

Takemura, Tomoko

**Conference Paper**

## Media Repertoires of Japanese Old Users in the Digital Media Environment

30th European Conference of the International Telecommunications Society (ITS): "Towards a Connected and Automated Society", Helsinki, Finland, 16th-19th June, 2019

**Provided in Cooperation with:**

International Telecommunications Society (ITS)

*Suggested Citation:* Takemura, Tomoko (2019) : Media Repertoires of Japanese Old Users in the Digital Media Environment, 30th European Conference of the International Telecommunications Society (ITS): "Towards a Connected and Automated Society", Helsinki, Finland, 16th-19th June, 2019, International Telecommunications Society (ITS), Calgary

This Version is available at:

<https://hdl.handle.net/10419/205217>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*

Media Repertoires of Japanese Old Users in the Digital Media Environment

Tomoko Takemura

Ritsumeikan University

Author Note

Tomoko Takemura, College of Image Arts and Sciences, Ritsumeikan University.

Correspondence concerning this article should be addressed to Tomoko

Takemura, College of Image Arts and Sciences, Ritsumeikan University,

56-1, Tojiin-Kitamachi, Kita-ku, Kyoto 603-8577, JAPAN.

E-mail: [t-take@fc.ritsumei.ac.jp](mailto:t-take@fc.ritsumei.ac.jp)

### Abstract

The purpose of this study is to explore media repertoires emerging from Japanese old media users and factors which can explain the use of different media repertoires to understand a new digital divide called “gray divide,” the inequality in the access to and use of ICT within senior citizen sector. Data of this study was based on the Public Opinion survey “The Japanese and Television 2015” conducted by NHK Broadcasting Culture Research Institute. Gender, education, and age were the most powerful predictors of media use repertoires. This finding advances our understanding of the relationship between media use repertoires and influential factors.

### Media Repertoires of Japanese Old Users in the Digital Media Environment

Along with the development of the ICT industry, the use of digital media has expanded. Since the percentage of Internet users reached 80 percent, it has maintained over it (Ministry of Internal Affairs and Communications, 2018). The percentage of Internet users has increased among people aged 60 years with advancing age of users. People in their 40s who started using the Internet at the end of the 1990s have reached their 60s. Today older people are not necessarily inferior to younger people in access to digital media today because the Internet users is getting older. Dentsu (2011) pointed out the existence of “digital seniors” who used the Internet actively early on in 2011.

Many studies have reported that older people less frequently use digital media and have less knowledge about them than younger people. Age is definitely one of the main factors which affect digital media uses. The development of digital media led to the phenomena of “digital divide”, the inequality in the access to and use of ICT. There are a lot of reasons, which have caused the divide, including education, income, gender, location, skills, and attitude. Age has been studied as one of the influential factors of digital divide along with other demographic, sociological, and psychological factors.

Recently another divide is pointed out in addition to digital divide in terms of digital media. It is “gray divide”. Gray divide is the inequality in the access to and use of ICT within senior citizen sector. Previous studies saw old people as one cluster of people who did not access digital media compared with younger people, so few studies dealt with media repertoires, a collection of media sources that people regularly use, among old people. On the other hand, researchers studying gray divide insist that we should observe differences of media use among old people, because the gap between people who often use digital media and people who rarely use them is getting wider.

Factors affecting media choice can basically divided into two distinct frameworks, individual factors and structural factors. Individual factors include individual demographic characteristics, preferences, need or psychological status, while structural factors include audience availability, access to media, media infrastructures and programming strategies. These factors have been used to predict media use behavior.

Considering a continued growth in the elderly population, development of digital media, and increase of the gray divide, it is crucial to understand how old people use digital media in the ICT society. The purpose of this study is to explore media repertoires emerging

from Japanese old media users and factors which can explain the use of different media repertoires.

Based on the previous research, the following research questions were posited:

RQ1: What types of media repertoires are identified among old people?

RQ2: What are the characteristics of the old users linked to each type of media repertoires?

RQ3: Which individual factors and structural factors will affect the use of different media repertoire among old people?

## **Method**

### **Data Collection**

Data for this study were drawn from the Public Opinion survey “The Japanese and Television 2015” conducted by NHK Broadcasting Culture Research Institute in 2015. The sample was selected from the Basic Resident Register, a comprehensive list of Japanese citizens, based on the two-stage stratified random sampling method. A total of 2442 questionnaires were collected, yielding a response rate of 67.8 %. In this study, the data of 926 respondents aged over 60 years and above were analyzed.

### **Measures**

**User characteristics.** Regarding genders, almost half of the sample is male (49.0 %), and the rest is female (51.0 %). The average age is 70.63 years old (s.d. =7.304), and the maximum is 98 years old. About education, 30.3 % of the sample graduated a junior high school, 44.3 % of it had a high school degree, 9.4 % of it hold a technical college or community college degree, and 14.3 % of it had an undergraduate or graduate degree, and the rest did not answer. There was considerable diversity in the size of their living cities.

**Media Use.** Media use variables were collected through three questions. The first question asks how often they use (1) TV (except for recorded), (2) recorded TV programs, (3) radio (except for recorded), (4) the Internet (except for email), (5) DVDs or videos, (6) CDs, (7) newspapers, (8) magazines, (9) books, and (10) comics. The second question asks how often they watch (11) online videos. The third question asks how often they use (12) SNS (Social Networking Services). The respondents answered on a six-point scale where 1 represented 'daily', 2 '3 or 4 days a week', 3 '1 or 2 days a week', 4 '1 or 2 days a month', or 5 'several times a year', and 6 'never'. They were negatively coded, the coding for these items was reversed (i.e. 6 represented 'daily').

**Individual and structural factors of media choice.** Age, gender, and education were used as individual factors of media choices. For RQ2, a five-year interval variable of age was created (i.e. 60-64, 64-69, 70-74, 75-79, 80-84, 85-89, 90-94, 95-99). To analyze RQ2 and RQ3, female dummy was made (i.e. female = 1, male = 0). Structural factors contained audience availability (i.e. how many hours a respondent can use by themselves a day) and region (i.e. whether a respondent lives in Tokyo or Osaka, the two major metropolitan areas of Japan). In terms of audience availability, a categorical variable was converted to a numerical variable. “Rarely” was converted to “0”, “Less than 30 minutes” to “0.5”, “1 hour” to “1”, and so on.

### **Analytical Procedure**

To answer RQ1, 12 media use items were analyzed with principal factor analysis with varimax rotation. To answer RQ2, a user profile was created with adding each respondent’s factor score on each media repertoire dimension as a new variable. To answer RQ2, this study follows the method Kim (2014) used. Respondents whose factor score in a given factor fell in to the upper quartile of it were defined as “representative” users of that media repertoire. By analyzing differences of characteristics among representative users of each media repertoire, it



will become clear what the characteristics of the old users are linked to each type of media repertoires. To answer RQ3, regression analysis was conducted to predict how individual and structural factors affected on factor scores of media repertoires.

### **Results**

Table 1 shows the results of descriptive statistics on variables which was used to answer RQ1. The data of 862 respondents, who answered all of the questions on descriptive statistics for media use, was analyzed. The means TV (3.59) and newspapers (3.39), measured on a scale from one to six, are higher than the rest of the variables.

Table 1

*Descriptive Statistics for Media Use (N=862)*

<u>Variables</u>	<u>M</u>	<u>SD</u>
TV	3.59	1.104
Recorded TV programs	1.05	1.387
Radio	1.46	1.691
The Internet	0.89	1.473
DVDs or videos	0.44	0.843
CDs	0.66	1.129
Newspapers	3.39	1.354
Magazines	1.01	1.112
Books	1.25	1.333
Comics	0.16	0.566
Online videos	0.49	1.143
SNS	0.29	1.005

*Notes.* SD: standard deviation

Table 2 provides results for RQ1 asking what types of media repertoires are identified among media platforms and content types. 806 respondents who answered all the questions regarding 12 media use were analyzed. A principal factor analysis with varimax rotation was conducted using 12 media use items.

Table 2

*Factor Loadings for Principal Factor Analysis with Varimax Rotation of Media Use Scales*

Scale	Online media	Print media	Non-real-time Media	Major traditional media
Online videos	<b>.821</b>	.088	.097	-.002
The Internet	<b>.773</b>	.123	.182	.128
SNS	<b>.443</b>	.200	.141	-.102
Magazines	.059	<b>.692</b>	.070	.125
Books	.144	<b>.594</b>	.144	.162
Comics	.178	<b>.360</b>	.143	-.126
Radio	.045	.292	.005	.147
DVDs or video	.122	.114	<b>.842</b>	.066
Recorded TV programs	.171	.025	<b>.410</b>	.266
CDs	.150	.246	<b>.338</b>	-.032
Newspapers	-.020	.200	.021	<b>.491</b>
TV	-.006	.026	.073	<b>.435</b>
Engenevalues	1.593	1.225	1.106	.613
% of Variance	13.278	10.209	9.220	5.105
Cumulative % of Variance	13.278	23.487	32.708	37.813

*Notes.* Factor loadings > .30 are in boldface.

The result suggested a four-factor solution, with 37.813% of the total variance explained. The first factor included online videos, the Internet, and SNS. This factor was labeled as “Online media,” which explained 13.278% of the total variance. The second factor,

which contained magazines, books, and comics, was labeled as “print media.” This factor explained 10.209% of the total variance. The third factor, which consisted of DVDs or videos, recorded TV programs and CD, was named as “Non-real-time media.” It explained 9.220% of the total variance. The fourth factor, which was made up of newspapers and TV, was labeled as “major traditional media.” It explained 5.105% of the total variance. All factors had a modest to high level of reliability (Cronbach’s alpha is .739 for factor 1, .556 for factor 2, .569 for factor 3, and .361 for factor 4).

Table 3 reports the user characteristics associated with the representative media users of each media repertoire (RQ2) and all users above 60 years old. Following Kim (2014), respondents whose factor score in a given factor fell in to the upper quartile were defined as “representative” users of that media repertoire. This research question analyzed differences and similarities of characteristics among representative users of each media repertoire. In terms of gender, compared with a percentage of male (49.0%), more male users use online media (67.7%) and non-real-time media (61.2%). Regarding age, people aged 60-65 years old (43.8%) and 65-79 years old (33.8%) use online media actively. Users aged 60-65 years old (33.3%) and 65-79 years old (31.8%) also use non-real-time media more than older users. About education, users

who have bachelor's or higher degree use all media repertoires more frequently than the rest.

Especially people who have bachelor's or higher degree use online media more actively.

Table 3

*Individual Characteristics as a Percentage of the Representative Users*

Characteristic	ALL ( <i>n</i> = 926)	Online media ( <i>n</i> = 202)	Print media ( <i>n</i> = 202)	Non-real- time media ( <i>n</i> = 202)	Major traditional media ( <i>n</i> = 202)
Gender					-
Male	49.0	67.7	50.7	61.2	54.2
Female	51.0	32.3	49.3	38.8	45.8
Age					
60-64	24.1	43.8	26.9	33.3	31.8
65-69	24.5	33.8	27.9	31.8	24.4
70-74	22.9	14.4	24.4	22.4	24.4
75-79	16.7	6.5	15.4	9.0	13.9
80-84	7.7	1.0	4.5	3.0	4.5
85-89	2.9	.0	.5	.0	1.0
90-94	.9	.0	.0	.5	.0
95-99	.3	.5	.5	.0	.0
Education					
Junior High school	30.3	9.5	16.9	17.4	13.9
High school	44.3	41.8	45.3	45.3	44.8
Some college/ vocational training	9.4	10.4	10.0	13.4	14.9
Bachelor's or higher	14.3	37.8	26.4	23.4	25.9
No Answer	1.7	1.0	1.5	.5	.5

Table 4 provides the date of individual and structural variables predicting each media repertoire (RQ3).