

# INTERGENERATIONAL COMMUNICATION: THE ROLE OF SOCIAL MEDIA IN GENERATIONAL PERCEPTIONS AND AGE STEREOTYPES IN THAILAND

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## ABSTRACT

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The world society is aging, with an increasing older population. In 2050, aged countries, those with more than 20% of population 60 years or over, are expected to represent 44% of the world's population (United Nations, Department of Economic and Social Affairs, Population Division, 2015). Thailand is officially becoming an aged society in 2021 (Thairath, 2018). Evidently, communicating with older adults is inevitable. Then, it is to be questioned how people communicate across generations better. Social media allow people to be connected more conveniently. Possibly, this can bring people of different ages and generations closer and promote interdependence. This study investigated the influence of social media on intergenerational communication. Two purposes were (1) to study whether the use of social media influenced age stereotypes perceived by different generations and (2) to analyze generation perceptions resulting from intergenerational communication via social media. In Phase 1 (N = 531), using LINE and Facebook made people satisfied with communication across all generations, but influenced age stereotypes towards the middle-aged group only. In Phase 2 (N = 326), interactions via social media significantly predicted how younger and older generations perceived each other – viewing each other positively in terms of abilities and personalities, but negatively in media behaviors. However, those negative perceptions decreased when the use of social media across generations was increased. Social media may serve as a means of intervention to trigger changes in age stereotypes and generational perceptions.

**Keywords:** Social media; intergenerational communication; age stereotypes; aging; generation perceptions

## 1. INTRODUCTION

The world society is aging with an increasing older population. In 2018, people aged 65 and above outnumbered children aged under five years old for the first time in history (United Nations, Department of Economic and Social Affairs, Population Division, 2019). In 2050, aged population countries, where at least 20% of their population are persons whose age is 60 years or over, are expected to represent 44% of the

world's population (United Nations, Department of Economic and Social Affairs, Population Division, 2015). In major areas, the projection of older adult numbers in 2050 predicts 35% in Europe, 28% in North America, 25% in Latin America and the Caribbean, 24% in Asia, and 23% in Oceania (United Nations, Department of Economic and Social Affairs, Population Division, 2017). Today, only Japan, Germany, and Italy fall into this category of aged society (O'Connor, 2014). In Thailand, the 2018 population was 66.4 million, with 16.06% of people aged 60 years and older (National Statistical Office, 2018). Since 2005, Thailand has entered the era of an aging society where at least 10% of the population is 60 years and over and is on course to become an aged society in 2021 (Thairath, 2018).

In the near future, when the world turns to aging and aged societies, a significant concern is raised around the question of how to prepare people of aged society for their living. The answer to this question is twofold: to promote an interdependent society, where people of different generations help each other more, or to build an independent society in which older people rely more on themselves and technologies in daily living. Some societies seem to support interdependence for older people, but others may facilitate independent living for them. About 70% of older persons in Europe and North America live independently – living alone or with spouse only – compared to 50-66% of those in Africa, Asia, Latin America, and the Caribbean, where elderly are likely to co-reside with their children (United Nations, Department of Economic and Social Affairs, Population Division, 2017). Older people in Thailand and other Asian societies are typically living with their adult children. Cultural values define the age-related roles and expectations that influence perceptions about seniority and practices towards older persons. For example, filial piety is considered a major value for some cultures where people closely look after their parents; respect guides the younger generation to speak and interact with older persons in a certain way.

This study underlines that successful aging seems to call for interdependent rather than independent society. As an older population is increasing, especially in Thailand where birth rate has declined continuously since 1959 (Thailand Birth Rate 1950-2019, n.d.), communication and interaction with older adults become more important. Evidently, communicating with older adults is inevitable. Extensive research has studied aging and communication since the 1980s to better understand communicative practices that lead to successful aging (Giles and Dorjee, 2004). However, the major finding shows that communication with older adults is associated with negative stereotypes of aging, leading to difficulties and ineffective outcomes such as over-accommodation and patronizing messages (Hummert et al., 1998). Then, the challenge becomes intense for how people communicate across generations better.

Fortunately, advances in communication technologies bring in a global society where people are connected more conveniently through social media. Possibly, this online communication can bring people of different ages and generations closer and promote interdependence.

Specifically, this study investigated the influence of social media on intergenerational communication through an intergenerational communication perspective based on the communication predicament model of aging. Aging comes with various changes, including physical, mental, cognitive, linguistic, and sociological deviations. Thus, older people are usually faced with "the communication predicament of aging," which occurs when their actual communicative competence is viewed inconsistently and negatively in the perception of others (Ryan et al., 1986).

Ryan et al.'s (1986) communication predicament model of aging offers a breakdown cycle experienced by older persons. The cycle starts when aging cues, such as physical appearance, cognitive loss, and hearing/speaking difficulties, are recognized and then activate negative judgment from other age groups, perceiving that older persons' competence declines. This negative judgement may stem from age-stereotyped expectations which vary by society and culture. The negative perception of competence (e.g., weak, disabled, slow) leads to adjusted speech behavior towards the older persons, such as patronizing speech, over-accommodation talk, and simplified topics. This speech modification causes the breakdown in two ways: (1) limited conditions for older persons to communicate effectively as they may be directed by social expectations of their lowered competence (e.g., to be dependent/assisted) and (2) reinforcement for age stereotypes as they may re-evaluate own competence according to the negative perception and behavior of others towards them. This breakdown cycle decreases personal control, self-esteem, and social interactions of older persons.

Furthermore, the model indicates that the communication predicament can be lessened by intervention that improves the older persons' communication skills, their self-control and self-esteem, and stereotyped and speech behaviors of other age groups. The intervention can be in various forms such as to give training in communication skills, to provide communication assisted tools, and to promote appropriate age-related expectations and behavior of others (Ryan et al., 1986). Some past research promoted a training program as an effective intervention to reduce rest home staff's elder speaking patterns that reinforced the

older person's dependence and incompetence and showed the staff's control over residents at nursing homes (Williams, 2006; Williams et al., 2003).

When the global society adopts social media as a necessity of daily living, it brings changes in various aspects, especially the way people bond, relate, and communicate to each other across generations. With social media, interactions between younger and older age groups are more convenient. Possibly, the negative judgments related to age stereotypes may be altered, viewing older persons who use it in a more positive light – media savvy, competent, interactive. Previous studies have shown that attitudes towards older persons are mostly associated with negative age stereotypes and then tend to be unfavorable about them (Giles et al., 2008). Compared to the younger persons, being incompetent in communication and technologies is one of the negative age stereotypes towards older persons. However, as evidenced in past research, social media may serve as another intervention to interrupt the communication predicament guided by age stereotypes. A 79-year-old YouTuber, Peter, with the pseudonym of “Geriatric1927,” posted 66 videos about his life and view on news and gained positive responses from younger fellows who interacted with his video posts. The academic analysis of “Geriatric1927” showed that social media was an online platform to support healthy aging; YouTube could improve intergenerational connection and the older person's self-esteem (Harley and Fitzpatrick, 2009). Also, prior to the prevalence of social media, traditional media (i.e., telephone, email, letters, and cards) were found positively related to relational quality between grandparents and grandchildren (Harwood, 2000).

Major social media were first released after the year 2005 – Facebook in 2004, YouTube in 2005, Instagram in 2010, and LINE in 2011 – and have gained popularity during the past 10 years. However, only a limited number of studies have investigated the role of new media, especially social media, in intergenerational communication. This study was expected to provide theoretical and practical contributions – the role of social media as an intervention to trigger changes in age stereotypes and minimize difficulties in intergenerational communication. Based on previous research, intergenerational talk seems to be dissatisfying from the perspective of both younger and older sides (Giles et al., 2008). Reducing age stereotypes could be one way to bring positive outcomes to both groups (Chen et al., 2017).

Accordingly, this study explored whether social media in intergenerational communication could serve as a means of intervention to interrupt the communication breakdown cycle experienced by older persons. Particularly, the purposes of this study were (1) to examine whether the use of social media among older generation influenced age stereotypes perceived by younger generation and (2) to analyze generational perceptions as a result of intergenerational communication via social media. Social media behavior (i.e., types and minutes of intergenerational communication) and intergenerational communication were investigated as independent variables; age stereotypes and generation perceptions were dependent variables. Four research questions were proposed.

- RQ1 How were types and minutes of intergenerational communication via social media related to age stereotypes?
- RQ2 How was intergenerational communication satisfaction from social media related to age stereotypes?
- RQ3 What generational perceptions emerged from intergenerational communication via social media?
- RQ4 Did intergenerational communication via social media influence generational perceptions?

## 2. RESEARCH METHOD

### Research design

This study consisted of two phases. The first phase was to answer Research Questions 1 and 2 by using quantitative methods. Also, open-ended questions were included in the first data collection to develop a rating scale of generational perceptions through content analysis. This scale was used in the second phase to answer Research Questions 3 and 4.

The two phases used a cross-sectional design. Each data collection in Phase 1 and Phase 2 was completed during a two-week period, using purposive sampling for younger and middle age groups and snowball sampling for the older group. Participants were users of selected social media that are popular platforms in Thailand. The top-four social media were LINE, Facebook, Instagram, and You Tube (Electronic Transactions Development Agency, 2017). Twitter was also added as its use is common in Thailand. The protocols used in this study were approved by the Committee of Human Subjects Protection of the author's institution.

Two teams of research assistants were instructed to approach participants at public places such as universities, parks, shopping malls, and grocery stores in Bangkok, Thailand. Participants were recruited based on three categories of generation: younger (between 20 - early 30s), middle age (35-59), and older adult (60 and over) (Whitley and Kite, 2006, p. 374). Those who did not communicate with people of a different generation were excluded.

## Phase 1

### Sample

The goal of the first phase served the first objective of this study – to examine whether the use of social media among the older generation influenced age stereotypes perceived by the younger generation. Participants ( $N = 531$ ) were volunteers and provided with an informed consent option. They answered a screening question asking if they used the five specified social media and then completed a self-administered questionnaire that consisted of three parts: demographics and social media daily use, intergenerational communication and satisfaction, and age stereotypes. When reaching the second part, they answered another screening question checking if they had experience in using social media to interact with people from a different generation. They skipped to the last part if their response was “no.” About 93.6% of participants used social media to communicate with other generations.

Participants were 173 males (32.6%), 348 females (65.5%), and 6 persons of alternative gender (1.1%), with ages ranged from 18-79 years old ( $M = 41.22$  years old,  $SD = 13.78$ ), representing age categories of under 20 years old (1.5%), younger (34.5.0%), middle age (48.9%), and older adult (15.1%). About 29.4% worked in government organizations, 28.8% in the private sector, 8.1% in their own business, and 5.8% in state enterprise, while 10.2% and 7.7% were retired or students, respectively. Those who reported their occupation as freelance (9.6%) were lawyers, researchers, cleaning and driving service providers. The majority of them were university graduates (87.2%). Participants reported their monthly income between 10,000-40,000 baht (65.4%), over 40,000 baht (25.4%), and less than 10,000 baht (9.2%).

Almost all participants were users of LINE (98.7%), followed by Facebook (89.3%), YouTube (81.1%), Instagram (42.7%), and Twitter (19.7%). Overall, among the users of each social media platform, about 94.1% reported minutes spent daily on LINE between 30-300 minutes, 78.9% on Facebook between 30-300 minutes, 87.3% on YouTube between 10-240 minutes, 67.1% on Instagram between 30-180 minutes, and 47.1% on Twitter between 30-60 minutes. Average use of social media by age categories is presented in Table 1.

**Table 1:** Summary of Social Media Use (Average Minutes per Day)

	All Age Groups		Younger	Middle Age	Older Age
	Mean	SD	(20-34 yrs.) $n = 180$	(35-59 yrs.) $n = 255$	(60 yrs. and Over) $n = 79$
LINE	213.30	203.13	231.24	198.08	147.75
Facebook	149.93	163.74	169.36	161.80	119.53
YouTube	96.56	110.50	136.10	86.59	56.13
Instagram	52.31	118.52	168.82	65.44	26.00
Twitter	17.65	58.72	81.88	29.18	17.84

**Notes:**  $N = 523$ . Other social media (e.g., *LinkedIn*, *WeChat*, *skype*, *Tumblr*, *Twitch*, online games) were reported, with average use ranged from 6.60-12.34 minutes per day for all age groups ( $M = 7.78$ ;  $SD = 43.99$ ).

### Instrument

#### Intergenerational Communication Measures

Intergenerational communication was operationalized as an interaction through social media with others who were at least 10 years older or younger than the participant. The interaction was analyzed in three dimensions: (1) social media use and relationship, (2) generational perceptions, and (3) intergenerational communication satisfaction. The first measure had two items to specify social media that was mostly used in intergenerational interaction, recording minutes per day, (see Table 2) and the relationships with the person being communicated with. Participants reported that they mostly used LINE (81.4%) and Facebook (19.0%) to communicate with other generations who were colleagues (60.1%), friends (40.3%), acquaintances (35.6%), family members (6.5%), romantic partners (17.5%), and others (2.3%).

**Table 2:** Summary of Social Media Mostly Used in Intergenerational Communication (Average Minutes per Day)

Social Media	Mean	SD
LINE	74.07	119.04
Facebook	21.66	78.22
Instagram	-	-
Twitter	-	-

**Notes:**  $N = 531$ . *Instagram* and *Twitter* were not reported as less than 10 of participants indicated each as their choice for social media mostly used to interact with different generations. Also, a few of the participants (2.3%) used other social media such as *WeChat* to communicate with others of a different generation ( $M = 0.21$ ;  $SD = 3.06$ ). About 5.8% of participants ( $n = 31$ ) reported that they did not use social media in intergenerational communication.

The second measure was generational perceptions, which referred to first impressions of people of different generations as a result of interaction with them through social media. The measure consisted of two open-ended questions asking “*When interacting with the persons who are at least 10 years older than you, what do you think about them?*” and “*When interacting with the persons who are at least 10 years younger than you, what do you think about them?*” Participants were instructed to write the first word that came to mind. The responses of these questions were analyzed by using content analysis to develop a rating scale for Phase 2.

The third measure was communication satisfaction in intergenerational interaction (Cronbach’s  $\alpha = .68$ ;  $M = 18.90$ ;  $SD = 4.41$ ). Four items, adapted from Giles et al. (2012) and McCann et al. (2005), were rated on a 7-point Likert scale from *Strongly disagree* (1) to *Strongly agree* (7). The items were: “*I enjoyed my conversation with the persons who are at least 10 years older than me,*” “*I enjoyed my conversation with the persons who are at least 10 years younger than me,*” “*I was not satisfied with my conversation with the persons who are at least 10 years older than me,*” and “*I was not satisfied with my conversation with the persons who are at least 10 years younger than me.*”

### Age Stereotypes

Age stereotypes towards each age category: younger 20-34 years old (Cronbach’s  $\alpha = .91$ ;  $M = 41.20$ ;  $SD = 10.35$ ), middle age 35-59 years old (Cronbach’s  $\alpha = .93$ ;  $M = 40.27$ ;  $SD = 10.24$ ), and older 60 years and over (Cronbach’s  $\alpha = .90$ ;  $M = 37.09$ ;  $SD = 11.19$ ) were assessed using nine items on a semantic differential scale rated on the 7-point Likert format from the least agreement with item (1) to the most agreement with the item (7). This scale measures two dimensions of age stereotypes, namely personal vitality 6 items (i.e., attractive-unattractive, strong-weak, active-inactive, liberal-conservative, healthy-unhealthy, flexible-inflexible) and benevolence 3 items (i.e., generous-ungenerous, kind-unkind, and wise-unwise) (Giles et al., 2012; McCann et al., 2005). The higher scores indicated positive stereotypes; the lower scores reflected negative perceptions.

### Data Analysis

In Phase 1, data analysis involved both statistical and content analyses. The responses about intergenerational communication – minutes of social media use per day and intergenerational communication satisfaction – and age stereotypes were computed in regression analyses to examine responses for Research Questions 1 and 2. Also, the open-ended responses regarding generation perceptions were categorized using content analysis. Two coders independently looked through the responses until they agreed on the final categorization and reached acceptable reliability. The content analysis is explained in the following section.

### Content Analysis

Generational perceptions scale items were developed from the participants’ responses to the two open-ended questions asking what they thought about those who were at least 10 years older or 10 years younger when interacting with them via social media. About 82.7% of all participants ( $n = 440$ ) reported their first thought of people in the different generation during their online communication. A total of 430 first perceptions of older generation, with 10 participants not giving responses, and 421 first perceptions of younger generation, with 19 missing responses, were reported. They were analyzed by two coders to develop categories of generational perceptions emerging from the qualitative data. The content analysis procedure involved several steps: selecting texts, determining the unit of analysis, developing content categories, coding units into categories, and analyzing data (Frey et al., 2000).

Firstly, selecting appropriate texts to examine, all reported perceptions were included in the content analysis. Secondly, determining the unit of analysis to code, a systematic sampling was used to select texts from all reported responses. Every fifth response was chosen as a representative to develop a coding scheme, resulting in 86 and 84 selected responses about perceptions of older and younger generations, respectively. To identify the appropriate unit to be coded, these responses were further analyzed for thematic units embedded in the messages.

Next, developing categories, two coders were trained and separately looked at the selected responses to identify categories. The two coders discussed and mutually resolved their disagreement on those emerged categories that were not consistent. Then, three descriptive categories of perceptions of older and younger generations were finalized: (1) positive characteristics, (2) negative characteristics, and (3) social media behaviors. Positive characteristics referred to responses indicating personalities that were admired by the participants. Negative characteristics were responses reflecting personalities that were not valued or appreciated by the participants. Social media behaviors were responses describing actions or habits that were perceived as inappropriate or problematic when using media technologies.

In the last two final steps of coding into categories and analyzing data, two coders independently coded about half of the responses, for both older and younger generational perceptions, into the three categories, except for about 20% of the responses that were coded by both coders to examine internal reliability of the coding. The intercoder reliability assessed by Scott's (1955) *pi* was .92 for older generation perceptions and .95 for younger generation perceptions. The raw percentage of agreement was 93% and 95% for older and younger generation perceptions, respectively.

Approximately, about 66% of the entire reported perceptions, which were 65.81% of the reported older generation perceptions ( $n = 430$ ) and 65.56% of the reported younger generation perceptions ( $n = 421$ ), could be classified into the three categories (see Table 3). The responses that were unclear, incomplete, or not related to the question were excluded. Those that were unable to be categorized were varied, such as "feeling normal," "good," "important," "happy," and "love nature."

Then, the coded responses with words or statements that were frequently used were selected and developed into items rated on a 7-point Likert scale, ranging from *Strongly disagree* (1) to *Strongly agree* (7). The examples of the selected responses were "I think the person is up-to-date to technologies," "I think the person has high experiences," "I think the person is not keen on using social media," "I think the person is a quick learner," and "I think the person uses incorrect words in texting,"

**Table 3:** A Coding Scheme: Descriptive Categories for Content Analysis

Emerg Categories	Description	Reported Older Generation Perceptions		Reported Younger Generation Perceptions	
		Coded Responses (%)	Response Examples	Coded Responses (%)	Response Examples
Positive Characteristics	Personalities that were admired	39.30	Up-to-date, experienced, credible, sensible, warm	43.94	Up-to-date, fast learner, creative, interactive, open-minded
Negative Characteristics	Personalities that were not valued	9.77	Conservative, boring, demanding	13.30	Careless, immature, emotional
Social Media Behaviors	Use of social media in an inappropriate way	16.74	Using media and applications with difficulties, over sharing of pictures and information	8.31	Using improper language, overuse of social media

The older generation perceptions scale consisted of 28 items, including 19 items of positive characteristics, four items of negative characteristics, and five items of social media behaviors. The younger generation perceptions scale comprised 22 items, including 13 items of positive characteristics, four items of negative characteristics, and five items of social media behaviors.

These scales were used in Phase 2 to answer Research Question 3 - what were the generational perceptions emerging from interaction with someone from a different generation? The existence of the emerged three categories of generational perceptions was tested via factor analysis. Also, the scales were to answer Research Question 4 - to examine whether the use of social media in intergenerational communication affected a generation's perceptions.

## Phase 2

### Sample

The goal of the second phase served the second objective of this study - to analyze generational perceptions that resulted from the use of social media in intergenerational communication. Participants ( $N = 326$ ) completed the self-administered questionnaire after volunteering and completing an informed consent. They answered two screening questions asking if they used the specified social media (i.e., Line, Facebook, Instagram, YouTube, and Twitter), and used them to communicate with others who were in a different generation. The term

“different generation” was also described as someone with an age gap of 10 years or more. Those who did not use the social media for intergenerational communication were excluded. The questionnaire consisted of two parts: (1) demographics and social media daily use and (2) social media daily use for intergenerational communication and generational perceptions.

Participants were 125 males (38.3%), 194 females (59.6%), and 7 persons of other gender (2.1%), with ages ranged from 18-71 years old ( $M = 33.33$  years old,  $SD = 12.97$ ), representing age categories of younger (55.8%), middle age (41.1%), and older adult (3.1%). About 36.2% worked in the private sector, 14.7% in government organizations, 5.2% in their own business, while 30.7% and 1.2% were students or retired, respectively. Those who reported other occupations (12.0%) stated these to be freelance, housewife, staff in non-profit organizations or in small shops, and unemployed. In terms of educational background, the largest group were graduates from university (51.6%), with others mostly from high school (32.4%), and vocational school (16.0%). Participants reported their monthly income as less than 10,000 baht (24.3%), between 10,000-40,000 baht (61.6%), and over 40,000 baht (14.1%).

### Instrument

#### Social Media Use

Participants provided details of how many minutes they spent daily on social media using *LINE*, *Facebook*, *Instagram*, and *You Tube*. The first question asked how much time they spent on each social media for general use. Again, most of the participants were users of *LINE* (99.1%), followed by *Facebook* (92.6%), *YouTube* (89.6%), *Instagram* (57.9%), and *Twitter* (29.8%). Overall, about 95.1% of participants reported minutes spent daily on *LINE* between 30-360 minutes, 97.5% on *Facebook* between 30-360 minutes, 94.6% on *YouTube* between 30-360 minutes, 91.0% on *Instagram* between 30-360 minutes, and 85.6% on *Twitter* between 10-240 minutes. Average use of social media is presented in Table 4.

**Table 4:** Summary of Social Media Use (Average Minutes per Day)

Social Media	General Use		Use for Intergenerational Communication*	
	Mean	SD	Mean	SD
LINE	164.70	152.04	129.21	111.39
Facebook	149.85	127.74	154.35	106.70
YouTube	155.46	100.31	-	-
Instagram	132.55	144.97	-	-
Twitter	130.84	123.49	-	-

**Notes:**  $N = 326$ . \*About 64.1% of participants reported *LINE* ( $n = 209$ ) as the social media mostly used for interacting with others from a different generation, followed by *Facebook* (32.8%;  $n = 107$ ). Less than 5% of participants used *Instagram* and *Twitter* for intergenerational communication.

The second question was to collect data on time spent talking with others from a different generation, which was defined in the questionnaire as someone who had an age difference of 10 years and above, on the mostly used social media. Similar to Phase 1, over 60% of participants mostly used *LINE* for intergenerational communication, followed by *Facebook* (32.8%). However, they spent more time on *Facebook* than on *LINE* by average (see Table 5). Next, the third question asked participants to specify the relationship of the person with whom they had intergenerational communication. They communicated with others of different generations who were family members (84.4%), romantic partners (29.0%), friends (57.6%), colleagues (47.8%), acquaintances (38.9%), and others (i.e., clients) (4.0%).

#### Generational Perceptions

The perceptions of the targeted generations were operationalized as overall characteristics attributed by a participant towards others of different generations whom they interacted with via social media. Two measures, derived from Phase 1, were older generational perceptions, with 28 items (Cronbach's  $\alpha = .85$ ;  $M = 130.14$ ;  $SD = 17.94$ ), and younger generational perceptions with 22 items (Cronbach's  $\alpha = .84$ ;  $M = 101.12$ ;  $SD = 15.56$ ) on a 7-point Likert scale. All items reflected the three categories of positive characteristics, negative characteristics, and social media behaviors.

#### Data Analysis

In Phase 2, the responses about social media use (i.e., minutes spent daily) and generation perceptions were analyzed through regression analysis and factor analysis to answer Research Questions 3 and 4. The results are reported in the next section.



### 3. RESEARCH RESULTS

The two objectives of this study were (1) to investigate whether the use of social media influenced age stereotypes, which were reflected in Research Questions 1 and 2; and (2) to explore different generation's perceptions emerging from intergenerational communication via social media, which were addressed in Research Questions 3 and 4. The findings showed that social media use for intergenerational communication affected age stereotypes of a certain age group. Additionally, generation perceptions were classified into five factors for both older and younger generations. Next, the results of each research question are reported.

#### Intergenerational Communication via Social Media and Age Stereotypes

Research Question 1 asked how types and minutes of social media use for intergenerational communication were related to age stereotypes. Linear regression analyses were computed between minutes of use for each type of social media and age stereotypes towards each age category. Each age category was excluded when running an analysis of the age stereotypes towards participants' own group. For instance, when running age stereotypes towards younger, participants in younger group were omitted. The results indicated that intergenerational interaction via social media significantly predicted age stereotypes for middle age only; it did not predict age stereotypes towards the other two age groups. The regression analyses specified that use of *LINE* ( $r^2 = 0.2$ ,  $F(1,252) = 4.34$ ,  $p < .05$ ) and *Facebook* ( $r^2 = 0.2$ ,  $F(1,252) = 3.93$ ,  $p < .05$ ) slightly affected age stereotypes. Each explained about 2% of the variance in age stereotypes towards participants of middle age ( $M = 4.44$ ,  $SD = 1.12$ ). In other words, when engaging in intergenerational interaction, people who are older or younger by 10 years and above tend to perceive those with age 35-59 in a positive light – attractive, strong, active, liberal, healthy, flexible, generous, kind, and wise.

Research Question 2 asked how intergenerational communication satisfaction from social media use was related to age stereotypes. Multiple regression analyses were computed between intergenerational communication satisfaction with the older generation or younger generation and age stereotypes for each age category. Again, each age category was excluded when running an analysis of the age stereotypes towards their own group. The findings showed that overall intergenerational communication satisfaction was a significant predictor of age stereotypes towards all age categories, and accounted for 8.0% of the variance in age stereotypes towards younger ( $R^2 = .08$ , adjusted  $R^2 = .08$ ,  $F(2, 278) = 12.58$ ,  $p < .001$ ); 8.0% of the variance in age stereotypes towards middle age ( $R^2 = .09$ , adjusted  $R^2 = .08$ ,  $F(2, 171) = 8.16$ ,  $p < .001$ ); and 8.0% of the variance in age stereotypes towards older ( $R^2 = .09$ , adjusted  $R^2 = .08$ ,  $F(2, 336) = 15.74$ ,  $p < .001$ ).

Satisfaction in communication with the younger generation was a stronger predictor of age stereotypes about younger ( $\beta = .17$ ,  $p < .05$ ) and middle age ( $\beta = .20$ ,  $p < .05$ ), whereas satisfaction in communication with the older generation strongly predicted age stereotypes about the older group ( $\beta = .32$ ,  $p < .001$ ) (see Table 5). In other words, age stereotypes towards younger and middle age are affected by communication satisfaction of other age groups who are older. On the other hand, age stereotypes of older persons are influenced by the communication satisfaction of the other age groups who are younger.

**Table 5:** Multiple Regression Analysis for Intergenerational Communication Satisfaction Predicting Age Stereotypes

Dependent Variable	Communication Satisfaction	
	Older Generation	Younger Generation
	$\beta$	$\beta$
Age stereotypes towards younger age	.12	.19*
Age stereotypes towards middle age	.07	.24*
Age stereotypes towards older age	.33**	-.06

Notes: \* $p < .05$ , \*\* $p < .001$ .

#### Intergenerational Communication via Social Media and Age Perceptions

Research Question 3 asked what were the generational perceptions resulting from intergenerational communication through social media. Exploratory factor analysis was conducted separately for perceptions of older generation and younger generation to explore a structure of the three generation perception categories: positive characteristics, negative characteristics, and social media behaviors. Firstly, all negative items were recoded, and then the KMO and Bartlett's tests were computed to determine sampling adequacy for conducting factor analysis and item correlation matrix, respectively. The KMO values of .88 for older generation perceptions and .90 for younger generation perceptions indicated the sufficient sample for exploratory factor analysis (Taherdoost et al., 2014). The Bartlett's tests for both generation perceptions were significant ( $p = .000$ ), showing that the correlation matrix was not an identity matrix and suitable for further factor analysis.



### Older Generation Perceptions

All 28 items were computed in principal component analysis with varimax rotation. A factor was retained when an eigenvalue was greater than 1.0 (Taherdoost et al., 2014). Another criterion was the Scree test, which was the plot of the eigenvalues, to determine the number of factors to retain. Those with eigenvalues in the sharp part of the plot before the eigenvalues started to become flat were retained. Also, a factor was valid when at least three items loaded at .50 or higher on the factor with no cross loadings over .30 on other factors.

The factor analysis generated three categories of generation perceptions with five items excluded due to cross loadings on other factors. The remaining 23 items loaded on three meaningful factors that accounted for 60.67% of the total variance. The three factors were different from the expected categories of generation perceptions: positive characteristics were separated into two constructs while negative characteristics and social media behaviors were combined into one factor. Thus, the new generation perceptions represented three dimensions: (1) adaptation to changes ( $\alpha = .89$ ), accounted for 28.31% of the item variance; (2) abilities and personalities ( $\alpha = .94$ ), accounted for 18.83% of the variance; and (3) worldview and media skills ( $\alpha = .91$ ), accounted for 13.53% of the variance (see Table 6).

Adaptation to changes consist of four items measuring a person's worldview of modern society and his/her adjustment to innovations and new technologies. Those in the older generation using social media to talk with younger ones are seen as persons who continue to learn new things. Abilities and personalities comprise 12 items reflecting characteristics and capabilities that are expected in older persons. People in the older generation are seen as persons with high expertise, logic, credibility, and generosity. On the other hand, worldview and media skills consisting of seven items represent the perceptions that the older generation has a strict view about ways of life and limited skills for new media and technologies.

**Table 6:** Factor Loadings for Older Generation Perceptions

Scale Items	Factor Loading		
	1	2	3
<b>Factor 1: Adaptation to Changes</b> ( $\alpha = .89$ )			
I think the person is up-to-date.	.79	.17	.19
I think the person keeps up with the times	.83	.24	.09
I think the person keeps up with technologies.	.89	.08	.08
I think the person has modern views.	.82	.07	.06
<b>Factor 2: Abilities and Personalities</b> ( $\alpha = .94$ )			
I think the person is highly experienced.	.24	.71	-.11
I think the person is talented.	.26	.74	-.07
I think the person is rational.	.23	.63	-.14
I think the person is respectable.	.21	.76	-.16
I think the person thinks thoroughly.	.13	.70	-.24
I think the person is credible.	-.00	.81	-.16
I think the person is very mature.	-.05	.79	-.20
I think the person is friendly.	.11	.76	.08
I think the person is kind and warm.	.06	.79	.03
I think the person is fun to talk with.	.23	.71	-.12
I think the person is cheerful.	.08	.79	-.12
I think the person concerns for others.	.02	.82	-.21
<b>Factor 3: Worldview and Media Skills</b> ( $\alpha = .91$ )			
I think the person is boring.	.06	-.01	.73
I think the person is conservative.	.14	-.02	.82
I think the person is lagging behind when using new media technologies.	.10	-.13	.85
I think the person is not skillful when using new media technologies.	.08	-.21	.85
I think the person is difficult to understand when using new media technologies.	.14	-.05	.81
I think the person is not skillful when using programs and applications.	.09	-.15	.84
I think the person overshares pictures and information.	-.22	-.09	.61
<b>Mean</b>	<b>5.03</b>	<b>4.90</b>	<b>4.08</b>
<b>SD</b>	<b>1.19</b>	<b>.99</b>	<b>1.39</b>

**Notes:**  $N = 326$ . Means were computed from a 7-point scale ranging from *Strongly disagree* (1) to *Strongly agree* (7) with the perceptions of the older generation.

### Younger Generation Perceptions

Again, all 22 items were computed in principal component analysis with varimax rotation. A factor was retained based on the eigenvalue over 1.0, the Scree test, the factor loadings at .50 of at least three items with no cross loadings on other factors (Taherdoost et al., 2014). Different from what expected, the factor analysis yielded two dimensions of generation perceptions with nine items excluded due to loadings on multiple factors. The remaining 13 items represented two meaningful factors that accounted for 68.01% of the

total variance. Negative characteristics and social media behaviors were incorporated into one construct. Therefore, the new generation perceptions were: (1) interactive abilities ( $\alpha = .93$ ), accounted for 35.49% of the variance and (2) media use and personalities ( $\alpha = .89$ ), accounted for 32.52% of the item variance (see Table 7).

Interactive abilities comprise of six items representing a person's skills to react to and learn new things quickly. Those in the younger generation are viewed as active self-learners with independent minds and fast learning to develop themselves continuously. Media use and personalities consist of seven items on two dimensions: (1) personalities, which refer to characteristics that indicate immature thinking and action and (2) media use, which reflects inappropriate ways of using new media in terms of language and communication skills.

**Table 7:** Factor Loadings for Younger Generation Perceptions

Scale Items	Factor Loading	
	1	2
<b>Factor 1: Interactive Abilities</b> ( $\alpha = .93$ )		
I think the person is able to learn new things quickly.	.83	.04
I think the person thinks and acts fast.	.85	-.15
I think the person thinks and acts in an independent way.	.86	-.19
I think the person has creative thinking.	.88	-.14
I think the person is open and eager to learn.	.92	-.00
I think the person learns new things and technologies for self-development.	.85	-.05
<b>Factor 2: Media Use and Personalities</b> ( $\alpha = .89$ )		
I think the person is immature and thinks carelessly.	-.11	.75
I think the person is nonsensical.	-.00	.67
I think the person lacks experience.	-.22	.81
I think the person is impatient.	-.27	.78
I think the person uses social media inappropriately.	-.04	.77
I think the person uses incorrect language in new media.	.02	.81
I think the person is not skillful when communicating in writing/texting.	.04	.79
<b>Mean</b>	<b>5.24</b>	<b>3.70</b>
<b>SD</b>	<b>1.20</b>	<b>1.25</b>

**Notes:**  $N = 326$ . Means were computed from a 7-point scale ranging from *Strongly disagree* (1) to *Strongly agree* (7) with the perceptions of the younger generation.

Research Question 4 asked whether intergenerational communication via social media influenced a generation's perceptions. Multiple regression analysis was performed between types of social media use for intergenerational communication and perceptions of older and younger generations separately. *LINE* and *Facebook* significantly predicted perceptions of older and younger generations on all factors, with an exception for adaptation to changes ( $R^2 = .00$ ,  $F(2,323) = .23$ ,  $p = .79$ ) (see Table 8).

**Table 8:** Multiple Regression Analysis for Intergenerational Communication via Social Media Predicting Generation Perceptions

Dependent Variable	Intergenerational Communication	
	<i>LINE</i>	<i>Facebook</i>
	<i>B</i>	$\beta$
Older generation perceptions		
Adaptation to changes	.03	-.02
Abilities and personalities	.10*	.11*
Worldview and media skills	-.14*	-.13*
Younger generation perceptions		
Interactive abilities	.02	.15*
Media use and personalities	-.13*	-.11*

**Notes:** \* $p < .05$

Use of *LINE* and *Facebook* in intergenerational interaction slightly influenced perceptions towards the older generation, accounted for 2.0% of the variance in abilities and personalities ( $R^2 = .02$ , adjusted  $R^2 = .02$ ,  $F(2,323) = 3.58$ ,  $p < .05$ ) and 3.0% of the variance in worldview and media skills ( $R^2 = .04$ , adjusted  $R^2 = .03$ ,  $F(2,323) = 5.79$ ,  $p < .01$ ). In other words, use of social media does not affect the way the older generation is perceived as being up-to-date with new things in the society, but rather makes them seen as people with high abilities and admired personalities. Moreover, the negative relationships between *LINE* and *Facebook* with

worldview and media skills imply that the more younger generation use social media talking with older ones, the less negative they perceive those of older age – less boring, less conservative, and less unskillful in new media.

Furthermore, use of *LINE* and *Facebook* for communicating with others in a different generation significantly predicted how older people perceived younger ones; this accounted for 2% of variance in interactive abilities ( $R^2 = .02$ , adjusted  $R^2 = .02$ ,  $F(2,323) = 3.70$ ,  $p < .05$ ); and 2% of variance in media use and personalities ( $R^2 = .03$ , adjusted  $R^2 = .02$ ,  $F(2,323) = 4.75$ ,  $p < .01$ ). The younger generation is perceived as people who are fast learners with abilities to learn, think, and act quickly. Again, the negative relationships between *LINE* and *Facebook* with media use and personalities suggest that higher use of social media tends to lower negative perceptions towards the younger generation for being immature, illogical, and improper in media use.

In short, use of social media in intergenerational communication leads to both positive and negative perceptions towards those in a different generation. They are viewed positively for abilities, but negatively for media behavior.

#### 4. DISCUSSION AND SUGGESTIONS

This study served two purposes and answered four research questions to explore whether social media use to communicate with people of different generation affected age stereotypes and generation perceptions. Overall, the results showed that using social media, especially *LINE* and *Facebook*, made people satisfied with communication across generations for all age groups, but social media use for intergenerational communication influenced age stereotypes towards middle age only. Moreover, how younger and older generations perceived each other was influenced by interactions via social media. They tend to see each other positively in terms of abilities and personalities, but negatively in media behaviors and skills. Significantly, those negative perceptions decreased when the use of social media was increased.

##### Theoretical Implications

Theoretically, the communication predicament resulting from age stereotyping is possibly decreased by intervention. This study suggests that social media interaction with the older generation seems to serve as an effective intervention to change age stereotypes towards older persons. The content analysis revealed that people in the older generation who used social media to interact with younger ones were viewed as keeping up with the times and technologies. Consistently, the statistical analyses indicated that stereotyped perceptions of the older generation related to media skills were minimized when they interacted more with younger people via social media. Although people from different generations perceived each other as having improper social media behaviors/skills, this generation gap could be reduced through online interactions. One of the key motivators for older people to use social media was to stay in touch with their younger family members (Griniute, n.d.). Thus, it is likely that their willingness to engage in online intergenerational communication could increase the interactions and bridge the gap between the generations. Future studies may look more closely at how motives are related to social media use, generational perceptions, and relational satisfaction in intergenerational communication.

Moreover, other theoretical frameworks should be considered to expand the study of intergenerational communication and social media. The current study uses a theoretical framework – the communication predicament model of aging – that has a strong intergroup and moderate interpersonal view. Additional interpersonal communication theories could provide a framework that shifts a focus from intergroup boundaries and stereotypes to relationship maintenance and satisfaction. Certain types of relationship such as grandparent-grandchildren and older-younger coworkers call for further investigation to understand intergenerational communication in a more specific context. According to Anderson et al. (2005), younger people had positive stereotype towards older acquaintances more than grandparents. Also, Barker (2007) showed that communication between grandparents and grandchildren tended to be less problematic when grandchildren perceived grandparents' motives as to be role models rather than to gain control. Thus, other factors, such as types of relationship and motives, affect communication across generations and should be studied further through the lens of interpersonal communication. Additional theories that may incorporate interpersonal analysis in the study of intergenerational communication through social media are family patterns communication theory, expectancy violations theory, communication privacy management theory, social presence theory, and media richness theory (Bernhold and Giles, 2017).

### Social Media Behaviors and Generational Perceptions

Furthermore, owing to interactions via social media, younger and older generations admired each other more for their abilities and personalities. Older people viewed younger ones as fast learners who were very responsive to, and interactive with, new things around them for self-development. Younger persons respected the older generation for their experience, credibility, and generosity. However, the statistical analyses yield results that raise further questions. Firstly, use of *LINE* and *Facebook* predicted all generational perceptions, excepting for adaptation to changes. Perhaps, as communication technologies have been advanced continuously, it is common to perceive that people of all ages, including the older generation, need to adapt to and learn new things around them regardless of their interactions via those new media technologies and innovations. In other words, this perception seems to be a general worldview towards people in current society. Secondly, another implication lies in perceived social media behaviors. Older and younger generations viewed each other as having improper media behaviors. Older persons considered younger ones lacking language and writing skills: they used incorrect words and had difficulties in written language. Then, some questions arise: Does texting cause language decline? Is texting a new form of communication? Many believe that texting lowers linguistic literacy of young adults, whereas some see texting as a way to expand the linguistic repertoire with new invention of words, slang terms, abbreviations, and cyber language (De Jonge and Kemp, 2012; Onanian, 2008; Plester et al., 2008). On the other hand, younger persons see the older generation as lacking technological skills and not being keen on using new media technologies. Consistent with previous research, young adults estimated success in helping others use social media to be lower when age increased, especially among the 60-year-old learners (Ginsburg et al., 2016). The next question for future research is whether this perception is age stereotyping or a reflection of needs for practical programs accommodating the diversity of media users.

Additionally, these findings provide guidelines to a better use of social media for intergenerational interactions in business context. This study shows that the barrier to effective intergenerational communication tends to come from negative perceptions towards communicative behaviors of another generation. Consistently, previous research found that older generation preferred face-to-face communication when interacting with younger colleagues due to the perceptions that technology-based communication was impersonal, vulnerable to digital trail, and improper for certain situations (Mehra and Nickerson, 2019; Singh, 2014). However, older employees were aware that technology-based channels were an efficient medium, especially with shortage of time, and made younger generation more responsive. On the other hand, younger generation in Thailand and the United States viewed communication with age-outgroups more problematic in the workplace (McCann and Giles, 2006). To apply the findings to intergenerational communication in organizations, this study suggests that companies may consider “intergenerational mentoring” to facilitate the sharing of knowledge and skills between younger and older generations. Younger ones could transfer e-language culture in which emoticons, abbreviations, and new terms are mastered in social media while older colleagues could share their experiences in a way that makes both sides feel less formal and more personal through the use of shared language. Perhaps, the perceptual gap could be reduced and leads to a more satisfying and effective intergenerational communication.

### Future Research Directions

In Research Question 1, time of social media use for intergenerational communication predicted age stereotypes towards middle age only, whereas, in Research Question 2, satisfaction in communication across generations was a significant predictor of age stereotypes towards all age groups. These findings imply that time spent on talking with someone with an age gap of 10 years and over is not strong enough to influence perceptions of all age categories, when compared to the quality of talk, which is overall satisfaction at the end. Possibly, the talk has to pass through an evaluation of whether it is satisfying, then age perceptions could be affected. A satisfying short interaction would be better to trigger changes in age stereotypes than a dissatisfying long conversation. Thus, future studies may explore what factors could improve the quality of intergenerational communication. Perhaps those factors could serve as a direct intervention to alter age stereotypes. As the communication technology advancement forces people to meet less but use devices more, older persons are pushed further to feel connected with other generations. With age stereotypes viewing older persons incompetent in communication and technologies, another question arises, “How do we communicate better when the global society is becoming aged?” This concern calls for multidisciplinary research in communication, technology, psychology, and medical healthcare to facilitate the most desirable intergenerational connection.

Furthermore, time spent on social media for intergenerational communication depends on types of relationship. The findings provide an implication that people spend more time interacting with someone in close relationships. The average minutes of social media use per day considerably increased from less than an hour in Phase 1, in which 60% of the participants spent 74 minutes on *LINE* and 21 minutes on *Facebook*

communicating with colleagues, to between 2-3 hours in Phase 2, where 84% of the participants spent 129 minutes on *LINE* and 154 minutes on *Facebook* talking with family members. Also, the majority of participants indicated their use of social media to interact across generations with family members, friends, colleagues, and acquaintances, but less use with their romantic partners. This might be due to the typical age gap in couples that tends to be less than 10 years. On the other hand, social media might not be a common channel for couple communication, or it could negatively affect their relationships. *Facebook* has been described as a cause of negative impact on romantic relationships among college students (Fox et al., 2014). Future research may focus on how social media is used in certain relationships such as between parents-children, romantic partners, or with colleagues to understand intergenerational communication better.

Lastly, other recruitment methods are recommended. Perhaps recruitment of older adults through government institutions, older adults associations, and non-profit organizations such as *Thai Health Promotion Foundation* could ensure a higher proportion of older adult participants. Also, future studies may apply other research methods such as interview, focus group, and experiment to gain in-depth information about intergenerational communication via social media. These methods could provide a better understanding of difficulties during the interactions between people of different generations and solutions to those problems.

## REFERENCES

- Anderson, K., Harwood, J. and Hummert, M. L. (2005). The grandparent-grandchild relationship: implications for models of intergenerational communication. *Human Communication Research* 31(2): 268-294.
- Barker, V. (2007). Young adults' reactions to grandparent painful self-disclosure: the influence of grandparent sex and overall motivations for communication. *International Journal of Aging and Human Development* 64: 195-215.
- Bernhold, Q. and Giles, H. (2017). Grandparent-Grandchild Communication: a review of theoretically informed research. *Journal of Intergenerational Relationships* 15(4): 368-388.
- Chen, C. Y., Joyce, N., Harwood, J. and Xiang, J. (2017). Stereotype reduction through humor and accommodation during imagined communication with older adults. *Communication Monographs* 84(1): 94-109.
- De Jonge, S. and Kemp, N. (2012). Text-message abbreviations and language skills in high school and university student. *Journal of Research in Reading* 35(1): 49-68.
- Electronic Transactions Development Agency (2017). *Thailand Internet Users' Profile 2017*. [Online URL: <https://www.etda.or.th/topics/thailand-internet-user-profile-2017.html>] accessed on January 14, 2020.
- Fox J., Osborn J. L. and Warber, K. M. (2014). Relational dialectics and social networking sites: the role of Facebook in romantic relationship escalation, maintenance, conflict, and dissolution. *Computers in Human Behavior* 35: 527-534.
- Frey, L. R. and Botan, C. H. and Kreps, G. L. (2000). *Investigating Communication: An Introduction to Research Methods*. 2<sup>nd</sup> ed. Massachusetts: Allyn & Bacon.
- Giles, H. and Dorjee, T. (2004). Communicative climates and prospects in cross-cultural gerontology. *Journal of Cross-Cultural Gerontology* 19(4): 261-274.
- Giles, H., Khajavy, H. and Choi, C. W. (2012). Intergenerational communication satisfaction and age boundaries: comparative Middle Eastern data. *Journal of Cross-Cultural Gerontology* 27: 357-371.
- Giles, H., Ryan, E. B. and Anas, A. P. (2008). Perceptions of intergenerational communication by young, middle-aged, and older Canadians. *Canadian Journal of Behavioural Science* 40(1): 21-30.
- Ginsburg, H. J., Cameron, R., Mendez, R. V. and Westhoff, M. (2016). Helping others use social media: age stereotypes when estimating learner's success. *Psychology, Society, & Education* 8(1): 1-12.
- Griniute, I. (n.d.). *Social Media and Older People: Promising Future?* [Online URL: <https://all-digital.org/social-media-older-people-promising-future/>] accessed on September 29, 2020.
- Harley, D. and Fitzpatrick, G. (2009). YouTube and intergenerational communication: the case of Geriatric1927. *Universal Access in the Information Society* 8: 5-20.
- Harwood, J. (2000). Communication media use in the grandparent-grandchild relationship. *Journal of Communication* 50(4): 56-78.
- Hummert, M. L., Shaner, J. L., Garstka, T. A. and Henry, C. (1998). Communication with older adults: the influence of age stereotypes, context, and communicator age. *Human Communication Research* 25(1): 124-151.
- McCann, R. M. and Giles, H. (2006). Communication with people of different ages in the workplace: Thai and American data. *Human Communication Research* 32(1): 74-108.

- McCann, R. M., Dailey, R. M., Giles, H. and Ota, H. (2005). Beliefs about intergenerational communication across the lifespan: middle age and the roles of age stereotyping and respect norms. *Communication Studies* 56: 293-311.
- Mehra, P. and Nickerson, C. (2019). Organizational communication and job satisfaction: what role do generational differences play? *International Journal of Organizational Analysis* 27(3): 524-547.
- National Statistical Office. (2018). *Population from Registration Record by Age Group (Child Age, Working Age, Old Age) And Sex Year: 2009-2018*. [Online URL: <http://statbbi.nso.go.th/staticreport/page/sector/en/01.aspx>] accessed on January 14, 2020.
- O'Connor, S. (2014). *World Will Have 13 'Super-Aged' Nations by 2020*. *Financial Times*. [Online URL: <https://www.ft.com/content/f356f8a0-1d8c-11e4-8f0c-00144feabdc0>] accessed on January 14, 2020.
- Onanian, A. (2008). *Texting: The New Form of Communication; Actually, the New Form of Everything*. *Artifacts Journal*, 1. [Online URL: <https://artifactsjournal.missouri.edu/2008/07/texting-the-new-form-of-communication-actually-the-new-form-of-everything/>] accessed on December 18, 2019.
- Plester, B., Wood, C. and Bell, V. (2008). Txt msg n school literacy: Does texting and knowledge of text abbreviations adversely affect children's literacy attainment? *Literacy* 42(3): 137-144.
- Ryan, E. B., Giles, H., Bartolucci, G. and Henwood, K. (1986). Psycholinguistic and social psychological components of communication by and with the elderly. *Language & Communication* 6: 1-24.
- Scott, W. A. (1955). Reliability of content analysis: the case for nominal scale coding. *Public Opinion Quarterly* 19: 321-325.
- Singh, V. (2014). "We are not phobic but selective": the older generation's attitude towards using technology in workplace communications. *Development and Learning in Organizations* 28(4): 18-20.
- Taherdoost, H. Sahibuddin, S. and Jalaliyoon, N. (2014). *Exploratory Factor Analysis; Concepts and theory*. *Advances in Applied and Pure Mathematics*. [Online URL: <http://www.wseas.us/e-library/conferences/2014/Gdansk/MATH/MATH-49.pdf>] accessed on September 22, 2019.
- Thailand Birth Rate 1950-2019. (n.d.). *Thailand Birth Rate 1950-2019*. [Online URL: <https://www.macrotrends.net/countries/THA/thailand/birth-rate>] accessed on January 17, 2020.
- Thairath (2018). *Next Three Years for Thailand to Become Aged Society*. Thairath Newspaper. [Online URL: <https://www.thairath.co.th/content/1253407>] accessed on July 1, 2018.
- United Nations, Department of Economic and Social Affairs, Population Division. (2015). *World Population Ageing 2015*. [Online URL: [http://www.un.org/en/development/desa/population/publications/pdf/ageing/WPA2015\\_Report.pdf](http://www.un.org/en/development/desa/population/publications/pdf/ageing/WPA2015_Report.pdf)] accessed on October 6, 2019.
- United Nations, Department of Economic and Social Affairs, Population Division. (2017). *World Population Ageing 2017 - Highlights (ST/ESA/SERA/397)*. [Online URL: [http://www.un.org/en/development/desa/population/publications/pdf/ageing/WPA2017\\_Highlights.pdf](http://www.un.org/en/development/desa/population/publications/pdf/ageing/WPA2017_Highlights.pdf)] accessed on October 6, 2019.
- United Nations, Department of Economic and Social Affairs, Population Division. (2019). *World Population Prospects 2019 - Highlights*. [Online URL: [https://population.un.org/wpp/Publications/Files/WPP2019\\_10KeyFindings.pdf](https://population.un.org/wpp/Publications/Files/WPP2019_10KeyFindings.pdf)] accessed on October 6, 2019.
- Whitley, B. E., Jr. and Kite, M. E. (2006). *The Psychology of Prejudice and Discrimination*. California: Thomson Wadsworth.
- Williams, K., Kemper, S. and Hummert, M. L. (2003). Improving nursing home communication: an intervention to reduce elder speak. *The Gerontologist* 23(2): 242-247.
- Williams, K. N. (2006). Improving outcomes of nursing home interactions. *Research in Nursing and Health* 29(2): 121-133.