SNS. However, for the purpose of the factor analysis validity, the subscale for the measurements consisted of 4 items, therefore the cronbach's alpha was 0.936 respectively.
Cronbach's alphas for the online video culture items was 0.775 (see Table B.1).

Table B.1
Convergent Validity.

Construct	Items	Factor Loadings	Cronbach's alpha
Media sharing activities on SNS	MSA1	0.826	0.936
	MSA2	0.823	
	MSA3	0.808	
	MSA4	0.789	
Online Video Culture on SNS or mobile apps	OVC1	0.851	0.775
	OVC2	0.812	
	OVC3	0.746	
	OVC4	0.662	

Appendix C. Supplementary data
Supplementary data associated with this article can be found, in the online version, at http://dx.doi.org/10.1016/j.tele. 2016.10.009.

highlighted senior citizens are broadly now interacting with social media platforms.

Future researchers can investigate these issues to help expand the understanding of social network usage, and the con- tinuance use of social media in the future.

6. Conclusion

In this paper, the study presented an examination of the extended use of OSN. It measured active interactive relationships developing on social networking sites to demonstrate the diversity of online activities, and the variables that influence the structural characteristics of using OSN. Supplementary to social network analysis research, this study epitomizes the influ- ential entities of OSN such as usage and motives, the diffusion patterns and emerging trends of communication activities to increase social media value. It is hoped that the findings of this research will encourage a deeper future investigation into the social structure and usage patterns of media content on online social networks. Along with using the prediction methods to predict future trends of OSNs from cross - cultural contexts.

Funding

For the purpose of this research, no funding sources had any involvement during conduction of study.

Appendix A.1. Survey Items

Construct	Code	Item
media sharing activities on sns	MSA1	Do you ever post PHOTOS that you, yourself, have taken to any kind of ?website
	MSA2	Do you ever take images that you find online and share or repost them on ?sites designed for sharing images with many people
	MSA3	Do you ever post VIDEOS that you, yourself, have taken to any kind of ?website
	MSA4	Do you ever take videos that you find online and share or repost them on ?sites designed for sharing videos with many people
Online Video Culture on SNS or mobile apps	OVC1	Please tell me if you ever use the internet to do any of the following things. Do you ever watch videos on a video-sharing site like YouTube or Vimeo
	OVC2	Please tell me if you ever use the internet to do any of the following things. Do you ever watch videos online, including on social network sites or using mobile apps
	OVC3	Next, please tell me if you ever use your CELL PHONE to do any of the following things. Do you ever use your cell phone to record videos
	OVC4	Next, please tell me if you ever use your CELL PHONE to do any of the following things. Do you ever use your cell phone to watch videos

Appendix B.1. Internal consistency reliability

B.1.1. Cronbach's Alphas

Values to report: The number of items that make up the subscale, and the associated Cronbach's alpha.

Examples

The media sharing activities on SNS subscale consisted of 5 items (a = 0.855), the fifth item included the question "Do you ever use the internet to use a social networking site like Facebook, LinkedIn or Google Plus?" This item was included in the construct as it positively measured media sharing activities on

social networks. Third, dependent variables that affects the social usage patterns such as the type of users, and the methods of interaction in order to predict the use of OSN in the future.

An implication of these findings is that it provides a practical perspective on the network structure, evolving communi- cation patterns, the tendency to use social networks, and the predictors for the continuance use of SNS.

The contribution of this study can be summarized as follows:

1. The findings reveal that gender and age were significant predictors of using social networking tools, representing the net- work of social interactions among users who form the inter-connectivity of OSN. Moreover, the relationship between age and online adults using social networking sites demonstrated a strong correlation, due to the high dynamics of SNS users' activities. The results also provided predictor variables that can be attributed towards the adoption and usage of social networking sites. It is clear that: age, mobile internet access, and gender are key determinants for continuance use with over 70% of online adults predicted to actively engage with social networks in the future.
2. Online video culture is on the increase as the statistics showed that the extended use of video tools have become part of the social capital and the intensity of social network use. Furthermore, video sharing significantly dominates over photo sharing, for the drift towards the growth of online communication that represents the interaction pattern trends between the connected users. Thus, the exploitation of online content (posting videos) and (watching videos) on OSN shapes the network and community structure of online media content as a result of users' activity links.

5.1. Limitations and future research

Although this study provided valuable and interesting findings, the research also identified some limitations.

- Firstly, the sample used for the study was only based on a national survey collected between 2012 and 2013 by PEW research center. Further studies are required to establish if users interaction with SNS have changed or taken a different approach on the type of activities they participate in when using SNS. Future studies can use recent surveys conducted by Pew Internet and American Life Project on Americans' use of the Internet to gain new insight on social networking usage.
- Secondly, the sample consists of only US participants, further research needs to be conducted in cross-cultural contexts as the results should be generalizable to other regions. The findings suggest that this approach would also be beneficial in other areas.
- Thirdly, the sample only included respondents who used Facebook, LinkedIn and Google+. Future larger studies with sta- tistical analyses that include users who engage with other mainstream social media platforms such as Twitter, Instagram, Pinterest and Tumblr; would be of interest to researchers on how future online activities are conducted by users, and if the predictor variables also highlight the same trend for future communication activities on SNS.
- Lastly, the relationship between age and respondents who use social media could be elaborated further. More research in this area is necessary to establish if there is a large difference in different age categories. For example, research can be conducted to show if respondents in the older age group are using social media more than they did five years ago, as recent research has

Chen et al. (2012) pointed out that the development of web technologies and the propagation of web applications allow users to be more enthusiastic to share with other users about their daily lifestyles and activities. Con- sequently, it shows the interaction patterns across larger user groups.

In contrast to some reports in the literature, there were few differences in the perception of future social network usage. Among empirical research, Ong and Day (2010) studied user satisfaction and continuance intention in the context of social media services. They found that confirmation, perceived social influence, and perceived enjoyment are significant positive predictors of user satisfaction and continuance intention of using social media services. According to Ong and Day (2010), the findings suggest that the continuance intention to use social media services is significantly related to the key determi- nants that affect user satisfaction: confirmation, perceived social influence, and perceived enjoyment whereas the effect of satisfaction improves continuance intention.

On the other hand, the study by Xu et al. (2012) provided insight on the influences that point to individuals using SNS. In the study, four gratifications that individuals seek when using SNS included: coordination, immediate access, affection, and leisure. Additionally, SNS usage was hugely influenced by social presence. This may suggest that individuals largely use social media platforms due to the beneficial impact it has on their social interaction with others.

However, Lin and Lu (2011) found that enjoyment is the most powerful factor contributing to the continued intention to use SNS for both men and women. One of the reasons for attracting users to continue to use SNS is due to the ability to provoke central enjoyment with friends with shared entertainment posts. Further, social links pin point the interactive relationships between connected users. Thereby, content on OSNs are produced by a number of highly active division of users (Kim, 2011).

Indeed, the accomplishment of Web 2.0 and social media is the ability to catch the attention of a large number of users. This is by the social link patterns that embody the social interactions, such as the type of interaction, the time in the network, and the type of users engaged on the network (Lim et al., 2012). More specifically, interaction and connection is the objective of most users, as OSN sites reinforces people to connect with friends and others, and also help people learn more about events, activities, and other social functions (Cheung and Lee, 2010). This certainly demonstrates that the continuance inten- tion to use social networks increases the popularity of the technology (Chen et al., 2012). The analyses highlight the driving mechanisms that influence the network structure within OSNs due to the users' behaviour of popular online activities con- ducted on OSN.

Moreover, social media features are now ubiquitous and has dynamic properties, it is thereby easy for Web 2.0 tools to be developed into pioneering online communication avenues. Similarly the features can be extended and evolved into rich fea- tures of Web 3.0 (Garrigos-Simon et al., 2012; Kreps and Kimppa, 2015).

This paper has demonstrated the long term implications of using social networks. This is the first study, to the research- er's knowledge, to examine, first, a utilization of large scale online content trending on social media platforms. Second, data that identified network members who impact the use of OSN as the core users and the connections among the users who engage on

posts and comments.
Meanwhile, there seems to be a general agreement on the growth of online video sharing (Benevenuto et al., 2009; Gürsun et al., 2011; Li et al., 2012; Roy et al., 2013; Pinto et al., 2014; Liikkanen and Salovaara, 2015). However, in the view of Li et al. (2012), the vital factors that contribute to video popularity are users' interests in the video and the duration of interest. Additionally, Gürsun et al. (2011) demonstrated that two types of videos are popular with users: videos that rapidly change in popularity, and videos that are continuously popular over longer periods. Yet, Roy et al. (2013) found that the rise in video sharing is due to the social prominence of the video topic (context), where current social trends on social media platforms such as Twitter spark huge interests from online users when they spread from the Twitter domain to the video domain.
In contrast, Benevenuto et al. (2009) revealed that content uploaded on YouTube has reached a high level of rate as some category of content such as music, become an immediate hit. Again, other content will receive an emergent rise of attention, which point towards the idea that derivative videos encourage more active viewer participation through commenting and voting. Correspondingly, the video sharing platform 'YouTube' enhances online interaction between users as it allows them to exchange knowledge and express ideas through video interactions (Benevenuto et al., 2009). This promotes the perception that video-based communication is favoured over textual communication, building a new phenomenon for online commu- nication. At the same time, Pinto et al. (2014) and Liikkanen and Salovaara (2015) both showed that YouTube is able to attract millions of hits due to the attention of the dynamic audiences globally. Complementary to the findings from other studies, the measurement results can confirm that users significantly skew towards the sharing of video content on online social networks more than photo content. Of particular interest to social network analysis research, the study confirms that video sharing highlights the online communication patterns among users as part of the community, and network structure of OSN. The results are also positively correlated to activity links and diffusion patterns of social media content.
Thus, the present study bears the potential influences of those factors on the future use of social networking sites which shapes the inter-connectivity and interactions of active users in the network. The pattern of online content production and consumption exemplifies a strong emergence of media content for social interaction on OSN. It also provides a representa- tion of how high and large the size of the network is, as the degree of connectedness is much higher, and the activity of the users is much larger based on the number of users who engage on the network, and the number of connections they have.
Regarding such a pattern, given the popular rise of the commonly used social media platforms, and the impact it has on people's daily lives, the quantitative data showed that the high-level use is not likely to change due to the increase of media sharing tools of Web 2.0 applications. The findings support the study of Chen et al. (2012) who show the growth and popular increase of OSN; and how a large subset of highly active users heavily influences the usage of social networks, and in exchange facilitates the satisfaction of users globally. More importantly, as social networks are built on Web 2.0 applications with a heavy focus on active interactions between the connected users, the success of the tools are contingent on the growth of 'people'. Furthermore,

forms the heavy network of OSN in emphasizing the continuance to use it.
However, the result also contradict the study of Correa et al. (2010) who illustrates that although both extraverted men and women were more likely to be frequent social media users, only men with more levels of emotional instability were the most regular users. Despite their findings, one would expect women irrespective of their behaviour to be attracted to social networking sites.
Nevertheless, these predictors are the key determinants which demonstrate that the network structure constitutes a large percentage of users that can be attributed to most of the interactions that will occur on social networking sites in the near future.
The discriminant function positively predicted that 72% of online adults would utilize a social networking tool in the future which is a large percentage indicating that the growth of social media technology is not likely to decrease. These findings concur with other studies that show that people who engage with social media sites is driven by a sense of community and social pres- ence (Scheepers et al., 2014). People extend their interaction ties by connecting with others through forming their own com- munities to find information, fulfill enjoyments, and maintain close relationships with friends, families and new people through a variety of social networking tools (Raacke and Bonds-Raacke, 2008; Lim et al., 2012). As a result, SNS has the ability to strengthen human relationships that are beneficial for social capital (Burke et al., 2011; Kim, 2011). Thus, social action strongly impacts peoples' continuous intention to use social networks (Cheung and Lee, 2010; Kim, 2011), whilst influencing their communication and network behaviour. The quantitative results from the network analysis revealed that the high degree of connectedness highlights the usage pattern of a network that influences communication, and social structure.
The analyses further showed that a positive correlation exists between age and users who engage on social networks, which demonstrates the network dynamics of users' interactions on online social networks, specifically when looking at content that represents individuals' topical interests (Han et al., 2015). This also substantiates the subset of social links that represents interactive relationships on social media platforms.
The results are broadly consistent with studies that suggest teenagers and younger adults show a higher proportion of daily usage on SNS to maximize their social capital (Pfeil et al., 2009; Madden et al., 2013). Similarly, older adults are show- ing increase of use due to their openness to new activities in order to connect with a variety of people (Lenhart and Madden, 2007; Pfeil et al., 2009; Correa et al., 2010; Duggan and Brenner, 2013; Duggan et al., 2015; Perrin, 2015).
Finally, the study explored network features and diffusion patterns of social media content which illustrates the long term implications of OSN.
The aim of the experiment is to determine whether any particular pattern will emerge to demonstrate how users engage on social networks, and how they respond to content produced by other individuals. The results suggest that video content highlights the content production dynamics on social media platforms. Online users exhibit a higher tendency to post new videos to actively engage with others, demonstrating the increase of online video content. The statistics in the study demonstrate that the community size and network structure is illustrated by the utilization of online content such as updated

Table 9
Predictors for social media use.

OSN Factor Variables	Wilks' Lambda	F	df1	df2	.Sig
SEX	0.987	24.502	1	1870	0.000
Use of Internet	0.991	17.460	1	1870	0.000
Employment Status	0.997	5.720	1	1870	0.017
Education level	0.998	4.476	1	1870	0.035
AGE in 4 Groups	0.864	293.689	1	1870	0.000
Internet Access on smartphones, tablet or other mobile handheld device	0.944	110.951	1	1870	0.000

Table 10
Classification results for predicting future social networking use.

		Use a social networking site like Facebook, Linke-+dIn or Google	Predicted Group membership		Total
			Yes	No	
Original	Count	Yes	861	335	1196
		No	208	468	676
		Ungrouped cases	0	381	381
		Yes	72.0	28.0	100.0
		No	30.8	69.2	100.0
		Ungrouped cases	0.0		100.0

71.0% of original grouped cases correctly classified.

In addition, gender was a major predictor as the results suggest that females are more likely to use OSN. This is interesting as the gender impact complement the study of Lin et al. (2013), who reported that the gender variance for the continuance use of Facebook included 64.3% for females compared to 62.7% for males. This implies that the usage data con- sists of women who account for the majority of communication that occurs on social networks. What is more, women and men differ significantly when using OSN, as men are not greatly influenced by the tools, particularly for building relation- ships with people.

Conversely, a study from Chan et al. (2015) reported a different view regarding the role of gender towards user satisfac- tion. It revealed that men tend to have a better understanding of social networking tools and occasionally use SNS for enter- tainment purposes. Whereas female users find the tools user – friendly but are largely attracted to SNS for maintaining relationship building. This is supported by Hargittai and Hsieh (2010) and Special and Li-Barber (2012) who reported that women use social networks more for communication purposes and are more comfortable with the features of SNS in order to maintain relationships. Furthermore, men do have a broader knowledge in using the Internet but only use it for gaming and entertainment (Joiner et al., 2012).

Therefore, in correspondence to this study, the findings indicate that the community structure e.g. maintaining relation- ships, and entertainment features heavily influences users' communication and networking behaviour. Subsequently, the gender group has an effect on the core of the network that

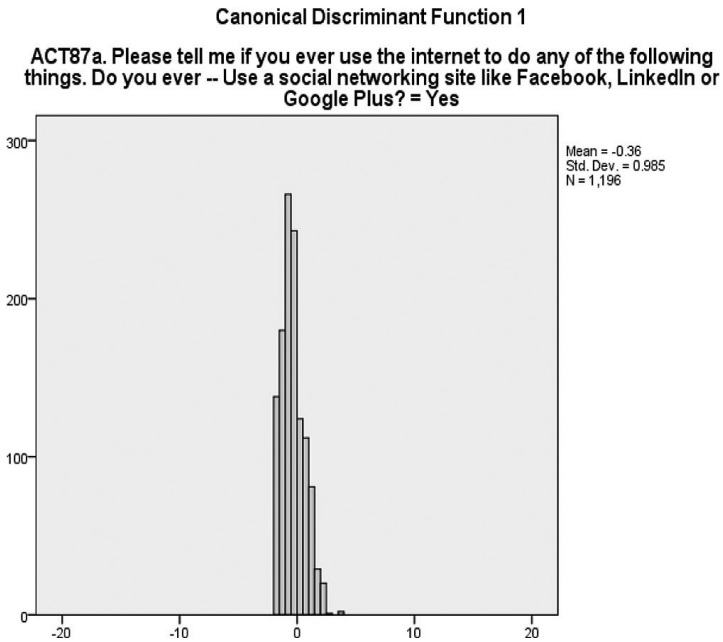

Fig. 5. Respondents using social media in the future.

the heavy correspondence with online content. Likewise accessing the mobile Internet was also a positive pre- dictor to using social networks. This suggests that due to the mobility and ubiquitous of mobile phones, they provide effective measures to users to instantly connect with others and maintain close relationships on social media applications (Xie, 2014).

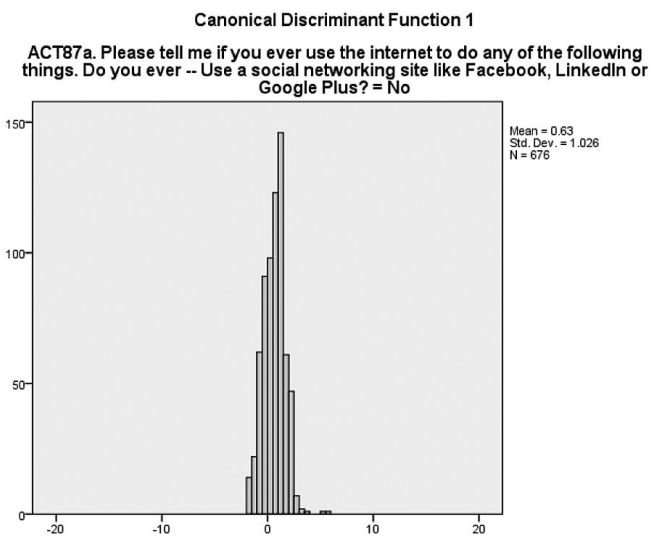

Fig. 6. Respondents NOT using social media in the future.

To determine the long-term implications of social networking tools, multiple statistical analyses were conducted to assess the potential influences of social media platforms. According to the statistics, gender and age were significant predic- tors with a positive relationship with social networks. This suggests that these individuals constitute the core network of social interaction on social networks. This is consistent with another study that explored the predictors of SNS, and found the demographic factors age and education were significant predictors of SNS due to their internet access (Choudrie et al., 2013). Thereby, one could argue that it represents the social actors embedded in a social network. The analysis also revealed that the predictor variables age, mobile internet access, and gender have an effect on the adoption and usage of online social networks.

Interestingly, it perfectly describes the communication practices and usage patterns for emerging groups to use social networks in the future. In terms of age the prediction suggested that younger users aged 18–29 were more likely to be social media users. The results approves Correa et al. (2010) research findings who found that social network use was particularly

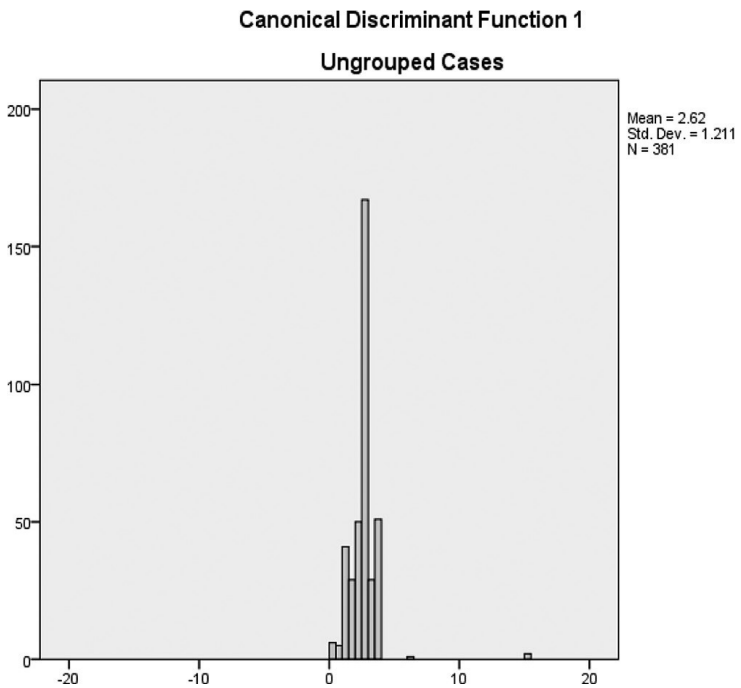

Fig. 4. Predicted outcome of social media users in the future.

important for young adults. This is due to their outgoing personalities that enable them to maintain relationships with numerous people. Also, when people interact on OSNs, they create connections i.e. following other users or commenting and liking their posts. By analyzing the structural data, con nections also increase when the network actors create relation- ships through

Table 7
Descriptive statistics for online video activities.

Online Video Activities	Frequency	Valid Percent	Mean	Std. Deviation	Total
Watch videos on a video-sharing site like YouTube or Vimeo	506	64.8%	1.35	0.478	781
Watch movies or TV shows through a paid subscription service like NetFlix or Hulu Plus	325	41.6%	1.60	0.590	781
Watch videos online, including on social network sites or using mobile apps	378	48.4%	1.53	0.598	781
Upload a video to the internet so others can watch it or download it	186	23.8%	1.78	0.530	781
Stream video live to the internet for other people to watch	116	14.9%	1.88	0.565	781
Watch videos online, using a mobile app like Vine	78	14.3%	1.95	0.811	555
Post or share videos online, using a mobile app like Vine	42	20.4%	1.83	0.590	207
Do you ever use your cell phone to Record videos	64	30.9%	1.69	0.463	207
Do you ever use your cell phone to share or post videos online	289	32.0%	1.68	0.467	903
Do you ever use your cell phone to Watch videos	133	14.7%	1.87	0.473	903
Do you ever use your cell phone to use Snapchat	295	32.7%	1.67	0.469	903

Table 8
Multi Regression Result of predictors to use social media tools.

	b	SE b	b
SEX	-0.136	0.022	-6.123
EMPLOYMENT STATUS	0.002	0.008	0.225
EDUCATION	-0.009	0.007	-1.331
AGE in 4 Groups	0.170	0.010	16.974

Note: Correlations are significant at $p < 0.01$.

mobile phones were more likely to be social media users. Overall the discriminant function successfully predicted outcome for 71.0% of cases (see Fig. 4), with accurate predictions being made for 72% of social media users who would utilize the tools (Fig. 5.) and 69.2% of participants who would not utilize the tools (See Fig. 6.) Tables 9 and 10 presents the tabulated full analyses of the results.

5. Discussion

For a future perspective of social networks, the study aimed to understand the dynamics of social relations and interac- tions of online social networks, and how it forms the community structure of the network. Furthermore, the study wanted to determine the variables that influence the use of OSN in the future, and the exploitation of online content e.g. identifying any usage patterns and trends that will emerge from the data.

cantly on each of the four predictor variables. A single discriminant function was calculated. The value of this function was significantly different for social network users and non-social network users (chi-square = 376.97, df = 6, p < 0.0005). The correlation between predictor variables and the discriminant function suggested that age, access to mobile internet and

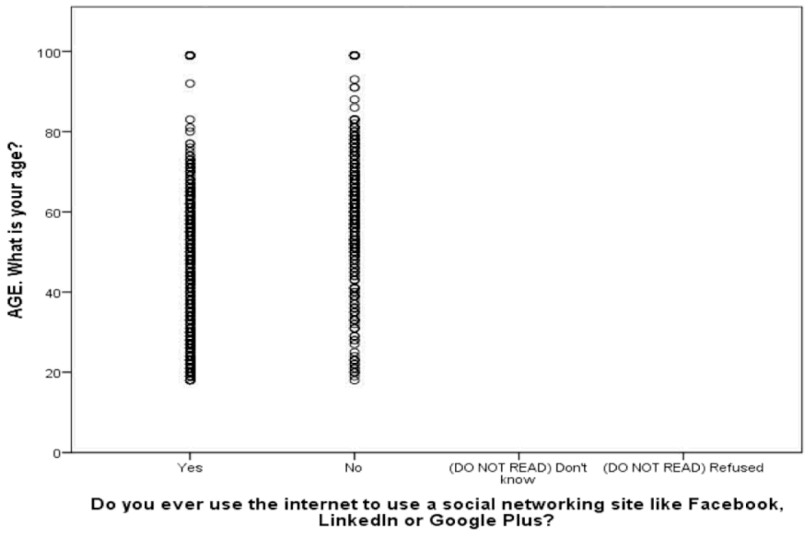

Fig. 3. The relationship between age and respondents who use SNS.

gender were the best predictors of future social networking usage. Age was positively correlated with the discriminant func- tion value, suggesting that younger users, 18–29, were more likely to be social media users and accessing the internet on mobile was also positively correlated with the discriminant function value, suggesting that users with internet on their mobile phones were more likely to be social media users. Overall the discriminant function successfully predicted outcome for 71.0% of cases (see Fig. 4), with accurate predictions being made for 72% of social media users who would utilize the tools (Fig. 5.) and 69.2% of participants who would not utilize the tools (See Fig. 6.) Tables 9 and 10 presents the tabulated full analyses of the results.

Table 6
Pearson Correlation Matrix among sharing content.

Variables	Watch videos on YouTube or Vimeo	Use the mobile app 'called 'SNAP-CHAT	Use INSTAGRAM
Watch videos on YouTube or Vimeo	1	-0.117	0.334
		0.395	0.013
Use the mobile app called 'SNAP-CHAT'	-0.117	1	0.088
	0.395		0.058
	0.334	0.088	1
Use INSTAGRAM	0.334	0.088	1
	0.013	0.058	

Note: All correlations are significant at the .05 level.

65% online adult users watch videos on a video- sharing site like YouTube or Vimeo, 42% also watch movies or TV shows through a paid subscription service like NetFlix or Hulu Plus, 48% watch videos online, including on social network sites or using mobile apps, 24% upload a video to the inter- net so others can watch it or download it, 15% stream video live to the internet for other people to watch and 14% watch videos online on a mobile app like Vine. Also 7% use the mobile application Snapchat and 13% use Instagram mobile appli- cation on their smartphone (see Table 7 for the full analyses and Fig. 2 Bar chart).

4.2. Tests for predictors of social media use and the intention for using social media in the future

Those variables that were significantly correlated with the criteria variable, social networking usage were entered as pre- dictors into a multiple regression using the standard method. A significant model emerged: F (1, 4, 7) = 80.164, p < 0.001. The model explains 14.5% of the variance in using social media sites (Adjusted r2 = 0.145). Table 8 gives information about regression coefficients for the prediction variables entered into the model. Gender and Age were significant predictors, with a pos- itive relationship to use social media tools. Education and Employment were not significant predictors.

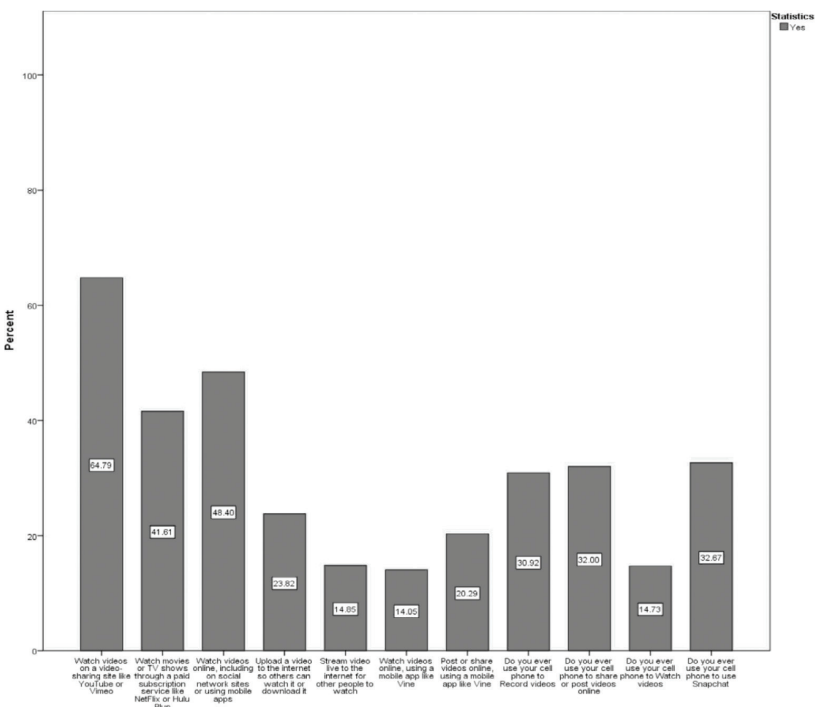

Fig. 2. Bar chart of online video activities.

A discriminant analysis was performed using a social networking site like Facebook, LinkedIn or Google Plus; and age, gender, education, employment, access to the Internet and access to Internet on mobile phone as predictor variables. A total of 6171 cases were analyzed. Univariate ANOVAs revealed that those who use social networks and those who do not differed signifi-

dia sharing applications used in Web 2.0 applications. Video content (M = 1.82) dominates over photo content as the emerging trend of online communication (M = 1.59), Z = -12.70, p < 0.001, with a medium effect size (r = 0.31). This indicates that on average video contents are widely preferred over photo content. A Friedman Test revealed that the use of video sharing tools as part of Web 2.0 applications varied significantly across the three types of online video viewing and creating experience that has grown in popularity:x2 (2, N = 747) = 378.282, p < 0.001.

A chi-square test of independence also confirms that participants posted videos online on social networking sites more often than those who watched videos online on social networking sites, X2 (4) = 48.85, n = 199, p < 0.001.

A chi-square test of independence indicated that photos were posted online significantly more often than videos tools X2 (2) = 149.7, N = 799, p < 0.001. Of the participants, 43% would post photos on various social media sites compared to 19% of participants who posted videos on social media sites.

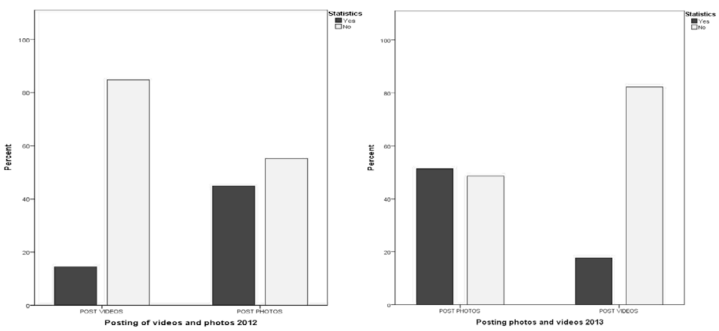

Fig. 1. Graphs show the percentage of participants in the survey who post photos and videos online.

Table 5
Correlation between age and respondents using social media sites.

Variables	Use a social networking site like Facebook, LinkedIn or Google+	Age in 4 Groups
Use a social networking site like Facebook, LinkedIn or Google+	1	0.369//
Age in 4 Groups	0.369	0
	0	1

Note: Correlation is significant at the 0.01 level (2-tailed)/p < .01.

There was a perfect positive correlation between the age of respondents and attitudes towards using social networking sites (r = 0.369, n = 897, p < 0.001 two tailed). It is a small correlation: 14% of the variation is explained. This indicates that the relationship of age and online adults using social networking sites is due to the high dynamics of SNS users' activities (See Table 5 and Fig. 3 Scatter plot).

There was a significant positive correlation between YouTube and Instagram in Table 6 (r = 0.334, N = 55, p < 0.05, two tailed) and a significant strong positive correlation between Snapchat and Instagram (r = 0.324, N = 454, p < 0.05, two tailed). However there was a negative correlation between YouTube and Snapchat (r = 0.117, N = 55, p = 0.395, two-tailed).

The online video experience from a July 2013 national survey shows that

Table 2
Result of factor analysis and discriminant validity.

	MSA1	MSA2	MSA3	MSA4	OVC1	OVC2	OVC3	OVC4
MSA1	.808[a]	-.328	-.263	-.101	.048	.043	.107	.063
MSA2	-.328	.775[a]	-.165	-.327	.123	-.018	.055	-.130
MSA3	-.263	-.165	.763[a]	-.396	-.280	-.027	-.046	.093
MSA4	-.101	-.327	-.396	.793[a]	-.074	-.018	.005	-.028
OVC1	.048	.123	-.280	-.074	.748[a]	-.277	-.009	-.207
OVC2	.043	-.018	-.027	-.018	-.277	.825[a]	-.135	-.204
OVC3	.107	.055	-.046	.005	-.009	-.135	.680[a]	-.582
OVC4	.063	-.130	.093	-.028	-.207	-.204	-.582	.665[a]

Note: MSA = Media sharing activities on SNS OVC = Online video culture on SNS or mobile apps.

The two AVE extracted exceeds the square of the correlation between the constructs, supporting discriminant validity. Correlations with the superscripted lettera signify the diagonal elements that are larger than off-diagonal elements. The correlations are significant at $p < 0.01$.

Table 3
Correlation between constructs with Convergent And Discriminant Validity.

	MSA1	MSA2	MSA3	MSA4	OVC1	OVC2	OVC3	OVC4
MSA1	1.000	0.556	0.518	0.476	0.029	-0.067	-0.203	-0.142
MSA2	0.556	1.000	0.531	0.590	0.089	0.056	-0.045	0.056
MSA3	0.518	0.531	1.000	0.646	0.339	0.143	0.014	0.051
MSA4	0.476	0.590	0.646	1.000	0.249	0.125	0.014	0.084
OVC1	0.029	0.089	0.339	0.249	1.000	0.449	0.318	0.409
OVC2	-0.067	0.056	0.143	0.125	0.449	1.000	0.424	0.481
OVC3	-0.203	-0.045	0.014	0.014	0.318	0.424	1.000	0.684
OVC4	-0.142	0.056	0.051	0.084	0.409	0.481	0.684	1.000

Note: The correlation matrix table demonstrates that the convergent correlations are higher than the discriminant ones, therefore the correlation matrix provides evidence for both convergent and discriminant validity.

Table 4
T-test results for posting photos and posting videos online.

Outcome	M	SD	n	CI for Mean Difference 95%		t	df
Post PHOTOS ONLINE	1.58	0.687	431	-0.326	-0.199	-8.117	430
Post VIDEOS ONLINE	1.85	0.625	431				

Note: Means differed significantly at the .05 level.

conditions; $t(430) = 8.12$, $p = 0.01$. These results suggest that video content are popular and rapidly grown web 2.0 applica- tions and tools. Specifically, the results suggests shared video tools are more likely to be used more often than photo tools as the community structure of online media content (See Table 4 and Fig.1).

A Wilcoxon Signed Rank Test revealed a statistically significant difference in me-

discriminant analysis for this research was conducted to predict if there would be users of social media applications in the future. Huberty and Olejnik (2006) argue that a discriminant analysis is used in research to study the relationship between a set of predictors of a cat- egorical variable.

3.1.3. Data analysis

Construct validity was used to validate the instrument. The internal structure of the survey included the relationships between responses to different survey items, and the relationships between the survey and measures of other constructs (Trochim, 2006). From the test, two subtypes of construct validity (Convergent and Discriminant validity) were used to mea- sure the items. Convergent validity was used to measure two constructs that should be related, are in fact related (Brown, 2000).

According to Bagozzi and Yi (2012) convergent validity uses three standard conditions to assess the validity: 1) all indi- cator factor loadings should exceed 0.5 (Hair, 1998); 2) CR should be above 0.7; and 3) the average variance extracted, AVE, of every construct should be above 0.5 (Fornell and Larcker, 1981). Discriminant validity was used to test whether the mea- surements which are unrelated are, in fact, unrelated (Brown, 2000). Furthermore, Fornell and Larcker (1981) suggest that the AVE of a construct should exceed other correlation coefficients of the construct. An internal consistency test of those col- lapsed items was carried out using Cronbach's alpha. Reliability analysis is achieved when the Cronbach's alpha exceeds 0.7 as recommended by Nunnally (1967). The reliability for all items was satisfactory (Cronbach's alpha above 0.80) (See Appen- dix B.1 for the cronbach's alpha of all constructs). For construct validity, the items loaded in the correct factors in exploratory factor analysis (with loadings of 0.60 or more).

Accordingly, the instrument has confirmed construct validity and reliability. Tables 1–3 indicates that convergent validity and discriminant validity was achieved. A coding scheme was used to classify how respondents indicated their answers for the survey questions. For instance the "yes" response was coded as 1 and "no" coded as 2. A list of the questions that the respondents participated to answer from the survey is displayed in Appendix A.1.

4. Results

4.1. Tests for media sharing tools on social media sites and correlation between age and using social media

A paired-samples t-test was conducted to compare the type of users who post photo content and video content. There was a significant difference in the scores for photo content (M = 1.58, SD = 0.70) and video content (M = 1.85, SD = 0.63)

Table 1
Convergent validity.

Constructs	Items	Composite reliability	AVE	Factor loadings
Media sharing activities on SNS	MSA1	0.795	0.659	0.826
	MSA2			0.823
	MSA3			0.808
	MSA4			0.789
Online video culture on SNS or mobile apps	OVC1	0.792	0.595	0.851
	OVC2			0.812
	OVC3			0.746
	OVC4			0.662

Note: Convergent validity was achieved as seen in the factor loadings for items above 0.6 at a significant level of 0.001 and the composite reliability was above 0.7 whilst AVE was found to be above 0.5.

Tiropanis, 2012; Barassi and Treré, 2012; Aghaei et al., 2012; Nath et al., 2014). Web 3-D was also included in scholarly studies (Spagnuolo and Falcidieno, 2009; Lesko and Hollingsworth, 2011; Barassi and Treré, 2012) because it addresses the opportunity to interact on social media platforms like Facebook, Twitter, Google+, LinkedIn, and YouTube to be in a virtual world known as an Avatar on behalf of the user, which is more engaging and col- laborative on a global scale (Nath et al., 2014).

3. Methodology

3.1. Dataset preparation

For the statistical analysis, this study used the publically available datasets from the Pew Internet and American Life Pro- ject survey on Americans' use of the Internet conducted by Princeton Survey Research Associates International. The datasets were merged into one national dataset survey and each conducted survey was completed from August 2012 to October 2013 (See Pew Research Center, for information about the detailed process regarding sampling and data collection). All adults were surveyed on the random-digit dialling (RDD) method with a combination of landline and mobile phone connection to represent all American adults who have access to either a landline or mobile phone.

The Pictorial activities August, 2012 survey included a sample of 1002 adults and the Civic engagement tracking survey was conducted in August, 2012 with a sample of 2253 online adults. The administered July 25–28, 2013 Online video survey consisted of 1003 adults aged 18 + across the United States; and finally a nationally representative Pictorial activities survey of 1000 adults aged 18 + was taken October 3–6, 2013. Each sample recorded age, gender, the level of education, and employ- ment status socio-demographic groups.

3.1.1. Population and sample

The demographics of survey respondents included Gender, Age, Education, and Occupation. A total of 6171 responses were received, of which 1873 were valid. Among the valid respondents, 58% were male and 69% were female and the largest age group was 18–29 years old, accounting for 85%. In regards to their education, 67% of them were college graduate stu- dents, whilst 69% were in full time employment.

3.1.2. Data measurement

This study used SPSS, version 20 to conduct all the analyses. A multiple regression was used to measure the predictors of social media use; this is useful as it is used to predict the value of a variable based on the value of two or more other variables as suggested by Sedgwick (2013). A paired samples t-test implied by Abbott and McKinney (2013) is appropriate when test- ing for the difference of two variables; in this study, it was appropriate to use paired sample t-test to test for the differences in the use of videos and photo tools on social media. A Pearson correlation as Huberty and Olejnik (2006) suggests was used to measure a correlation of two or more variables to test if there was a relationship between them. Thereby, for this study it was appropriate to test the relationship between age and respondent's use of social networks, and the relationship between the media sharing platforms. A Friedman test for the differences in video sharing tools was conducted as this is used to com- pare the distributions of three variables (Sepanski, 2007; Laurent and Turk, 2013). A Wilcoxon -signed rank test is often used in studies where you compare two sets of scores that come from the same participants (Taufer, 2009). For this study it was used to examine the differences in media sharing applications from the same participants. Finally, a

tona et al., 2011). Moreover, many leading social networks such as Facebook, Twitter and Google+ are worth an investment of billions of dollars due to their business potential (Kim, 2011; Hoffman and Novak, 2012; Klein et al., 2015).
One undeniable factor for the popularity of user generated content is the ability to maintain and create new relationships with other users (Raacke and Bonds-Raacke, 2008; Heinrichs et al., 2011; Pagani et al., 2011). Studies do confirm that the communication between users and their friends in a social network is defined by the strength of the ties between them (Raacke and Bonds-Raacke, 2008; Panzarasa et al., 2009; Kim, 2011; Klein et al., 2015; Xu et al., 2016; Han et al., 2015). Social networking sites harness the power to both change human communication and interaction patterns, and build intense inter- action which influence user's lives, despite the fact that these powerful interactions are only experienced through online context (Humphreys, 2007; Clemons, 2009; Cheung and Lee, 2010; Kim, 2011; Alhabash et al., 2013). In social network anal- ysis, users with a large number of social links in their network hub are perceived to have better communication and inter- action in their networks (Curras-Perez et al., 2014; Xu et al., 2016). It also illustrates their communication activity pattern such as exchanging online content with other users on their network which is considered to be vastly important (Alhabash et al., 2013; Park et al., 2015).
One key advantage of social network sites is allowing users to control their social networks and build connections that they previously could not do, whilst maintaining and creating relationships (Ellison, 2007; Ellison et al., 2007; Curras- Perez et al., 2014). Although social networks are known for its network size, there is little attention attached to it. Yet a net- work size on social networking sites embodies the concept that is associated with it. For example, the network size on Face- book is viewed as the number of friends a user has on their profile, and on LinkedIn it is known as the number of connections on your business profile (Salehan and Negahban, 2013). The concept of network size is also related to extra information dis- closed on SNS (Quan-Haase and Young, 2010). Additionally, this represents the significance of the size and the degree of the network as users are more likely to be active users, if they join a heavy-going network. Furthermore, a network structure growth is usually based on user activities that are formed by key members of that network, who have a mutual social influ- ence from their communication and networking behaviour (Wang et al., 2011; Alhabash et al., 2013).
Some Scholars have argued that mobile technology is an important communication medium that supports social connec- tion (Humphreys, 2013). Mobile phones can be employed in numerous ways for social networking (Gao and Bai, 2014). Cur- rently, there is a sharp growth in the number of people using mobile devices to use social networking sites.
Social networking is among the top five activities to be utilized by mobile users (Salehan and Negahban, 2013). For exam- ple, at the end of 2011, over 35% of smartphone users in the United States accessed their mobile devices to use social net- works and blogs. By 2012, the figure doubled with more than 65% of users engaging with social network sites on their mobile devices (Salehan and Negahban, 2013).

2.1.8. Application of Web 3.0 technology in social media

Although the literature review identified many studies on Web 3.0 technologies, only a handful of studies have discussed Web 3.0/semantic web evolvement in social media. Scholarly articles revealed that whilst Web 3.0 enhances users' ability to be more active and participative on social media, it also enables them to create and share content that they want, when they want it (Loureiro et al., 2012; Hall and

people use SNS for meeting new people, maintaining existing relationships, pursuing social events, and obtaining enjoyment. Meanwhile, recent consultancy reports also pointed out the predominant factors that encourage the use of SNS. The reports found that 90 percent SNS users engage with OSNs solely for relationship maintenance. In the reports, the respondents indicated that they use social media sites for connecting with friends and family (Rainie et al., 2011). This is also supported by Subrahmanyam et al. (2008) who found that young adults often use SNS to connect and reconnect with family and friends. In general, community is one of the most crucial social structures in social network analysis, with individuals in the same community meeting up more regularly, whilst individuals in different communities rarely meet. This perfectly represents social attributes that is associated with users who connect on OSN, since these users have the stronger social ties and structure the communities from their frequent and longer meetups (Oinas-Kukkonen et al., 2010; Siersdorfer et al., 2014; Curras-Perez et al., 2014; Xu et al., 2016; Park et al., 2015).
Other factors that contribute to users using SNS includes entertainment, for example, the mini-game on Facebook known as Candy Crush Saga attracted 127 million active users per month (Chan, 2014; Chan et al., 2015). Combining these perspec- tives, this study posits that users' engage with SNS to learn more about the people they have connected with, and when users do connect, the feeling in return personally fulfils satisfaction in them (Ellison et al., 2007; Raacke and Bonds-Raacke, 2008; Lin and Lu, 2011; Lu et al., 2011; Kim, 2011).
Findings from previous research also show that researchers have investigated social media sites and gender, with the influence that there is a strong correlation between gender and SNS. For instance, a recent study outlined by Choudrie et al. (2013) suggests that gender and personality were predictors of online social networks when exploring Facebook and Myspace. Thus, their findings concludes that in the study of gender OSN behaviour, both gender and personality are strongly correlated to participants' reason for using OSN and for participating and using OSN for socialising (Muscanell and Guadagno, 2012). Furthermore, a study by Joiner et al. (2012) revealed that women use the internet for communication considerably more than men. This is supported by Chan et al. (2015) who found that women significantly use SNS for con- necting with other users to what they refer as 'relationship maintenance' and men mainly use it for entertainment and lei- sure. This perception tends to be consistent with other researchers (Weiser, 2001; Hargittai and Hsieh, 2010; Joiner et al., 2012; Special and Li-Barber, 2012; Curras-Perez et al., 2014) who all agree that maintaining relationships on OSN is common with females, whilst entertainment and gaming is popular with males.
Studies have considered another variable 'Age' as an important factor in social network analysis research where there is a general agreement that there is a strong relationship between age and using SNS (Lenhart and Madden, 2007; Correa et al., 2010; Perrin, 2015; Duggan et al., 2015; Han et al., 2015). Results in the studies showed that younger adults who engage with Facebook use it predominantly for social interaction with offline friends for 30 min a day (Pempek et al., 2009). Similarly, Myspace was primarily utilized by younger users, particularly for music and videos on their profile page more than older users (Pfeil et al., 2009). In regards to gender differences, teenage girls had more interactivity on Myspace than teenage boys and any other age group (Pfeil et al., 2009).
A vast number of researchers agree that social networking sites are growing rapidly whilst becoming popular and attract- ing millions of users worldwide (Ka-

Similarly, an advantageous feature of Instagram is allowing content posted on the application to have a longer shelf life compared to other online social networking sites (Miles, 2014). The application also offers users the ability to like, comment, follow and tag content on a chronological timeline, enhancing photo sharing communication through social interaction (McNely, 2012; Fuduric and Mandelli, 2014; Ferrara et al., 2014).

2.1.6. YouTube

It is well established that YouTube has become the third most visited website in the United States and globally. The site has gained over one billion monthly visitors who watch over 6 billion monthly hours of videos whilst engaging in liking, sharing, and commenting on videos on YouTube (Thelwall et al., 2010; Kousha et al., 2012; Cheng et al., 2013).

Purcell (2013) reported that young adults (18–34 yrs old) are most likely to adopt and be frequent users of YouTube, who watch and post and share videos on YouTube every minute of the day. The popularity of YouTube features allows users to upload videos in order to dislike and comment on them, and by also interacting with video content by sharing it on other social networking sites (Alhabash et al., 2015).

2.1.7. The continuance of social media usage and the impact on future application

Previous research has widely explored the intention to continue to use social media applications (Sledgianowski and Kulviwat, 2009; Kim, 2011; Kang et al., 2013; Purcell, 2013). According to Khang et al. (2012) the combination of Web 2.0 and user generated content has established social media as the main influence in our daily routine. The built in features of social media is the foundation to explore the determinants of social media usage and the behaviour of users' activities on social networking sites (Khang et al., 2012). Subsequently, the structure of OSN is represented by the communication activity between the users (Willinger et al., 2010; Xu et al., 2012). This is epitomized by users who specifically interact through their communication activity such as the exchange of information by messages and wallposts, rather than the users who are just connected by their social links (Raacke and Bonds-Raacke, 2008; Viswanath et al., 2009). The network is highlighted by strong connections between the users whose activity links strengthens the interaction among them, particularly on larger OSNs (Lim et al., 2012; Xu et al., 2016). Therefore, OSN enables users to collect information from others in the network to win over connections from several social and geographically disconnected backgrounds (Haythornthwaite, 2002; Lim et al., 2012; Curras-Perez et al., 2014; Han et al., 2015; Park et al., 2015).

Duggan et al. (2013) revealed that online adults who use the internet has increased from 8% in 2005 to 73% in 2013, with 42% of online adults using multiple social networking sites. For example, social media platforms including Twitter is used by 18% of US online adults, a 10% increase from 2010, whilst 17% of online adults use Instagram, a 13% increase since 2012 (Dug- gan et al., 2013).

Scholarly articles have assessed different types of SNS from different theoretical approaches, which have also enhanced the scientific understanding on why people continue to use SNS (Kwon and Wen, 2010; Kim, 2011; Kang et al., 2013; Ku et al., 2013; Chan, 2014; Kwon et al., 2014). One example includes Ellison et al. (2007) who pointed out that there are four factors that influence SNS users to use SNS: maintaining offline contacts, meeting new people, seeking information and engage in fun on the site.

In addition Nyland and Near (2007) and Curras-Perez et al. (2014) claim that

tertainment appeal to the users' (Vartiainen and Väänänen-Vainio-Mattila, 2010; Eftekhar et al., 2014).

By its very nature, sharing photos on SNS has become one of the most essential and widely used features (Duggan et al., 2014). A study conducted by Duggan (2013) revealed that half of online users in the USA have shared photos online that they have taken themselves, whilst 42% of the users have forwarded or shared photos posted by others. Likewise, sharing photos allows users to share their feelings, thoughts, emotions, immediate feedback or produce a discussion that is centered on a topic of discussion (Mendelson and Papacharissi, 2010; Ferrara et al., 2014).

Furthermore, photo-sharing activity on SNS has been considered to be a practical and instructive method for interpreting self-image and providing an immediate response among users by explanatory communication (Mendelson and Papacharissi, 2010; Eftekhar et al., 2014). SNS has significantly risen in popularity due to the activity of sharing photos which quickens the interactivity for getting comments, likes and discussion with other users into action (Eftekhar et al., 2014). According to Bakhshi et al. (2014) photo sharing sites such as Instagram have made it possible to communicate with a large number of users through an image. This activity has proven to be more popular than textual information (Bakhshi et al., 2014).

Consequently, photo sharing has changed the relationship between users on SNS as it enables users to create, share and discuss any type of topic due to the power of what the image conveys (Mendelson and Papacharissi, 2010; Eftekhar et al., 2014). Although photo sharing is now a popular activity on SNS (Duggan, 2013), it is important to find out if the activity will have a continuance and dominant presence for usage on SNS in the future.

2.1.4. Pinterest

Several studies that have been conducted demonstrated that Pinterest has become one of the most popular social net- working sites. From July 2013, over 70 million people worldwide use Pinterest as a digital sharing site to collect pins (Cheng et al., 2014). In the US Pinterest was the third most popular site in 2012, behind Facebook and Twitter, in terms of monthly unique visitor counts (Han et al., 2014).

Cronin (2013) also demonstrated that a large percentage of females (80%) used it more widely than males in 2012. Fur- thermore, users predominantly use Pinterest more often than Twitter and Facebook (Cronin, 2013; Cheng et al., 2014; Linder et al., 2014). Similarly, Gilbert et al. (2013) found that 80% of females used Pinterest than males (20%). This is also supported by Chang et al. (2014) who reported that females to a certain extent use Pinterest more than males due to the stereotypical topics they find interesting on pin boards.

2.1.5. Instagram

Previous studies have addressed the popularity of Instagram in recent years. The mobile application which is to share photos and videos has gained 150 million users and produces 1.2 billion likes per day (Bakhshi et al., 2014; Geurin-Eagleman and Burch, 2014; Manikonda et al., 2014). Additionally, Instagram allows users to send images in real time to the system and currently the application is one of the most popular photo sharing sites (Silva et al., 2013).

It also allows users to manipulate images and share them on other social networking sites such as Facebook and Twitter. Furthermore, the popularity of Instagram is due to the hashtags and symbols used to describe photos and videos to interact individually with users before posting them (Manikonda et al., 2014).

rich media is more effective than text (Benevenuto et al., 2009). Online video content has also enhanced the ability to post self-responses. This is a feature where responses are posted by the user who posted the original video. The study also revealed that 25% of all video responses are self-responses, whilst 35% of the responded videos received at least one self- response but only 12% of them received self-responses. This study made a major contribution to video sharing, as it demon- strated that video responses is perceived to be an attractive feature to users who wish to promote specific content, and adverts which encourages immediate prompt user engagement over textual responses. In this regard, a user with many social links is more important than a user with no social links, demonstrating that a user's connectivity in a complete net- work comprises of being exposed to users that are in different social sub networks (Wen et al., 2009).

Meanwhile there are a number of studies that have contributed to the literature regarding the development of online video sharing. Firstly, Zhou et al. (2011) showed that the earliest stage of video sharing was experienced on YouTube. It enabled users to upload and view videos directly on the website, whilst selecting the related videos recommended on video sharing sites or searching for interested videos on their search engine. Additionally, Rodrigues et al. (2009) claim that social networks (Facebook, Twitter and Google+) has significantly changed the way video sharing is used as social groups would direct users to videos that would run for minutes. Similarly, video sharing on mobile phones has also contributed to video sharing as social media applications allow video clips to be shared by users which can be short as several seconds. As the file size is quite small, users can watch multiple video clips in a limited time (Zhang et al., 2014). A popular example would be Twitter and their video service called Vine.

One interesting aspect of online video viewing is the popularity of viral videos which emerges through word of mouth propagation process (Crane and Sornette, 2008). However, Crane and Sornette (2008) rejects the idea that most videos attract a lot of attention or experience a marked peak in popularity, this they refer to as 'memoryless'. On the other hand, quality videos experience a very sudden peak in popularity, usually due to YouTube and featuring on the websites first page (Crane and Sornette, 2008). The study also found that junk videos experienced a sudden breakout in popularity, in contrast, they do not spread across social networking sites, and hence their popularity quickly declined.

Currently, YouTube accounts for 60% of videos watched online. The platform's popular features provides several social interaction capabilities such as commenting on published videos and providing ratings about the comments made by the user (Siersdorfer et al., 2010). Moreover, Facebook has become a major avenue for users to share YouTube videos. From 2012, statistics revealed that 40% of YouTube views take place on Facebook, whilst video sharing among Facebook users resulted to a total number of 58.6 million in January 2011 (Lake, 2011; Smith et al., 2012; Li et al., 2012, 2014; Li, 2014).

2.1.3. Photo sharing on social media

Previous research has widely shown that digital photo sharing is increasing among online users to engage on social net- working sites. This is because it fulfils functional purposes for feedback, public approval, attention and recognition by the comments and conversations on shared photos among users (Malik et al., 2015). Moreover, online users engage with photos as it provides a fun and joyful activity, since shared photos with other users provide en-

2011; Akhgar et al., 2013). Fur- thermore, in the Asia-Pacific region, 50% of the total online population browsed social networking sites during February 2010 reaching 240.3 million visitors. This highlights the global and perennial nature of this phenomenon (Hughes et al., 2012). In 2012, the Nielson Report demonstrated that at least 27 billion minutes are spent on Facebook each day. The addictive nature of Facebook is due to the convenience of tracking the status of friends (Correa et al., 2010). The figures reported have doubled since then with no reason to stop, indicating that as for certain online social media will remain as people always want to interact and connect with other people (Hanna et al., 2011).

2.1.1. Online activities

Research has shown that online activities that involve the exchange of videos and photos on social networking sites such as Pinterest, Instagram and YouTube, is increasingly widespread with many online users (Alhabash et al., 2013; Cronin, 2013; Bakhshi et al., 2014; Han et al., 2014; Linder et al., 2014; Manikonda et al., 2014; Malik et al., 2015).

2.1.2. Video sharing on social media

Various studies have shown the rapid development of video sharing services, particularly to understand how online users' conduct their online activities on social network applications and video sharing sites such as YouTube (Benevenuto et al., 2009, 2010; Huang et al., 2010; Siersdorfer et al., 2010; Pinto et al., 2013; Zhang et al., 2014). Video sharing has become one of the most popular online activities on OSN, with YouTube recognised as the world's largest video sharing site (Kousha et al., 2012; Zhang et al., 2014).

Research also indicates that video sharing is popular due to the integration into various social media applications. In many cases, understanding online activities on SNS involved exploring the unique characteristics of video sharing sites (Cha, 2014). For example, one finding revealed that the viewing experience of video activities included the popularity and life time of different videos (Benevenuto et al., 2009). The video sharing experience has increased the social interaction between users' by easy to use communication tools. For instance the ability to share videos on social media platforms such as Facebook, Twitter and Google+, where communication exchange is employed with features such as comments, likes or retweets (Ma et al., 2014).

Furthermore, several empirical studies examined the effect of sharing behaviour with video sharing sites. As Cheng et al. (2013) states, the VSS YouTube is popular with videos that are advertised at their early stage due to the external link that references the video object outside YouTube. Afrasiabi Rad and Benyoucef (2012) investigated the idea that video propaga- tion and popularity in YouTube are based on two types of connections: friends and followers. The concept of video propa- gation and popularity heavily contributes to research on content propagation. Previous research have studied how social interaction impacts video propagation on OSN. Findings revealed that video popularity is due to two factors: users' interests in the video; and the duration of the interests (Yoganarasimhan, 2012). The perception derived from the findings is that online users play a significant part in video propagation in OSNs than the video content in essence. In a landmark study, Benevenuto et al. (2009) argued that the trend in online video experience, particularly in social networks is ideal for exchanging knowledge and expressing viewpoints through video interactions. The purpose of video responses is to enable users to generate reviews for products and places, and also to exchange their opinions about the video content as

ture on social media; Section 3 explains the methodology for conducting the research, including the measurements, data description and analysis; Section 4 illustrates the experimental results; Section 5 discusses the impact and implication of the results. Finally, in Section 6 the paper con- cludes the main points of the research with suggestions for future research and limitations.

2. Literature review

2.1. The role of social media and social network usage

Whilst the main purpose for using social media is to facilitate social interaction. Many social media platforms are also used for information seeking, social engagement in terms of belonging and search for identity, by joining a group and build- ing relationships and maintaining them (Ellison, 2007; Ellison et al., 2007; Nyland and Near, 2007). For example, Facebook is used for building a community with a vast range of users both for personal and general use, whilst LinkedIn supports con- nection with the business community and entrepreneurs to build relationships with potential employers and also increasing their own professional profile (Chinthakayala et al., 2014; Fuduric and Mandelli, 2014; Chow and Shi, 2015). Similarly, social media provides users' the opportunity to present themselves to others by constructing a user profile and allowing other users to interact with them by exchanging text, images, photos, and videos; and linking it to other members of the site to increase the value of the applications that is solely based on user generated content (Pfeil et al., 2009; Sophia van Zyl, 2009; Zhou et al., 2011; Haferkamp and Krämer, 2011; Kim et al., 2011, 2012, 2013; Kim and Song, 2011; Smith et al., 2012; Jussila et al., 2014; Scheepers et al., 2014; Kim and Min, 2015; Lin et al., 2015).

Moreover, social networking sites increases collaboration and interaction as more users are engaging with the sites, so opportunity to reach more people to share information, opinions, experiences, insights, and perspectives from all interested parties (Malita, 2011).

A number of articles concluded that the widespread use of Web 2.0 and social media technologies in various activities, is based on social media tools allowing users to use human networks in an interactive environment rather than broadcast com- munications (Sophia van Zyl, 2009; Kaplan and Haenlein, 2010; Cheung and Lee, 2010; Cheung et al., 2011; Xu et al., 2012; Jussila et al., 2014). Users can communicate not only by text but by video, images and audio which is currently the most powerful way to communicate a two-way interactive service rather than a one-way broadcast service (Sophia van Zyl, 2009). Interestingly, OSN are open platforms that allow many actors who engage on the site to come and go anytime, since the benefit of social networks is creating contacts and staying in contact with distant actors.

Additionally, no one expected the extent and impact of social media at such a phenomenal degree. Before the explosion of Facebook, blogs were considered as the real social networks; they empowered ordinary people to use and express any topic, issue or latest trends to a widespread audience (Hsu and Lin, 2008). Likewise at one time Myspace during the year 2005–2006 was ranked higher than Google in terms of most visited site (Ellison, 2007; Ellison et al., 2007). The fact that there were over 500 million active users on Facebook in 2010 (with 70% of those outside the United States); currently Facebook has become the substantial social network globally, whilst Twitter has attracted 73.5 million unique viewers and had over 20 billion messages sent on the platform since it emerged in 2006 (Ahmad, 2011; Katona et al.,

share and search for specific information.
Social media refers to a set of online tools that are purposely built and dedicated to social interactions and supports communications for web based technologies such as social networks (e.g. Facebook, LinkedIn, Google+), blogs, microblogs (e.g. Twitter), social sharing services (e.g. YouTube, Flickr, Instagram, Pinterest), text messaging, discussion forums, collab- orative editing tools (e.g. wikis) and virtual worlds (e.g. Second Life) (Fuduric and Mandelli, 2014). Kaplan and Haenlein (2010) suggest social media is a group of internet based applications that enables users to interact with other like-minded users to exchange user generated content.
These tools are different in functionality and features for their purposes but they share a common goal of allowing users to communicate, interact, edit, and share content in social surroundings; and discuss user generated content which show- cases people's likes, dislikes and activities.
The online service exists on a Web 2.0 platform for individuals and communities to establish social relationships in order to exchange interests, information and events globally in virtual communities and networks (Dawot et al., 2014). However, social media relies on user generated content, which applies to any content that has been created by end users or the general public, unlike traditional media which has content generated by professionals. Moreover, social networking sites also show how the structural formation affects the communication behaviour of users.
In this article, the main objective of this research is to empirically investigate the exploitation of online content, user interaction patterns and motives that represent the forthcoming trends of social networking usage. In order to present enriched valuable results, this paper will collect data from a national survey conducted from 2012 to 2013, and available from the PEW Research Center of American citizens' using OSNs. Previous studies have explored the continuance use of social media and the relationship of variables that affects the intention to use online social networks. However, few studies have measured the determinants that contribute to the future use of online social networks, or analyzed the active social interaction patterns, and the network structure of online activities conducted on OSN. As a result, this study expands existing literature by the following contributions: (1) provide an analysis of the predictors that influence the extended use of OSN due to the interactive relationships between the connected users. (2) To determine the network usage of social networks and diffusion patterns that impact emerging trends of communication activities over time.

1.1. Research questions

The research questions regarding the future of social networks of daily activities are summarized below. The first two address the technology and online communication of social media and how they are used, whereas the last question attempts to examine and understand the future direction of social networks:

1. How dynamic are online communication patterns on social networking sites and what constitutes the network connec- tivity of OSN?
2. Since web 2.0 and 3.0 technology signifies an interactive and collaborative online experience, what is the user- friendli- ness of different social media tools?
3. What are the long term implications of social networking sites and the key changes and developments surrounding social media?

The rest of this paper is structured as follows: Section 2 presents the litera-

The future of online social networks (OSN):
A measurement analysis using social media tools and application

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October 2016

abstract
The explosion of online social networks (OSN) has created an interactive and communica- tive global phenomenon that has enabled billions of users to connect to other individuals on Facebook and Twitter but also with media sharing platforms such as Instagram and Pinterest. This study examines the current use of social media platforms and explores the factors that help define the long term implications of social media. The study employed a nationwide survey collected from 2012 to 2013 and is available from the PEW Internet research center of more than 2000 American citizens' behaviour towards OSNs. The results revealed strong predictors of OSN that form the connections among users; and the core significant predictors: age, gender and access to mobile Internet that foster the adoption and usage of OSN in the future. Furthermore, online activities such as posting video content on social networks also highlighted the online usage patterns and trends of using social media to actively engage with other users more willingly than text. This is due to the viral nature of online media sharing on social media and as part of the video viewing and creating experience. An outline of practical implications of the findings and areas for future research is also discussed.

Keywords
Social media, Online social networks Social network analysis Video sharing, Photo sharing, Future of social media

1. Introduction

The Internet has become a ubiquitous part of people's lives and the development of social media from Web 1.0 to Web 3.0 has transformed how users access information, communicate, connect and interact with other users and