

# Research on the Age-Friendly City of Senior Citizens in Gimhae, South Korea

## 1 Purpose of the Research

The current study investigates the needs of the seniors to establish welfare policies and to improve welfare services for the seniors in Gimhae-city. The scope of the survey incorporates eight areas of the WHO guidelines of age-friendly city. In addition, older adults' general characteristics including living conditions, health status and activities of daily living in Gimhae-city are identified and utilized as a basic data to promote the development of welfare policies and services for the seniors in Gimhae-city.

## 2 Research Design and Methods

### 1. Sample Design

- Study participants : Seniors in Gimhae-city aged 65 and above
- Sampling method: Random sampling
- Study contents
  - Survey on the opinions of 8 fields of WHO age-friendly city guidelines
  - Survey on the living conditions of Gimhae-city
  - General information (health, daily activities etc.)

### 2. Data Collection

- Methods of data collection : A structured survey designed for the purpose of the study

- Data collection : One-on-one interview

[Table 1] Study Target Information

Population	Citizens of 65 years or older in Gimhae-city
Area	Gimhae-City
Data collection	Face to face interview
Period	May 11 <sup>th</sup> - May 20 <sup>th</sup> ,2022
Survey Criteria	<ul style="list-style-type: none"> <li>- Opinions of 8 fields of WHO age-friendly city guidelines</li> <li>- Living conditions of Gimhae-city</li> <li>- General information including health status and activities of daily living s</li> </ul>

- Data were collected from May 11<sup>th</sup>, 2022 to May 20<sup>th</sup> , 2022
- The survey was conducted according to the following procedures.

[Table 2] Survey Procedures

Steps	Contents
Build a research team	<ul style="list-style-type: none"> <li>- Build a research team with supervisor and interviewer : Staffing trained interviewers with survey experience</li> <li>- Interviewer training : Systematic training on the study purpose and structured questionnaire</li> <li>- Allocate interviewers to each district by sampling frame</li> </ul>
Survey	<ul style="list-style-type: none"> <li>- Conduct field work through survey methods</li> </ul>
Data handling	<ul style="list-style-type: none"> <li>- Data coding and cleaning</li> <li>- Manipulating the missing data</li> </ul>

## 4. Study sample

- Study participants were citizens in Gimhae-city, 65 years or older
- The final sample size for the analyses was 300 seniors living in Gimhae-city, after discarding unnecessary information and incomplete questionnaires

## 4 Results

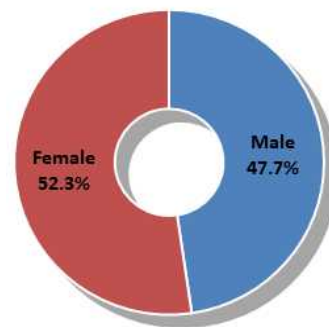
### 1. Sample characteristics

#### 1) Gender

- Out of the total participants, 52.3% (n=157) were females, while 47.7% (n=143) were males.

[Table 3] Gender distribution

Category	Frequency	Percentage (%)
Male	143	47.7
Female	157	52.3
Total	300	100.0



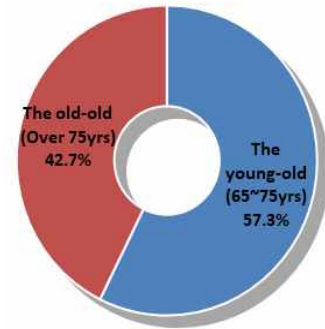
#### 2) Age

- 57.3% (n=172) respondents answered to belong to the young-old (65–75 years

old), and 42.7% (n=128) reported to be the old-old including the oldest-old (over 75 years old)

[Table 4] Age distribution

Category	Frequency	Percentage (%)
The young-old (65~75yrs)	172	57.3
The old-old (Over 75yrs)	128	42.7
Total	300	100.0



### 3) Education level

- About 33% (n=99) responded ‘High school dropout’ and ‘High school graduate’ with the highest rate, followed by 26.7% (n=80) of ‘Middle school dropout’ or ‘Middle school graduate.’

[Table 5] Education level

Category	Frequency	Percentage (%)
No education (Illiterate)	5	1.7
No education (Deciphering letters)	9	3.0
Elementary school dropout or graduate	67	22.3
Middle school dropout or graduate	80	26.7
High school dropout or graduate	99	33.0
College dropout or graduate	40	13.3
Total	300	100.0

### 4) Marital status

- Among the respondents, 55.7% (n=167) answered to be ‘married’ , and 34.7% (n=104) responded ‘bereaved’ , followed by ‘divorced or separated’ with 9.0% (n=27) and ‘never married’ with 0.7% (n=2).

[Table 6] Marital status

Category	Frequency	Percentage (%)
Married	167	55.7
Bereaved	104	34.7
Divorced or separated	27	9.0
Never married	2	0.7
Total	300	100.0

## 5) Living arrangement

- Out of the total respondents, 50.3% (n=151) and 36.3% (n=109) consisted of ‘single senior household (living with current spouse or living alone)’ , followed by ‘living with children without spouse’ (7.7%, n=23), ‘living with spouse and children’ (4.7%, n=14), and ‘others’ (1.0%, n=3).
- These results indicate that 86.6% of older adults has high tendency of living with only two aging-couples or living alone.
- When older adults were living along, the average years living alone was reported 15.6 years.

[Table 7] Living arrangement

Category	Frequency	Percentage(%)
Living alone	109	36.3
Living with current spouse only	151	50.3
Living with spouse and children	14	4.7
Living with children without spouse	23	7.7
Others	3	1.0
Total	300	100.0

## 6) Health status

- Regarding self-rated health status of older adults 36.0% (n=108) responded 'very good' , followed by 32.0% (n=96) 'good' , 20.0% (n=60) 'fair' , 7.7% (n=23) 'excellent' , and 4.3% (n=13) 'poor.'
- While 24.3% reported to be 'poor health' (poor & fair), 43.7% reported to be 'healthy' (excellent & very good), indicating that health status of the participants are rated as overall good.

[Table 8] Self-rated health status

Category	Frequency	Percentage(%)
poor	13	4.3
fair	60	20.0
good	96	32.0
very good	108	36.0
excellent	23	7.7
Total	300	100.0

## 7) Residential type

- For the type of housing seniors live in, 61.0% (n=183) responded ‘Apartment/officetel (dual-purpose buildings used for commercial and residential purposes’ , followed by ‘Personal house’ (26.7%, n=80), ‘Multi complex house’ (11.3%, n=34), ‘Non-residential space within the commercial purposes’ (0.7%, n=2), and ‘Others’ (0.3%, n=1).

[Table 9] Residential type

Category	Frequency	Percentage(%)
Personal house	80	26.7
Multi complex house	34	11.3
Apartment/officetel	183	61.0
Non-residential space	2	0.7
Small (single) room in rental flat	0	0.0
Senior living facility	0	0.0
Others	1	0.3
Total	300	100.0

## 8) Home ownership

- For home ownership, 73.7% (n=221) responded ‘sole ownership’ , followed by ‘lump-sum housing lease (Jeonse)’ , ‘monthly rent with deposit’ (4.3%, n=13), ‘others’ (4.3%, n=13), ‘monthly rent’ (2.0%, n=6), ‘free’ (2.0%, n=6), and ‘monthly rent without deposit’ (0.3%, n=1).

[Table 10] Home ownership

Category	Frequency	Percentage(%)
sole ownership	221	73.7
lump-sum housing lease (Jeonse)	40	13.3
monthly rent with deposit	13	4.3
monthly rent without deposit	1	0.3
monthly rent	6	2.0
free	6	2.0
others	13	4.3
Total	300	100.0

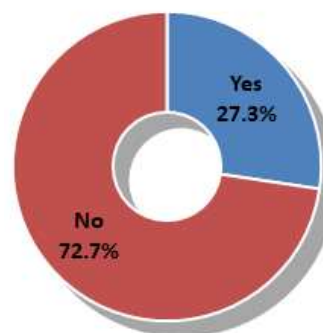
## 2. Economic status

### 1) Employment status

- To the current employment status, 72.7% (n=218) responded ‘no, currently not working’, whereas 27.3% (n=82) responded ‘yes, currently working.’

[Table 11] Employment status

Category	Frequency	Percentage(%)
Yes, currently working	82	27.3
No, currently not working	218	72.7
Total	300	100.0



### 2) Type of employment



- For participants who responded ‘yes’ to the employment status question, they were asked about the type of employment. 78.0% (n=64) responded ‘senior employment project’, followed by ‘agriculture, forestry and fishing industry’ (8.5%, n=7), ‘sales and service’ (3.7%, n=3), ‘simple labor, production, technician’ (2.4%, n=2), and ‘professional’ and ‘self-employment’ with 1.2% (n=1), respectively.
- The average working days and working hours per week reported were 3.5 days/week and 10.9 hours/week.

[Table 12] Type of employment

Category	Frequency	Percentage(%)
Professional	1	1.2
Management	0	0.0
Office clerk	0	0.0
Professional technician	0	0.0
Sales and service	3	3.7
Simple labor, production, technician	2	2.4
Self-employment	1	1.2
Senior employment project	64	78.0
Agriculture, forestry and fishing industry	7	8.5
Others	4	4.9
Total	82	100.0
Average working days per week	3.5	
Average hours working per week	10.9	

### 3) Willingness to work

- (For unemployed) On the question asking whether you would like to engage in economic activities if an opportunity is given, 48.2% (n=105) responded

‘fairly yes’ , followed by ‘no’ (36.7%, n=80), and ‘yes, willing to work’ (15.1%, n=33).

- In general, 63.3% (n=138) of participants responded ‘yes’ (fairly yes & willing to work), while 36.7% answered ‘no’ , indicating that more seniors are willing to engage in economic activities.

[Table 13] Willingness to work

Category	Frequency	Percentage(%)
No	80	36.7
Fairly yes	105	48.2
Yes, willing to work	33	15.1
Total	218	100.0

#### 4) Subjective economic level

- On the question asking participant’ s subjective economic status, out of ‘high, mid-high, middle, mid-low, and low’ , 43.0% (n=129) responded ‘middle’ , followed by 27.3% (n=82) middle-low, 23.0% (n=69) low, 5.7% (n=17) mid-high, and 1.0% (n=3) high. In general, 50.3% (n=151) of the participants perceive themselves living in the lower economic status. Since the economic level affects the quality of life of seniors and life satisfaction in the future, financial support for seniors in some degree is needed.

[Table 14] Subjective economic level

Category	Frequency	Percentage(%)
Low	69	23.0
Mid-low	82	27.3
Middle	129	43.0
Mid-high	17	5.7
High	3	1.0
Total	300	100.0

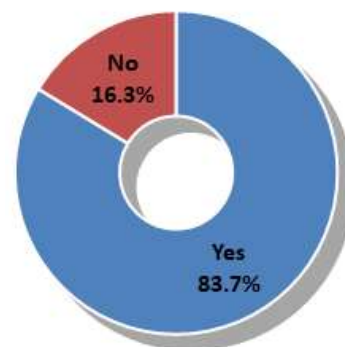
### 3. Activities of daily living

#### 1) Physical exercise

- In response to doing some daily exercise to maintain health, 83.7% (n=251) responded 'yes', while 16.3% (n=49) responded 'no.' Regardless of gender, age, and the region, most of the participants answered that they are exercising at some level.

[Table 15] Physical exercise

Category	Frequency	Percentage(%)
Yes	251	83.7
No	49	16.3
Total	300	100.0

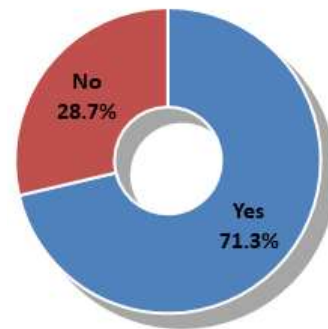


## 2) Nutrition management

- For the question asking whether the participant is managing diet for their health, 71.3% (n=214) answered ‘yes’ , while 28.7% (n=86) answered ‘no’ , indicating that the majority of participants are paying attention to their own health and diet.

[Table 16] Nutrition management

Category	Frequency	Percentage(%)
Yes	214	71.3
No	86	28.7
Total	300	100.0

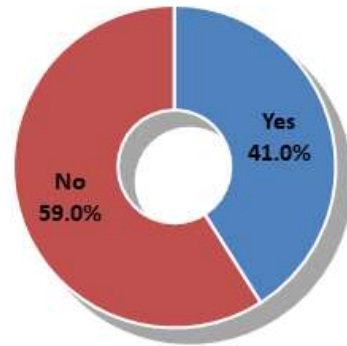


## 3) Participation in lifelong education programs

- For the participation in lifelong education programs during last year, 59.0% (n=177) answered ‘no’ and 41.0% (n=123) ‘yes’ , in that more than half of the participants did not have an opportunity for lifelong education.

[Table 17] Participation in Lifelong Education Programs

Category	Frequency	Percentage(%)
Yes	123	41.0
No	177	59.0
Total	300	100.0



#### 4) Agencies of lifelong education programs

- For those who answered ‘yes’ to participating in lifelong education programs, 88.6% (n=109) responded participating at ‘community center for seniors’ , followed by 4.1% (n=5) at ‘senior center’ in the community, 2.4% (n=3) at ‘community center’ and ‘senior center for education’ respectively, 1.6% (n=2) others, and 0.8% (n=1) at ‘community cultural centers.’ Not many of the participants actively visit other agencies except for community center for seniors, indicating that the community center for seniors is the agency leading the programs of the lifelong education program.

[Table 18] Agencies of lifelong education program

Category	Frequency	Percentage(%)
Community center for seniors	109	88.6
Senior center	5	4.1
Community center	3	2.4
Community cultural centers	1	0.8
Seniors center for education	3	2.4
Others	2	1.6
Total	123	100.0

#### 5) Frequency of going out

- In response to the question of how many times a week do you go out besides work, 33.3% (n=100) responded ‘everyday’, followed by 27.7% (n=83) ‘3-4 times a week’, 23.0% (n=69) ‘more than 5 times a week’, ‘15.3% (n=46) ‘1-2 times a week’, and 0.7% (n=2) ‘not at all.’ In general, participants answered to go out frequently with the highest proportion answering ‘everyday’ and ‘3-4 times a week.’

[Table 19] Frequency of going out

Category	Frequency	Percentage(%)
Everyday	100	33.3
More than 5 times a week	69	23.0
3-4 times a week	83	27.7
1-2 times a week	46	15.3
Not at all	2	0.7
Total	300	100.0

## 6) Places of outings

- For the question asking where the participants spend most of the time when they go out, 47.0% (n=141) responded ‘community center’, followed by 23.3% (n=70) ‘park or playground in neighborhood’, 11.3% (n=34) senior center, 9.7% (n=29) others, and 8.7% (n=26) ‘spending time at social clubs.’ In general, participants tend to visit ‘community center’ where they provide diverse programs including the lifelong education program. Otherwise, they choose to go to neighboring park or playground to spend their spare time.

[Table 20] Places of outings

Category	Frequency	Percentage(%)
Community center	141	47.0
Senior center	34	11.3
Park or playground in neighborhood	70	23.3
Social clubs	26	8.7
Others	29	9.7
Total	300	100.0

## 7) Using digital devices

- In response to the question of the types of electronic devices the participants are using, 63.1% (n=193) responded ‘smartphone/tablet PC’, followed by ‘cell phone without internet’ (6.6%; n=19), ‘computer/laptop’ (5.6%; n=17), ‘none’ (0.3%; n=1). These findings indicate that the use of

smartphone rate has increased with the spread of smartphones. Still, approximately 30% of the participants were using the old cell phone without smart functions.

[Table 21] Using electronic devices (multiple responses)

Category	Frequency	Percentage(%)
Cell phone without internet	95	31.0
Smartphone/tablet PC	193	63.1
Computer/laptop	17	5.6
None	1	0.3
Total	306	100.0

#### 8) Barriers for using various functions of electronic devices

- To the question whether the participant has any difficulties using electronic devices, 53.2% (n=159) responded ‘I know how to use electronic device at a minimal level’ , followed by ‘I use the device fairly well’ (38.5%, n=115), ‘I have no difficulties using electronic devices’ (8.4%, n=25). The findings indicate that more than 50% of the participants only use the very minimum function of the electronic devices.

[Table 22] Barriers for using functions of electronic devices

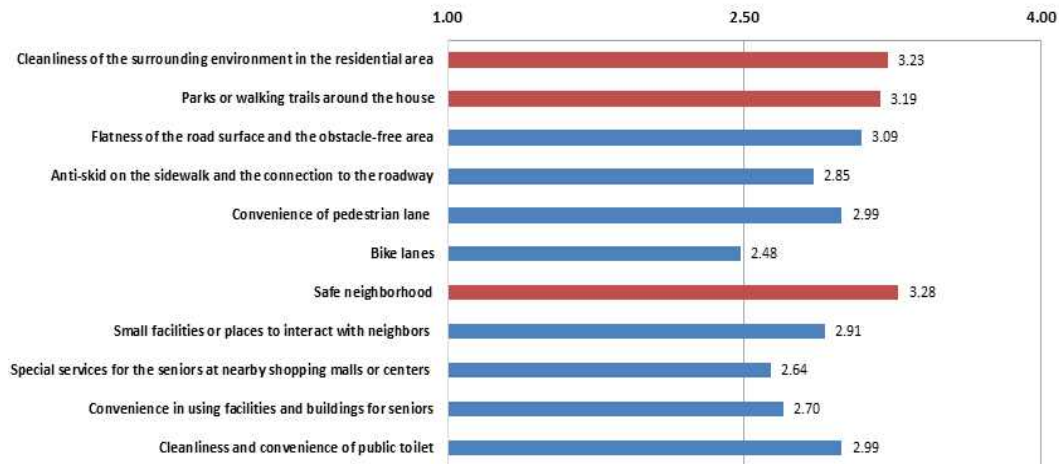
Category	Frequency	Percentage(%)
Can use at a minimal level	159	53.2
Fairly well	115	38.5
No difficulties using	25	8.4
Total	299	100.0



### 3. Cognitive assessment on the eight areas of the WHO guideline of age-friendly city

#### 1) Outdoor spaces and buildings

- The safety and the cleanliness of the living- and surrounding neighborhood were positively evaluated.
  - Participants perceived living in Gimhae-city as comfort and safe
- However, somewhat negative voices were found on creating of separate bicycle road.
- While most of the male seniors evaluated the outdoor space and building positively compared to female seniors, female seniors had more positive evaluations on the spaces where they can interact with neighbors compared to male seniors, indicating that female seniors may be more likely to interact with their neighbors.
- Compared to the young-old, more positive opinions were heard among the old-old. This can be seen that as the old-old live longer life as an older adult than the young-old, they are relatively adapting to and are satisfied with the current lifestyle or facilities in their neighborhood.
- In terms of the facility conditions, it was found that facilities located in urban areas are managed well in good conditions with convenient services for seniors to use, compared to non-urban areas.



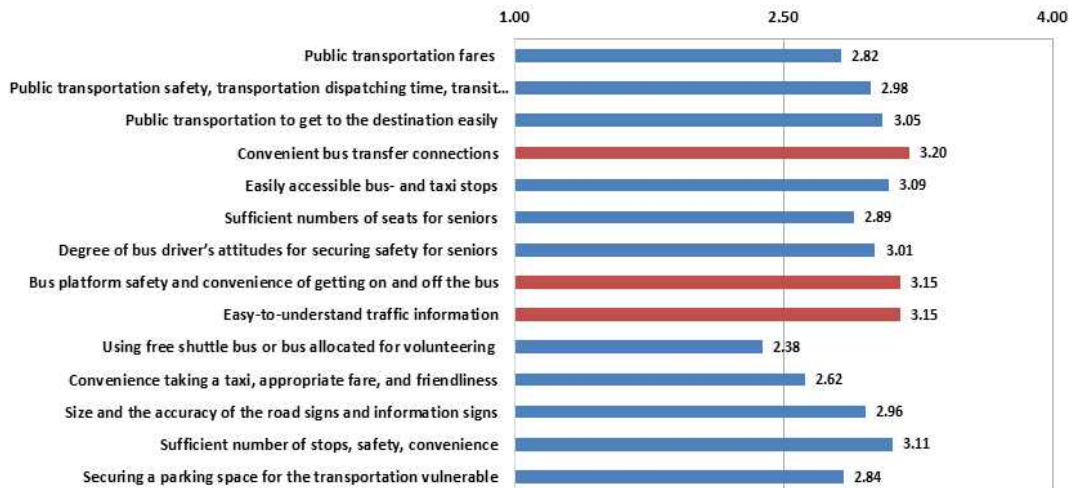
[Figure 1] Assessment of outdoor spaces and buildings

## 2) Transportation

- The respondents positively evaluated on the bus transfer, bus stop, and the traffic information. Overall evaluation of the transportation was shown to be positive.
- However, for the areas where they have less accessibility to public transportation, the great portion of participants negatively evaluated the use of free shuttle bus or bus allocated for volunteering.
- For the items asking transportation use, male participants responded more positively compared to females, while female participants responded relatively positive on the bus transfer, priority seats, bus driver' s attitudes for securing safety for seniors, bus stop location, parking lot for mobility handicapped.
- In most of the items, the old-old responded more positively compared to the young-old. For the item on the indication of the priority seats and bus driver' s attitudes for securing safety for seniors, the young-old responded more positively compared to the old-old in that the old-old may be more sensitive to the indication of the priority seats and safe driving due to their

physical aging.

- In addition, urban areas evaluated more positively on the public transportation facilities and services than non-urban areas. Improvements in public transportation in non-urban areas need to be prioritized.



[Figure 2] Assessment of traffic systems

### 3) Housing

- For the safety of the current residential area and housing, the participants responded very positively, and positively on the housing.
- However, it was neutrally evaluated in the supply of housing and assisted living facilities which meet older adults' housing needs
- In terms of the housing, most of the male participants evaluated relatively positive compared to the female participants. Particularly on searching for a the house with suitable price and financial ability, female participants responded relatively negative given that females are economically underprivileged.
- Although the old-old responded more positively on housing, they had less positive recognition in purchasing materials for house improvement, since

the old-old have difficulty moving compared to the young-old.

- In case of the old-old who do not have income for a long while, they are more likely to have difficulty finding housing that suits their economic conditions compared to the young-old.
- The safety of home and residential areas was evaluated relatively positive in non-urban areas compared to urban areas, whereas urban areas showed higher positive recognitions in all the other items.



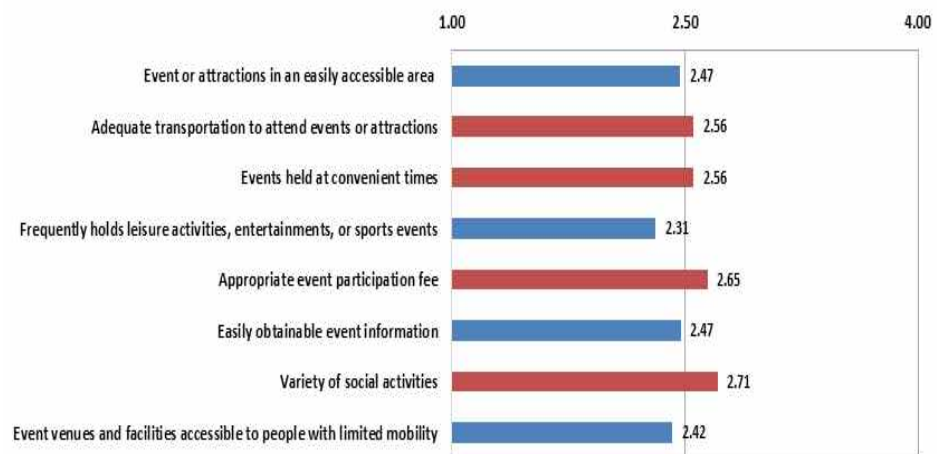
[Figure 3] Evaluations on the recognition of housing

#### 4) Social participation

- For the social participation, the results show low positive evaluations. In particular, the number of events or accessibility are highly negatively evaluated, indicating that opportunities for social participation are somewhat lacking and facilities and information are lacking as well.
- Most of the male participants evaluated the social participation relatively positive, with the time and duration of social participation and various social activities, in particular, were evaluated even more positively compared to female participants.
- Overall, the old-olds responded to have relatively higher positive opinions of social participation than the young-old. However, when it comes to

acquiring information on events held in Gimhae-city, the young-old showed higher positive evaluations than the old-old.

- In all items of social participation, positive opinions were relatively high in urban areas compared to non-urban areas. Therefore, urban areas are expected to hold more number of social events and have more information on events compared to non-urban areas.
- Regarding the gap between residential areas, Gimhae-city should create various events in different venues and facilities, so that all seniors in Gimhae-city can easily participate in.



[Figure 4] Evaluations on the recognition of social participation

## 5) Respect and social integration

- For the respect and social integration items, the provision of friendly services to seniors and positive image of seniors in the media are positively evaluated.
- However, participation in school education or school events, clearly stating senior participation in local events, or local events and programs that families can join were negatively evaluated.
- In terms of respect and social integration items, most of the male participants evaluated positively compared to the female participants. However, female

participants evaluated providing special benefits and services to economically disadvantaged seniors more positively than male participants.

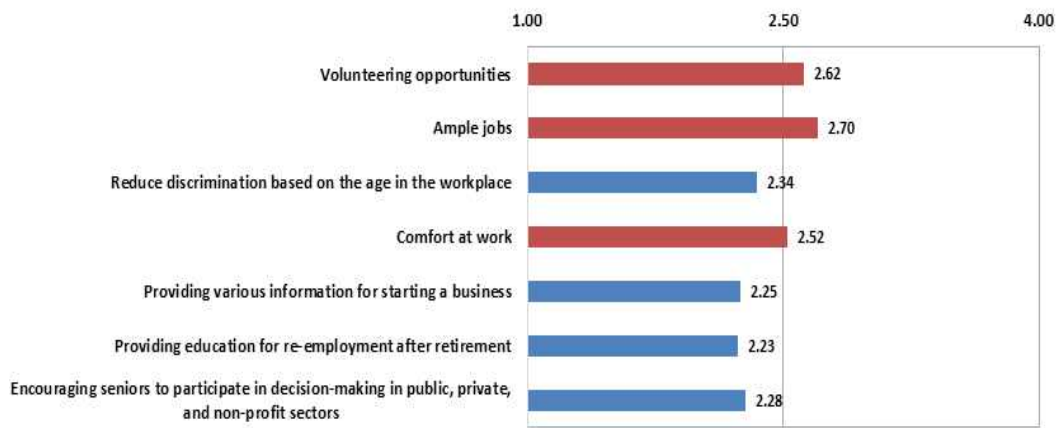
- For the respect and social integration, the old-old had relatively more positive opinions, while the young-old complained on providing public benefits and services to more economically disadvantaged elders
- In most of the items, urban areas responded relatively positive compared to non-urban areas. In non-urban areas with a higher proportion of seniors, access to senior products and providing aging -friendly services were positively evaluated. evaluated.
- Since it' s recognized that there are lack of integrated efforts to understand seniors and to participate together, it' s necessary to implement lifelong education by life cycle for older adults, and to develop events or programs that they can join together with their families.

## 6) Citizen participation and employment

- For the item asking citizen participation and employment, it is evaluate that the opportunities for seniors to participate in volunteer work and jobs for seniors are increasing.
- However, lack of information on starting business for seniors, reemployment training, and encouragement of participation by the seniors were pointed out as problems.
- Overall, female participants evaluated more positively on citizen participation and employment than male participants, while male participants evaluated positively on the re-employment education or encouraging senior participation. Findings indicate that female seniors get involved more in volunteers and senior job placements compared to males.
- In all items, the old-old evaluated more positively than the young-old. In other words, the young-old may have higher needs for citizen participation

and employment in that they might be more aware of the lack of current conditions.

- Urban areas evaluated relatively positive in all items, compared to non-urban areas.
- Gimhae-city need to expand social service activities and jobs for seniors that male seniors can participate in. For the non-urban areas, information on jobs and re-employment education should be strengthened.



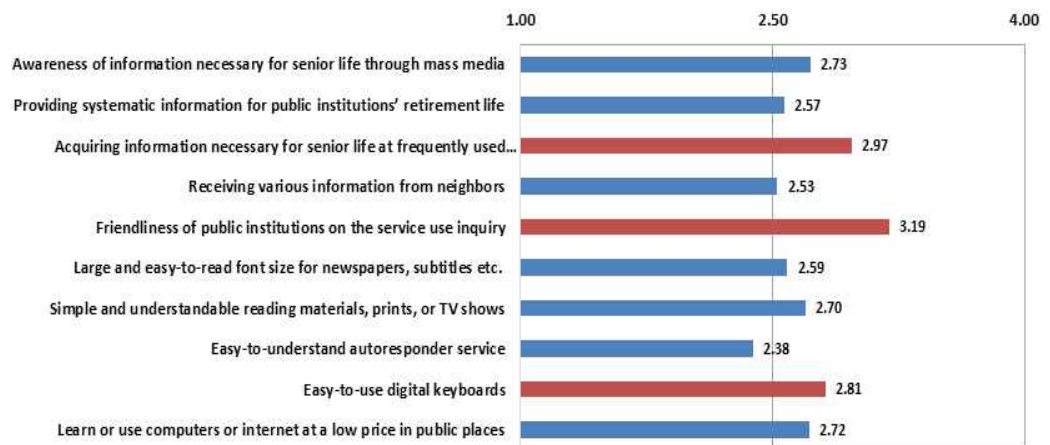
[Figure 5] Evaluations on the recognition of citizen participation and employment

## 7) Communication and information

- While positive evaluations were obtained for informative guidance on obtaining information through various communication methods, acquiring information on frequently used places for seniors, and information on daily device use including keyboards, participants responded negatively on the autoresponder service.
- For acquiring information necessary in senior life through mass media, public agencies in Gimhae-city, or frequently visiting places and neighbors, female participants responded positively compared to male participants.
- In every items, positive reponses were almost equal for the young-old and

the old-old, indicating that there is no critical difference in the satisfaction of communication and information usage by age. However, for the item asking the satisfaction with the keyboard use of electronic devices, the young-olds' responses were relatively positive, assuming that the different level of physical ability between the young-old and the old-old may have resulted in these differences.

- Although non-urban areas had positive evaluations on information acquisition through neighbors and the friendliness about the inquiries on the information usage, urban areas received relatively higher positive opinions in most of the items.



[Figure 6] Evaluations on the recognition of communication and information

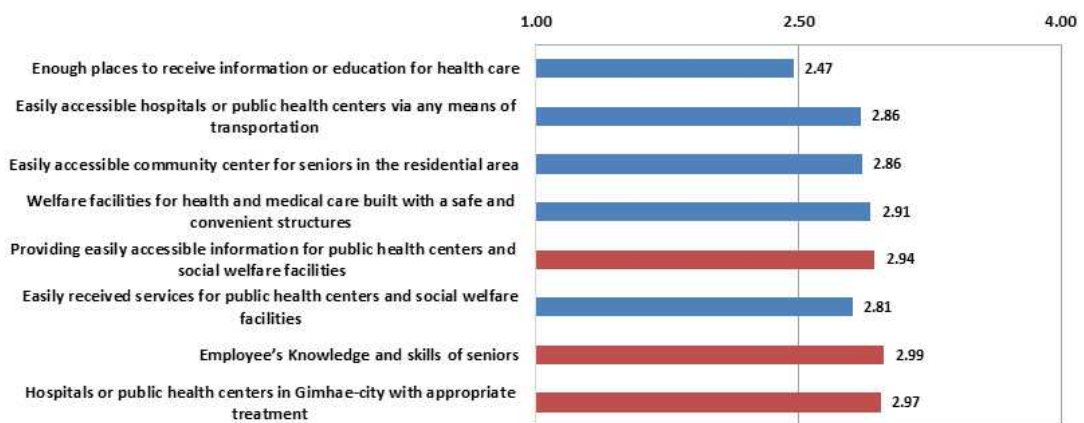
## 8) Community resources and health service

- Regarding items related to community resources and health services, participants positively evaluated the knowledge and skills of the staff of medical centers and senior welfare facilities, information on the use of hospitals, welfare facilities, and public health center in Gimhae-city. However, places where information for health care or education/training can be received were negatively evaluated.
- Positive evaluations of community resources and health services between male



and female participants was on a similar level, with a slightly higher on the female participants. On the other hand, male participants responded relatively more positive regarding the administrative procedures for using welfare facilities in the residential area and receiving necessary services at public clinics and welfare facilities.

- Regarding the use of welfare facilities for seniors in the residential area, the young-old had a relatively higher positive opinion than the old-old, whereas the old-old evaluated positively in all the other items.
- In all items, positive evaluations were obtained from urban areas, with a large gap in the quantity and the accessibility to facilities.
- It is expected to plan for the improvement accessibility to welfare facilities and the medical facilities for seniors in non-urban areas.



[Figure 7] Evaluations on the recognition of community resources and health service