

Social Media Use and Senior Citizen's Life Satisfaction

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Abstract

Social media is increasingly playing a pivotal role in people's lives. This study explores how senior citizens use social media applications and the implications of this use on their overall satisfaction with life. First, a two-step Q-sorting method was used to develop rich measures of social media use experience and their relation to life domains. We identified 44 items in ten life domains from 24 focus group interviews in 20 Thai provinces. Next, we collected survey data from 341 senior citizens over 60 years old to evaluate the influence of satisfaction from social media use experiences on their domain life satisfaction and overall life satisfaction. The findings suggest that the top ten social media use activities fall into family, health, leisure, consumer, self, and friend domains. The PLS-SEM results show that social media use satisfaction shapes life satisfaction across ten domains. Path coefficients from five life domains have positive and significant effects on overall life satisfaction. These five salient domains are the community, consumer, family, health, and work domains.

Keywords

Social Media, ICT for Social Innovation, Aging Society, Subjective Well-Being, Life Satisfaction

INTRODUCTION

In future decades, several countries will experience a surge in the older-adult population, a phenomenon known as an ageing society (UN World Population Ageing Report 2013). Today, people live longer, have fewer children, delay their retirement, and rely more on themselves for personal health management (OECD 2008). Increasingly, information and communication technology (ICT) are recognized as important tools to improve senior citizens' lives. For example, they may browse the web for healthcare information, make payments on their mobile phones without leaving their house, and connect with friends and family members who live in dispersed locations (Burke et al. 2010; Foverskov and Binder 2011; Pilotto et al. 2011). Several ICT innovations have been used to promote better quality of learning and to increase participation in lifelong learning for senior citizens (ICT for Senior and Intergeneration Learning Report 2011). Also, many online videogames have been designed for them to improve their physical well-being and maintain their cognitive abilities (Whitlock et al. 2012).

There is growing empirical evidence that ICT innovations improve senior citizens' domain life satisfaction (Oh et al. 2014). Senior citizens can use ICT particularly the Internet as a platform to enhance social capital, stimulate political participation, civic engagement and community governance (Jennings and Zeitner 2003; Kavanaugh and Patterson 2001; Sum et al. 2008; Wellman et al. 2001). Internet and social media applications allow seniors to stay in touch with family, reconnect with old friends, and connect with others around hobbies and interests (Smith 2011; Zickuhr and Madden 2012).

Previous research has assessed senior citizen's use of ICT in relation to their subjective well-being and life satisfaction in different life domains (Champeau 2008; Leist 2013; Mathews 2013). However, little research has been done to further expand the use of emergent ICT applications such as social media and its impact on senior citizens and their satisfaction with life. In recent years, social media has significantly changed the way people communicate, interact, and socialize with one another. People of all ages use social media across various life activities. According to the Pew Internet Report on Older Adults and Technology use, older adults, despite being late adopters, are among the fastest growing groups to use social media. In 2013, more than 43% of senior citizens in the U.S. used at least one type of social media, compared to 26% in 2010 and 1% in 2008 (Pew Research Center 2014). However, senior citizen lifestyles are generally different from the lifestyles of younger

age groups, thus their use of social media could yield different outlooks from that of the younger population (Oksman 2005). Building on our previous research design (Rachtham and Kaewkittipong 2013), this one aims to theorize how senior citizens use social media and the implications for their satisfaction with life in general.

Our two research questions are:

- 1) How do senior citizens use social media to support everyday activities?
- 2) What is the influence of social media use on senior citizens' life satisfaction?

Since social media applications are malleable and people can use them to suit their needs, it is not possible to theorize social media use a priori. Therefore, we first inductively theorize how senior citizens use social media applications in various life domains through focus group interviews followed by a survey to empirically evaluate the impact of social media use on life satisfaction using Partial Least Squares Structural Equation Modelling (PLS-SEM). Next, we discuss theory development followed by a research framework. The methodology and analysis section outlines the two-phase research design. The results section presents the findings from focus group interviews and the survey. We conclude the paper with contributions, future research and limitations.

THEORY DEVELOPMENT

This study draws on the concept of subjective well-being with an emphasis on life satisfaction as well as the literature on social media use and its impact to conceptualize our preliminary research framework.

Subjective well-being constitutes people's feelings, domain life satisfaction, and overall life satisfaction. It refers to how people feel about their lives (Diener 1984; Kahneman and Krueger 2006). Although all three components are important to evaluate people's subjective experiences, research suggests that domain life satisfaction and overall life satisfaction can offer a picture of people's well-being (Diener et al. 2013). In this study, we draw on the concept of life satisfaction (Diener 1984) to theorize the impact of information technology use. Life satisfaction is a global assessment of the quality of life according to a person's own criteria. Thus, the extent of life satisfaction may depend on one's life circumstances and what the person sets as the standard of a good life for himself or herself. An individual's life can be segmented into several life domains (Andrews and Withey 1976). Some of the key ones are family, friends, leisure, and work (Cummins 1996). It is likely that a person who has a satisfying life in a number of domains will have a greater overall life satisfaction than those who do not.

ICT has played an important role in mediating everyday activities, and this can lead to an improvement in the quality of life in various domains. People use ICT to increase work productivity, build and nurture relationships with friends and family, obtain information and gain knowledge, and earn income through e-commerce. Research suggests that people who have access to advanced ICT infrastructure are more likely to have a higher quality of life satisfaction than those who do not (Dewan and Riggins 2005; Jaeger 2004). Recently, Techatassanasoontorn and Tanvisuth (2010) conducted a study on ICT use and the life satisfaction of the socio-economically disadvantaged. Overall, their findings suggest a complex process of how ICT contributes to life satisfaction. They found that ICT use contributes to an increase in overall life satisfaction. In this social group, people's satisfaction with their community, family, and self domains are salient to overall life satisfaction. They refer to this process as a vertical spill-over effect from domain life satisfaction to overall life satisfaction. In addition, their results suggest that satisfaction from ICT use in one life domain (e.g. work) improves their satisfaction with other life domains (e.g. education, family, leisure, social, self, and community). They refer to this as the horizontal spill over effect of satisfaction from one life domain to another, which subsequently contributes to overall life satisfaction.

Social media is considered as one of the most popular ICT applications that can be used to enhance people's lives particularly around the community and connectivity (Chou et al. 2009). People of all ages use social media to connect and converse with one another. Prior research suggests that affectionate, positive social interaction, and emotional and informational social support from either online or offline sources are important contributors to one's quality of life (Leung and Lee 2005).

In this study, we follow the conceptual reasoning that satisfaction from one's life activities contributes to domain life satisfaction and overall life satisfaction (Diener 1984; Sirgy 2002). This theoretical logic has been empirically validated in IS studies on mobile service and Internet use (Choi et al. 2007; Techatassanasoontorn and Tanvisuth 2010). We examine how social media use in different life domains influences other domains and how this ultimately shapes overall life satisfaction. Research shows that many attributes in senior citizens' lives such as adaptation, social participation, getting and giving support, being active, and lifelong learning can contribute to improving their quality of life (Escuder-Mollon et al. 2013).

RESEARCH FRAMEWORK

Our preliminary theoretical framework is built on the broad theorizing of the life satisfaction process (Campbell 1981; Diener et al. 1999). The theoretical logic of this process is that overall life satisfaction is derived from one's satisfaction with various life domains. Reported satisfaction reflects the extent to which one's goals and needs are met. For example, poor health can make a person feel bad and unhappy. Such ill health is likely to negatively influence how he or she assesses his overall life satisfaction (Diener 1984). In addition, a person's satisfaction in one life domain may affect his or her satisfaction in other life domains. For example, job satisfaction can affect a person's satisfaction with the social life, family life, and/or leisure life.

However, measuring life satisfaction is a complex process and may constitute both subjective and objective components (Escuder-Mollon et al. 2013). Previous studies have looked at the relationship between life satisfaction and objective conditions such as income and education. However, evidence from recent studies suggests that there is a limit to the extent to which material living conditions contribute to a good life (Easterlin 2001; Howell and Howell 2008). In other words, there are other intangible attributes that are subjective in nature for a person to have a good life. Some of these are positive relationships with family and friends, self-perception, and self-achievements (Escuder-Mollon et al. 2013). Hence, to effectively explain a person's life satisfaction, several life domains need to be measured and assessed as to how they affect overall life satisfaction (Sirgy 2002).

In this study, we extend the life satisfaction process logic to examine the role of social media in people's lives. Social media is applicable and useful in various activities across different life domains. For example, Junco et al. (2011) found that social media can be used to discuss study topics and help students improve their learning performance. Neiger et al. (2012) shows how social media can be appropriated for health promotion. Social media is a useful platform for people to share their opinions regarding products and services (Mangold and Faulds 2009). Park et al. (2009) found that individuals use Facebook for various purposes such as socializing, status seeking, entertainment, and information seeking. However, previous research on social media has mainly focused on youth and young adults. We contend that scholars should not ignore the increasing number of senior citizens who use ICT in general and social media in particular and how their ICT use can be beneficial to their quality of life in a/digital society. Senior citizens are the fastest growing group of social media adopters and their lifestyles are different from younger adults or teenagers. For example, Oskman (2005) suggests that senior citizens' use of ICT applications is different from the younger generation due to physical limitations, learning abilities and access to hardware and applications. Studies on how they use social media and its effect on different life domains and overall life satisfaction can inform research and practice on the place of social media in older adults' lives.

Based on these arguments, we extend the life satisfaction process reasoning to argue that satisfaction from social media use across life activities shapes domain life satisfaction which then, in turn, influences overall life satisfaction. It is important to emphasize that the theoretical model offers process logic to guide the empirical enquiry in this study. Precise theoretical logic of the relationship between social media use, domain life satisfaction, and overall life satisfaction is inductively analyzed and emerges from the data. Figure 1 presents a preliminary theoretical model to illustrate the process of how social media use influences life satisfaction.

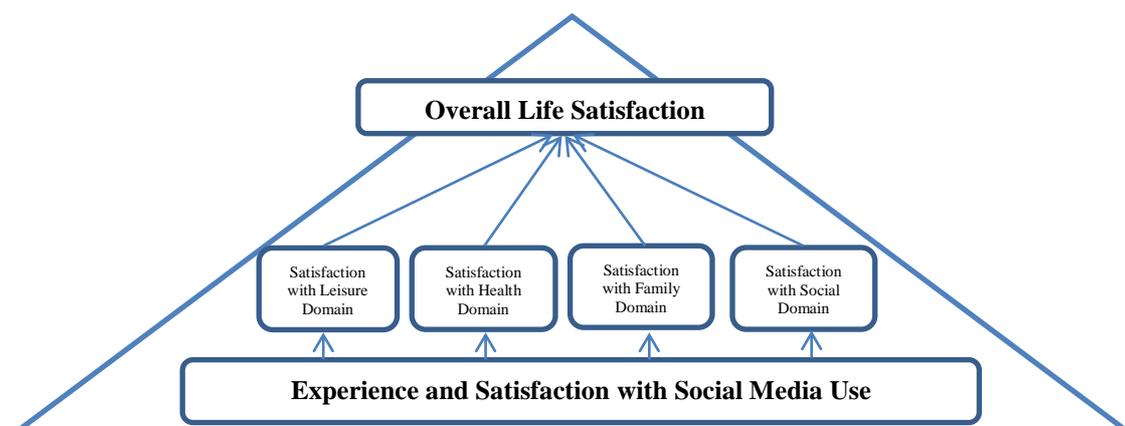


Figure 1: A Theoretical Model of Social Media Use and Impact on Senior Citizen's Life Satisfaction

Note: The diagram above uses the leisure, health, family, and social life domains to illustrate the influence of social media use on life satisfaction. In an empirical evaluation, the life domains are inductively analyzed and emerged from the data on senior citizens' use of social media in their daily lives. In other words, the empirically derived life domains may be different from those shown in the above Figure.

METHODOLOGY AND ANALYSIS

Social media applications can be appropriated in various ways. For example, Facebook has been used for collaborating in school, organizing a meeting among friends, and posting a status to call for help. Therefore, it is not possible to precisely theorize how different people including senior citizens may use social media to support their life needs. Without a validated instrument to explicate social media use, we chose to develop precise measurements of senior citizens' social media use directly from our study participants. Our research follows a two-phased approach to first develop rich measures of social media use and relevant life domains. In the second phase, we used the social media use instrument from the first phase along with validated measures of overall and domain life satisfaction to examine the influence of social media use on senior citizens' life satisfaction.

Phase 1: Development of the Social Media Use Measures

We conducted initial focus group interviews with two groups of 15 senior citizens (10 females and 5 males) from social media workshops in September 2013. Then, the members from these first two groups referred us to two groups of retired professionals (5 females and 2 males) and retired civil servants (3 females and 3 males) who were their friends and acquaintances. These first four focus group interviews were conducted in Bangkok, Thailand. After that, we identified senior citizens who were social media users outside of Bangkok. We expanded our interviews to all the regions of Thailand through the means of convenience sampling by making posts on Facebook and sending private messages to various groups of NGOs, Associations of Senior Citizens, and Associations of Retired Civil Servants throughout Thailand. In addition, we also contacted senior citizens by phone and through social media channels and asked them to invite their friends and colleagues to join focus group interviews. Overall, we conducted 24 group interviews with 124 senior citizens in 20 provinces across all 4 major regions in Thailand (Central, North, South, and Northeast) from September 2013 to January 2014.

During the focus group sessions, we asked participants to share information with us using three open-ended questions: "How did you start using social media and why?" (Goal: to obtain background information about the senior citizens' lifestyles) "What social media services do you frequently use and why?" (Goal: to identify social media use and life domains) and "What do you usually use social media for and how do you use them to support your lifestyle?" (Goal: to identify the perceived influence of social media use and the general sense of satisfaction in life domains).

We audio-taped and transcribed all interview sessions. The transcripts were used to identify social media use experiences and associated life domains. Based on the life domain definitions from the literature, the two authors independently coded social media use experiences and their associated life domains, according to the three key pieces of data from the focus group interviews. This data covered the purpose of social media use, how it was used, and the types of social media applications. For example, "I use Facebook to contact my daughter who lives in the United States." was coded as "contact family" (social media use experience) that is associated with the family life domain.

Disagreements on social media use experience or life domains were resolved through discussion between the two coders. Overall, a total of 48 different social media use experiences in 10 life domains were identified. These ten life domains identified from the data are in line with past/previous studies (Choi et al. 2007; Techatassanasoontorn and Tanvisuth 2010). They are family, friend, community, leisure, health & safety, self, social, education, consumer, and religion. The ten life domains and illustrative interview excerpts are shown in Table 1.

Next, we used two-step Q-sorting (Moore and Benbasat 1991) to assess the reliability and construct validity of the social media use items (Nahm et al. 2002). In the first round, four participants who were not involved with the project were asked to examine and sort 48 social media use experiences according to the ten life domains. If the participants believed that a particular social media use experience did not match any of the ten life domains, they could categorize this as part of the "Ambiguous or Unclear" group. All items were written on index cards. The Fleiss's Kappa had an average value of 0.64 ($p < .001$), suggesting substantial agreement among raters. After the sorting procedure, the authors and the four participants discussed and clarified the ambiguous items. A few items were merged together and the number of social media use items was reduced to 46 items. In the second round, we asked two different participants to sort the modified social media use experiences from the first round into life domains as they saw fit. The two participants created eight and twelve life domains. The Fleiss's Kappa was 0.45 ($p < .001$), suggesting moderate agreement between the two raters. The most ambiguous domains were the community and social life domains. The authors and the two participants discussed and agreed that these two life domains should remain separate. We also agreed that some of the similar social media use experiences should be merged. The final number of social media use experiences was reduced to 44. Overall, we concluded that the construct measures have content, convergent, and discriminant validity.

Table 1. Ten Life Domains and Selected Interview Scripts

| Life domain | Goal | Context | Type | Interview excerpts |
|-------------------|----------------------------------|---|-----------------------------------|--|
| Family | Stay connected | Live separately from family | Facebook, Skype and Line Chat App | "I feel that I am closer to my family because of social media." |
| Friend | Nurture friendship | Reconnect with old friends | Facebook and Line Chat App | "I found many old friends from high school and college." |
| Community | Community involvement | Participate or invite others to participate in community services | Facebook | "I volunteered for many community events." |
| Leisure | Pass the time | Wait in queues | Line Chat App and YouTube | "I usually use Line Chat with my friend when I'm waiting in line." |
| Health and Safety | Health improvement | Learn about illness and alternative medicines | YouTube and Blog | "I learned about herbal medicines from YouTube." |
| Self | Self-accomplishment | Want to show off self-accomplishment | Facebook | "I like to show my vacation pictures on social media." |
| Social | Expand social network | Find new friends and those who share similar interests | Facebook and Blog | "I use social media to find a new interest group like the bicycle club." |
| Education | Learn new things | Learn about cooking and traveling | YouTube | "I usually learn about new recipes on YouTube." |
| Religion | Achieve inner peace and serenity | Absorb monks' religious teachings | YouTube and Blog | "I usually listen to a monk's sermon in my free time." |
| Consumer | Save money | Want to save money | Facebook | "I search for deals to save money on social media." |

Phase 2: Examining the Influence of Social Media Use on Senior Citizen's Life Satisfaction

In this phase, we used a field survey to evaluate the influence of satisfaction from social media use on domain life satisfaction and the influence of this on overall life satisfaction. Consistent with past research on IS use and life satisfaction (Choi et al. 2007; Techatassanasoontorn and Tanvisuth 2010), we used three groups of constructs in the questionnaire: satisfaction from social media use, domain life satisfaction and overall life satisfaction. We measured all three constructs with the 7-point Likert scale. The scales of satisfaction from social media use are anchored with 1 – "strongly dissatisfied" to 7 – "strongly satisfied" while a scale of 0 is used for "never used". The domain life satisfaction and overall life satisfaction scales were measured from 1 – "strongly disagree" to 7 – "strongly agree". The survey instrument was pretested with 12 senior citizens. Some modifications were made to clarify a few social media use experience items.

To draw survey participants from diverse and different economic and educational backgrounds, we distributed 600 questionnaires to senior citizens who lived in retirement homes and those from the retired civil servant associations from all four regions in Thailand. During the three months (January – March 2014), the two authors and three research assistants mailed the survey and travelled to various parts of Thailand to distribute, administer, and collect questionnaires. In total, we received 341 surveys back from both face-to-face meetings and postal mail. After excluding cases with missing data or incomplete responses, 318 surveys were retained for data analysis. Overall, there were 130 male and 188 female respondents and more than 76% of participants were between 60-65 years old. Most (63%) were married and lived with their spouse. Almost 70% held a college degree and about 50% earned a monthly income of between 15,000 – 30,000 baht, which is considered to be in the middle income bracket in Thailand. Close to 60% of the respondents had more than three years experience

with social media. More than 55% of the respondents used social media on a daily basis while about 30% used it 3-6 days a week. More than 58% accessed social media through smartphones or tablet devices, while more than 70% used computers.

RESULTS

We first present the respondents' patterns of social media use and satisfaction among 44 social media use experience items. Next, we report the evaluation of the influence of satisfaction from social media use on domain life satisfaction and overall life satisfaction.

Table 2 presents patterns of social media use and respondents' levels of satisfaction. Our analysis shows that participants used social media and were satisfied with their social media use in all ten life domains. The top ten activities fell into family, health, leisure, consumer, self, and friend life domains. Our findings were consistent with that of Chou et al. (2009) who argued that social media was useful for health communication and that an increasing number of seniors are likely to use social media for such a purpose. High usage of social media for familial purposes among seniors is not surprising. It was reported in Croll (2006) that people in Asian societies tended to commit to family and relationships within the family are related to their well-being. In addition to these activities, social media is also used by seniors for leisure purposes, such as taking photographs and posting pictures, playing games, and browsing social media to pass the time.

While senior citizens reported social media use and satisfaction with its use in the family, health and leisure domains, they are least satisfied with social media use to form new social relationships. Although it is used by adolescents and young adults to find new friends (Wilson et al. 2010), the data obtained from our focus groups showed that some seniors are not comfortable with using social media to establish new relationships due to a lack of trust and certain safety concerns. This finding is in line with prior research that has suggested that trust is an important factor affecting information sharing and new relationship development (Fukuyama 1995). Similarly, Coppola et al. (2004) also pointed out that trust is a critical determinant of successful online interactions. Therefore, a lack of trust mentioned by the seniors in our study explains their low satisfaction with the use of social media to build new relationships.

Next, we conducted Partial Least Squares Structural Equation Modeling (PLS-SEM) using SmartPLS to evaluate the influence of satisfaction with social media use on domain life satisfaction and its consequent influence on overall life satisfaction. We decided to use PLS-SEM because our data did not have a multivariate normal distribution. Mardia's coefficient is higher than ten, indicating non-normality. PLS-SEM does not have a strict requirement on data distribution (Hair et al. 2013). Our sample size of 318 satisfies the minimal sample for PLS-SEM, which should be ten times the largest number of structural paths pointing to any latent construct in the model. In our model, the largest number of paths pointing to overall life satisfaction is ten. Finally, our model has both formative constructs (satisfaction from social media use) and reflective constructs (overall life satisfaction). Compared to the covariance-based SEM, PLS-SEM can accommodate models that have both types of constructs. Therefore, we believe that PLS-SEM is an appropriate analysis method.

Table 2. Social Media Use and Senior Citizen's Level of Satisfaction

| Life domain | Social media use | Never use | Mean | S.D. |
|-------------|---|-----------|------|------|
| Family | Use social media to discuss, share pictures and follow family members' activities | 2.3% | 5.79 | 1.55 |
| | Use social media to check on family members' safety | 8.2% | 5.61 | 1.77 |
| | Use social media to tell family about my whereabouts | 11.7% | 4.88 | 2.17 |
| | Use social media to connect with family members who live far away | 4.7% | 5.63 | 1.73 |
| Friend | Use social media to send electronic greeting cards on special occasions | 7.9% | 5.32 | 1.95 |
| | Use social media to communicate with friends and follow their activities | 4.4% | 5.56 | 1.65 |
| | Use social media to arrange get-together with friends | 6.2% | 5.35 | 1.85 |
| | Use social media to rediscover old friends | 12.0% | 4.89 | 2.17 |
| | Use social media to share safety information with friends | 8.8% | 5.02 | 1.98 |
| Work | Use social media to distribute work-related news | 9.4% | 5.02 | 1.98 |

| | | | | |
|-----------|--|-------|------|------|
| | Use social media to communicate with customers | 20.8% | 4.09 | 2.41 |
| Community | Use social media to distribute and receive community/provincial related news and activities | 8.5% | 5.08 | 1.99 |
| | Use social media to distribute news related to volunteer activities within own community | 10.9% | 5.08 | 4.39 |
| | Use social media to connect between community leaders and members | 10.6% | 4.72 | 2.08 |
| | Use social media to receive news from central government and then distribute them to community members | 18.8% | 4.26 | 2.35 |
| | Use social media to distribute charitable news to community members. | 11.7% | 4.79 | 2.16 |
| Health | Use social media to search for information related to healthcare, exercise and healthy food | 1.8% | 5.62 | 1.43 |
| | Use social media to consult friends, relatives or health experts on health related issues | 10.3% | 4.89 | 2.02 |
| | Play social media games for brain exercise to prevent memory loss | 3.5% | 5.74 | 1.53 |
| | Use social media to share information about health and medicines | 5.6% | 5.43 | 1.71 |
| Consumer | Use social media to look up product information and price | 9.1% | 5.03 | 1.95 |
| | Use social media to follow news from favorite shops | 13.5% | 4.58 | 2.13 |
| | Use social media to make free phone or video calls to save money | 3.8% | 5.74 | 1.66 |
| | Use social media to exchange product information with others | 19.1% | 4.15 | 2.29 |
| Education | Use social media to learn new things such as stock trading, English language and new technology | 3.5% | 5.43 | 1.69 |
| | Use social media to find answers from experts | 8.8% | 5.03 | 1.98 |
| Self | Use social media to post pictures of what I accomplish with my hobbies | 4.1% | 5.58 | 1.66 |
| | Use social media to share personal thoughts and opinions with people who share similar interests | 6.2% | 5.21 | 1.78 |
| | Use social media to share stories, pictures and video clips such as funny gags and classical music | 4.4% | 5.43 | 1.65 |
| | Use social media to post pictures of the places I have travelled to | 6.2% | 5.59 | 1.80 |
| | Use social media to build self-image showing that I am part of a digital society | 8.5% | 5.05 | 1.96 |
| | Use social media to share my life stories or other interesting stories with the friends who follow my channels | 13.5% | 4.73 | 2.20 |
| Leisure | Use social media to manage loneliness | 2.1% | 5.88 | 1.46 |
| | Use social media for entertainment purposes (movie, music, game and novel) | 3.2% | 5.50 | 1.68 |
| | Use social media to listen to sermons in free time | 5.9% | 5.01 | 1.77 |
| | Use social media to follow celebrities | 7.3% | 4.90 | 1.87 |
| | Use social media to find information about interesting hobbies | 3.5% | 5.37 | 1.64 |
| | Use social media to organize trips (accommodations, restaurants and travel routes) | 5.0% | 5.20 | 1.71 |
| | Use social media to find information about do-it-yourself projects (fixing things around the house) | 10.3% | 4.67 | 2.13 |

| | | | | |
|--------|--|-------|------|------|
| | Use social media to find interesting pictures | 8.8% | 5.09 | 2.04 |
| | Use social media to share religious verses with others | 13.5% | 4.71 | 2.21 |
| Social | Use social media to find new friends | 12.3% | 4.66 | 2.17 |
| | Use social media to join different groups to share experiences | 7.0% | 5.16 | 1.78 |
| | Use social media to discuss news (e.g., politics) | 9.1% | 4.90 | 1.97 |

The measurement model has one reflective construct (overall life satisfaction with five items) and ten formative constructs (satisfaction from social media use) in ten life domains. Domain life satisfaction in ten domains is a single-item measurement. Formative indicators uniquely contribute to the latent construct, thus they do not necessarily need to covary. Since formative indicators do not need to be correlated, it is not appropriate to conduct the conventional construct consistency assessment that relies on common factor analysis (Petter et al. 2007). We followed the procedure suggested by Bollen and Lennox (1991) and Diamantopoulos and Siguaw (2006) to assess construct validity by examining item weights and evaluating reliability by examining multicollinearity. No evidence of multicollinearity was identified since the highest variance inflation factor (VIF) was 3.9, which is below the suggested cut-off of 5.0 (Hair et al. 2013). We kept most of the non-significant indicators (e.g., social media use items in the self life domain) to retain content validity but we removed a few indicators that had high cross loadings (e.g., social media use items in the friend and education life domains) (Bollen and Lennox 1991). The convergent validity and reliability of the reflective construct (overall life satisfaction) were evaluated by examining the item loadings and composite reliability. The convergent validity and reliability are considered acceptable because all items are significant at $p < 0.01$ with the loadings in the range of 0.71-0.87. The discriminant validity of all constructs was evaluated by examining item-construct loadings and cross-loadings, and the average variance extracted (AVE). All items load higher on their hypothesized construct than on other constructs and the square root of a construct's AVE is larger than its correlations with other constructs. Therefore, discriminant validity is satisfied. We found that the reflective construct satisfies the validity and reliability criteria.

Data collection from self-reported surveys is susceptible to common method bias (Podsakoff et al. 2003). We conducted Harman's single-factor test using exploratory factor analysis. Common method bias exists if a single factor is identified from the unrotated factor solution and the first factor explains the majority of the variance in the variables (Podsakoff et al. 2003). In our unrotated factor analysis results, the first factor accounted for 43% of the variance and the six factors together accounted for 63.7% of the variance. We concluded that common method bias is not a major concern for this study.

We evaluated the relationship between social media use and life satisfaction by first estimating the influence of satisfaction from social media use on domain life satisfaction (See Figure 2).

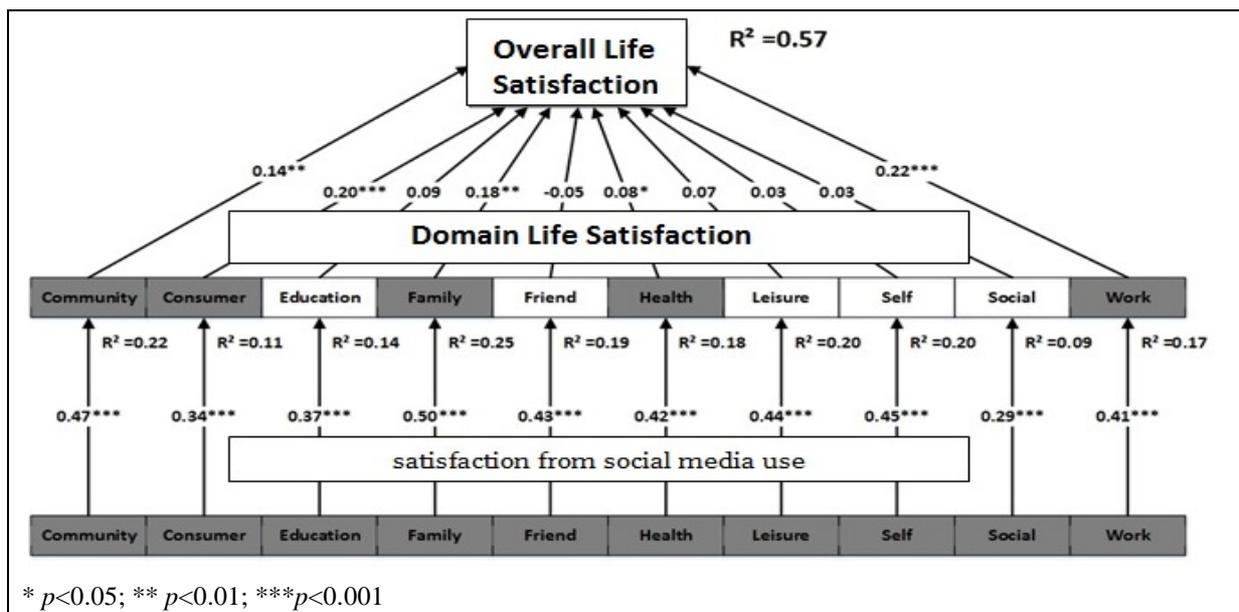


Figure 2: Structural Model Results

Path coefficients for satisfaction from social media use in each life domain have strongly significant positive effects ($p < .001$) on domain life satisfaction across all ten life domains. The highest estimated coefficient and explained variance are from the family domain ($b = 0.50$, $R^2 = 0.25$). The lowest estimated coefficient and explained variance are from the social domain ($b = 0.29$, $R^2 = 0.09$). Next, we evaluated the influence of domain life satisfaction on the overall life satisfaction. Path coefficients from five life domains had positive and significant effects on the overall life satisfaction. The five salient life domains are the community ($b = 0.14$, $p < .01$), the consumer ($b = 0.20$, $p < .001$), the family ($b = 0.18$, $p < .01$), the health ($b = 0.08$, $p < .05$), and the work domain ($b = 0.22$, $p < .001$). The overall explained variance (R^2) is 0.57.

DISCUSSION AND CONCLUSIONS

This research theorizes the influence of senior citizens' social media use on life satisfaction. Given the research goal, we identify how senior citizens use social media in their everyday life, conceptualize the influence of social media use on life satisfaction, and empirically assess the relationships. Our results show that senior citizens use social media to support everyday activities in ten life domains. This is consistent with previous research findings (Champeau 2008; Choi et al. 2007; Leist 2013; Mangold and Faulds 2009; Mathews 2013; Techatassanasoontorn and Tanvisuth 2010) that ICT use can improve satisfaction in various life domains. In addition, we found that senior citizens' reported satisfaction in five life domains, namely community, consumer, family, health, and work domains from social media use which significantly contributed to their overall life satisfaction.

As the ageing society is approaching and the use of social media is becoming part of everyday life, our work has shown how social media could be used to support senior citizens in their everyday needs and improve their overall life satisfaction. Younger generations may use social media to enhance relationships with older adults in their family (e.g. participating in their groups, communicating with them on their Facebook wall, sharing photos with them). These relatively simple activities for younger generations to stay connected with older adults have the potential to improve older adults' life satisfaction. For example, the Hong Kong social welfare government agency uses social media to monitor and enhance senior citizens' well-being (Hong Kong Social Welfare Department 2008). Their goal is to prevent many societal issues such as loneliness, abandonment, and to improve healthcare for senior citizens. The healthcare industry may also use social media to ensure the safety of their patients as well as educating them through social media use as well. Our research, therefore, makes research and practical contributions on how social media use shapes senior citizens' life satisfaction through domain life satisfaction.

This research was conducted in a single country context where data may be predisposed toward one specific culture. Thus, generalizing findings to social media use and life satisfaction of senior citizens in other countries should be done with caution. In addition, we did not evaluate how senior citizens' level of ICT expertise may affect differences in their use of social media to improve their life satisfaction. Findings shown in this study were a result of cross-sectional evaluation of satisfaction with social media use and life satisfaction. Thus, a limitation on a causal interpretation and implication should be noted. Longitudinal studies to examine whether and how life satisfaction changes overtime after senior citizens have been using social media may add new understanding of the effectiveness of social media use on life satisfaction. Future research may consider conducting a comparative study across multiple countries.

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