. (2015). “41 Incredible Instagram Statistics.” Available from: <https://www.brandwatch.com/blog/instagram-stats/>.
- [15] Chandio, F. H. (2011) “Studying Acceptance of Online Banking Information System: A Structural Equation Model.” London: Brunel University.
- [16] Field, A. (2009). “Discovering Statistics Using SPSS.” Mu'tah University, Karak, Jordan: SAGE Publication.
- [17] Zhang, L., L. Long, L. Z. Xu, and W. Tan. (2013) “The Influences of Perceived Factors on Consumer Purchasing Behavior: In the Perspective of Online Shopping Capability of Consumers.” *Research Journal of Applied Sciences, Engineering and Technology* **5** (24): 5632-5638
- [18] Rogers, M. (2010) “Consumers’ Attitudes, Perceived Risk, Trust and Internet Banking Adoption in Uganda.” Doctoral Dissertation, Makerere University.
- [19] Lin, R. and S. Utz. (2017) “Self-disclosure on SNS: Do Disclosure Intimacy and Narrativity Influence Interpersonal Closeness and Social Attraction?” *Comput Human Behav.* **70**: 426–436. doi: 10.1016/j.chb.2017.01.012.