

**ENHR 2009 International Conference
'Changing Housing Markets: Integration and Segmentation''**

**The elderly housing as a place to age in place
Comparative study on the pattern of mortality/discharge
In Denmark and Japan**

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Abstract:s:

From the context of ageing in place, which is helpful of cost cutting with high quality of life, the most important concept is to ensure and support the residents die in the elderly housing as naturally as possible. Especially in Japan, it was clear from author's latest survey that the secure feeling to be ensured to stay till the end of life in their own elderly housing was the most influential factor on their subjective well-being.

The purpose of this investigation is to demonstrate how many older persons die in the elderly housing actually and its situation, and how many remove into nursing home and its reason. The nationwide macro data was gathered in Denmark and case's history data were gathered through the half-structured interviews with the leaders of home-nurse in both countries. Findings are:

- 1) In Denmark, almost 15.6 % of whole residents were discharged from the elderly housing yearly (10% in one site in Japan).
- 2) The pattern of discharge was roughly divided into 3, such as 'death in the elderly housing (85.7% in DK, 50.0% in JP)', 'to institutions (14.3% in DK, 31.8% in JP)' and 'to other dwellings (0% in DK, 13.6% in JP).
- 3) The pattern of mortality varied; getting old and worst from specific illness, getting very old without illness, sudden death, and so on.

Even in these little samples investigation, it is obvious that Japan is too immature for older persons to age in place even in the elderly housings. Consistent housing policy for older persons and more community-based 24-hour care are required.'

Keywords: Ageing in place; elderly housing; relocation, move-out; motarlity, Denmark, Japan

1. Introduction

Until the 1970's, older adults housing in special sheltered housing and residential care facilities was widely considered as a sign of a highly developed care system. In the 1970s, this changed. A combination of considerations concerning the importance of autonomy, privacy and the older adults' right to choose on the one hand, and the necessity to reduce the costs of collectively financed facilities, particularly residential care, on the other, lead to a spectacular drop in the number of older adults living in residential care in the northern countries. In the 1990s, in almost every country the focus shifted to a further extension of home care and other possibilities to grow old in one's own familiar surroundings. In European and other western countries there have been a flood of innovations in the past few decades in the areas of housing and care for older people. One important driving force behind these innovations is the desire for 'ageing in place' (Houben, 2001, 657; Pastalan, 1997).

'Ageing in place' is regarded as effective to delay or even avoid relocation to a nursing home. Elderly housings for ageing in place have been forefront issue.

In Japan, we have had a strong tendency of heavy rely on nursing home care with 4.4 % of older population over 65 years old, since 'Elderly welfare law' came in to force in 1963, whereas the elderly housings are provided with only 0.4 % of older population over 65 years as table 1 shows. In the past decade, we had an innovative change of nursing home. In 2003, ministry of labour and welfare regarded 'modern nursing home (SHINGATA-TOKUYO)' as a standard, which is regulated by 'single room' and 'unit care (small-scaled care style like home)'. And then in 2005, the financial support from central government for building new nursing homes was quitted. Only few public supports are done by local governments. These changes can be interpreted as the significant movement forward ageing in place.

Through all these challenges, however, the field where Japanese central government are actually promoting forward ageing in place is only residential care one. The elderly housings are continuing standstill. The lack of the elderly housing and the community-based care means the backwardness of well-balanced ageing in place.

We Japanese are fronting with the most aged society in the world (22.2%). The aged rate will reach to 30.5% in 2025 and 39.6% in 2050. The policy making for older persons forward ageing in place is one of the most urgent matter.

In this paper, the focus is placed on the reality of ageing in place in elderly housings in Denmark and Japan. The final purpose of this survey is to get valuable implications to develop ageing in place in elderly housings in Japan.

<Definition of elderly housing>

Elderly housing is the house designed for the elderly whose physical/mental competence declined and not include institutions. The residents are the tenants and live there utilizing community-based care. Elderly housings are based on the concept of ageing in place and on the theory of separating housing and care.

Table 1 : Institutions and Elderly housings in Japan -Denmark

	Japan Population : 128,000,000 Elderly population (+65) : 28,000,000		Denmark Population : 5,470,000 Elderly population (+65) : 850,000	
Residential care facility	Nursing home(TOKUYO)	420,000	Plejeboliger	44,858
	Rehabilitation home	316,000		
	Long-term care hospital	105,000		
	Group home for dementia	133,000		
	Private nursing home	110,000		
	Care House	72,000		
	Old people's house (A/B)	15,000		
	Old people's home	65,000		
	Rental housing for the elderly	28,000		
	Subtotal Japan / Institutions	1,264,000 (4.5%)	Subtotal Denmark / Institutions	44,858 (5.3%)
Elderly housing	Public elderly housing	22,000	Ældreboliger	39,321
	rental housing for the elderly	36,000		
	Private elderly housing	13,000		
	Life assistant housing	6,900		
	Owner apartment	5,000		
	Senior housing	2,500		
	Group living	200		
		Subtotal Japan / E. Housings		

2. Review of the literature

Ageing in place

Ageing in place refers the trends whereby older persons are 'living in their own residences and communities as long as possible' despite increasing frailty and its associated problems (Kelen & Gliffiths, 1983; Pynoos, 1990, 167, Ivry, 1995). Traditional and innovative forms of housing for the older adults can be seen as various combinations of functions in the areas of housing, care, and welfare (Houben, 2001, 658). What is demonstrated as the most important characteristics of ageing in place in the previous researches can be demonstrated like below.

1) Spatial separation of the care functions and the housing functions: the most important factor of ageing in place is 'care' and 'housing'. The function of care as it has been provided in the traditional intramural/residential facilities is 'spatially disconnected' from these facilities in ageing in place, and also offered in other specific housing projects for older adults and in community centres. (Houben, 2001,658). Houben emphasizes the high quality of the housing as more mature character than the traditional intramural/residential settings. The dimensions and comforts of the flats are comparable to those of the average apartment in the regular housing market (2001,658). Gottschlk (1993) point out the older people's right to live in independent housing.

2) Dynamism including social service functions and community/neighbours matter: Social service functions like physical exercise activities, recreational activities, education, and

counselling are also spatially disconnected from institutions, customised to the needs of older adults and offered in community centres (Pynoos, 1990, pp.167; Houben, 2001, 658).

3) Independence (self-reliance) and dignity of the elderly: The concept of Ageing in place derived from the considerations concerning the importance of autonomy, privacy and the older adults' right to choose (Houben, 2001; Kelen & Gliffiths, 1983). So, the care is customised and tailored in the way of congruence to the needs of older adults to support their independence and dignity (Lawton & Nahemow, 1973; Houben, 2001). This means to some extent that too much care spoils older adults' potentials (Lawton & Nahemow, 1973, pp.659-664; Lawton, 1976, pp.237-238).

4) Secure of residential continuation till the end of one's life: That older adults want to live their own houses as long as possible is the social reality (Newman, 1990, pp19-20; Sykes, 1990, Fogel, 1993, 19; Tilson & Fahey, 1990, *xvi*; Leather, 1993, 14; Ivry, 1995, 84; Ball, 2004, pp.208-209). We must attach great importance to this reality . To be exact, this context implies that ageing in place aims to secure of residential continuation till the end of life (Ball, 2004, S202). In principles, the second moving to other accommodation from the elderly housing is not allowed (Houben, 2001). The breaking off the continuation possibly causes an identity crisis for the elderly (Atchley, 1989, 187).

The theory of separating housing and care (Ageing in place in Denmark)

Gottschalk mentioned that the term of 'institution' means a package of housing and care (1993, 49) and that nursing homes are not being built anymore in Denmark due to the ideology of separating the housing functions and the service functions (1993, 47). Houben and van der Voordt (1993, 2001) said that the function of 'care' as it was provided in the traditional intramural/residential facilities is 'spatially disconnected' from these facilities in ageing in place. Daatland (2000) also demonstrated the similar concept of the separating housing and care as shown in table 2.

We can find out the same principle in the government report issued in Denmark in 1981. Under this proposal, the elderly housings "Ælderboliger (Almene ælderboliger)" have started to be built to promote aging in place after prohibition of building new nursing homes "Plejehjem" since 1988 (Gottschalk, 1993; Hansen, 1998). The older persons can age in place in elderly housing to get community-based care flexibly as they are getting more and more frail or handicapped in Denmark. This is the reason why we selected this country to demonstrate the differences between two countries.

Table 2: Pacolet's interpretation of the theory of separation of housing and care

	Instituion	Housing
View point	Facility-centred Provider-driven	Person-centred User/consumer-driven
Model	Stair model	Stay model
Care	Package model Care attached with housing	Flexibility model Care attached with an person
Accommodation	Specific accommodation	General accommodation with tenancy agreement

Revised by Matsuoka on (Pacolet, 2000)

The criteria of ageing in place

In the United States, the promotion of ageing in place by maximizing resident independence and providing services to accommodate residents' changing needs is regarded as the key philosophy of assisted living facilities (Ball, 2004). Ball (2004) and Chapin & Dobbs-Kepper (2001) views that the elderly housings for a resident's stay as temporary, that is , designed to stave off, does not prevent the residents from relocation to nursing homes. They clearly say that to fully age in place is to remain in the facility until they die.

According to Ball's criteria, we define a true ageing in place as to remain in the housing until the residents die. The move out to other facilities from the elderly housings is not true ageing in place but relocation.

Munroe (2005) revealed that each assisted living facilities are taking different move-out criteria, such as incontinence, requirements of intensive medical care or feeding assistance and so on. He emphasizes as well that there is considerable opportunity for inconsistency in practice although philosophically, older persons want to stay in the facilities and similarly, families, providers, and policymakers also want to avoid unnecessary relocation.

In Japan, the residents in elderly housing have a strong anxiety for relocation in case of requirements of continuous care or intensive medical assistance. Accordingly, the most influential factor on their subjective well-being is the secure feeling to be ensured to stay in their own elderly housing till the end of life (Matsuoka, 2005).

Whether or not the residents can remain in the house until they die is the key issue of ageing in place. To take Ball's criteria, we regard the residents in the elderly housing who remain until they die as 'death in the house' group and the person who moved out to nursing homes or dementia units or other places as 'relocation' group in the strict sense of the word.

To date, no one has examined the person's ratio in quantity and the process of ageing in palace qualitatively and longitudinally. This study in a small sample of elderly housings addresses this knowledge lack. We define ageing in place simply as the process of residents growing older in one setting, and explore the pathways of residents who die in the home (ageing in place group) and who were transferred to dementia units or other places (relocation group).

3. Research design and methodology

The main purpose of this focused investigation is to make sure whether or not ageing in place is proceeding suitably in two countries by demonstrating how many residents move out from the elderly housing and how their pathway is.

Denmark is the country where is assumed to promote ageing in place well under the strategy of separation of care function and housing function, and Japan is assumed to be immature.

A combination of qualitative case study and quantitative measures were used to demonstrate their pathway. The key informants were the leaders of home-nurse who have been providing community-based care to the residents.

Data Collection

At first, we tried to get the nationwide yearly move-out rate from elderly housing. And then, we looked into how many residents died in the house and the status (ageing in place group), and how many were transferred to nursing homes/other places and the reason (relocation group).

In Denmark, the nationwide study towards 98 municipalities was conducted to get the yearly average rate of move-out from elderly housing and the average rate of moving into nursing home, which is called as 'Plejebolig' and is operated as the house with 24-hours care. We looked into the number of new admission instead of move-out number from elderly housing because all municipalities did not count the number of the moved-out. We got the answers from 15 municipalities (collecting rate 15.2%). Concerning the rate of relocation to 'Plejebolig', only 3 municipalities answered (collecting rate 3.5%).

And then, the study including qualitative case study was conducted in a elderly housing setting (table 3), where elderly housing is termed "Ældrebolig" and is defined broadly in statute as social housing where the residents live independently getting community-based nursing care as they are getting older and frail.

In Japan, the average rate of move out from elderly housing was collected from only one site (table 3) instead of nationwide study. And then, the same qualitative case studies were done. The reason why we cannot conduct the study targeting many elderly housings is that almost of all private elderly housing organizers are so exclusive that the researcher cannot get the cooperation easily.

Table 3: Housing Characteristics (Denmark)

	Denmark, B house	Japan, M house
Category of the house	Ældreboliger Public rental housing (Social housing)	Private elderly housing The residents own the house till move out. (They pay 10 years rental fee at once when they move in.)
Capacity	147	32
Years of Operation	30	8
facilities	Elderly housing (147) Housing with 24 hours care (48) Activity house Community Restaurant	Elderly housing (32) Dementia units(23) In-house restaurant
Type of house	2 bed room units (65 m ²) 147 units	1 room (30-35 m ²) 11 units 1 bed room units (32-45 m ²) 17 units 2 bed room units (50-58 m ²) 4 units
Housing rental fee (monthly)	€800-1,000/ m	€120,000-230,000 (for 120 months) Service fee €630/ m Meal €400/m (selective)
Practical help	Public community-based care	Service fee covers practical help
Personal help		The residents can use public long-

		term care insurance.
meal	They can cook in the house or eat in the community restaurant.	They can cook in the house or eat in the in-house restaurant.

Interview guide

The interview guide was semi-structured one and addressed a variety of topics related to ageing in place, including residents' age, sex, family status, health status, how the residents passed away, the reason of moving to other places, the amount of care on the last stage. All interviews were recorded and transcribed for analysis. The names of the residents were not notified to protect their privacy.

4. Results

Move-out rate

The average rate of move-out from elderly housing in two countries are shown in table 4. In Japan, the 8 years average rate is shown instead of the nationwide yearly data.

Table 4. The average rate of move-out rate from elderly housing (Denmark, Japan)

	Denmark	Japan(M house, 8 years)
Target	98 municipalities	1 elderly housing (8 years)
	Return :15 municipalities collecting rate: 15.3%	
Move out rate	15.6%	9.8%
	Death in the house :12.3%	Death in the house :3.9%
	Move to other facility: 3.3%	Move to other facility: 4.3%
	Move to other place : 0	Move to other place : 1.5%

Result of the qualitative study

The interviews on each person's reason to move out and on the pathway/process were conducted towards the leaders of home-nurse. Table 5 describes the results in two countries.

In B house (147 residents) of Denmark, 23 persons moved out from the housing in 2008, which corresponds to 15.6%. 20 residents (13.6%) out of 23 residents died in the house in a various way as described in table 5. 3 (3.9%) out of 23 residents were discharged from the house and transferred to 'Plejeboliger', which is relocation group.

In M house (32 residents) of Japan, 25 residents moved out during 8 years (total 256 residents), which corresponds to 9.8%. 10 residents (3.6%) out of 25 died in the house, 12

residents move to dementia units or to other nursing homes or to hospital. 3 residents move to general apartment or own home.

Table 5: The reason of move-out from elderly housings

Denmark (147 units/2008) 23=15.6%	Japan (total 256 units/8 years) 25=9.8%
Death in the house 20 (13.6%)	Death in the house 10 (3.6%)
Sudden death (4) - myocardial infarction (M80) -pneumonia (M94) - myocardial infarction (M75) -stroke (F90)	Sudden death (4) -myocardial infarction (M75) -myocardial infarction (M76)
Found dead in the morning (2) -broken leg, weakening (F91)25h -lung cancer, weakening (F87) 16h	
Terminal care (3) -broken leg (f93) 25h -pneumonia (f78) 28h -pneumonia (f82) 20h	Terminal care (5) -pancreas cancer (f90) -liver cancer (m73) -stomach cancer (m79) -lung cancer (f83) -redundant disease(f82)
Emergency stay in hospital (11) Cancer-colon (M82) -prostatic (M89) Stroke (M90) Heart-myocardial infarction (M75)4h -myocardial infarction (M92)16h -myocardial infarction (M94)4h Lung-pneumonia (F89) 6h -pneumonia (F97) 15h -pneumonia (F86) 25h -pneumonia (F83)16h -pneumonia (F83) 21h	Emergency stay in hospital (3) -breast cancer (F79) -myocardial infarction (M88) -weakening (F82)
Relocation 3 (2.0%)	Relocation 12 (4.7%)
Dementia (1) -disorientation	Dementia (5) -disorientation (M) -had a small fire (F88) -cannot come to restaurant (F) -dementia (F) -fire accident (M)
Mental illness (2) -Unable to utilize care (F84) 28h -Fear, confusion (F88) 3h	Mental illness (1) -Fear in the night(M 83)
More personal care	More personal care (6) -night excretion, Parkinson (F75) -night excretion, Parkinson (F82) -night excretion, weakening (F85) -night excretion, weakening (M80) -wheel-chair user (M75)

			-medical assistance to hospital
Other 0(0%)		Other 3 (1.2%)	
			-to own home
			-general apartments (2 persons)

Note: M:male, F:female, The number with ‘h’ shows how many hours they use a week.

Death in the house (Denmark)

Pattern of mortality of 20 persons is divided into 4 groups such as “sudden death” group, “found dead in the morning” group, “terminal/palliative care” group and “emergency stay in hospital” group.

<Sudden death>

4 residents died so suddenly because of myocardial infarction and stroke. They had no specific disease so far and joined the friends or enjoyed billiards in the activity house till the day before break down.

<Found dead in the morning>

The other residents were suffering from some chronic illness. 2 persons were found dead in the morning in the bed. Both of them utilize public community-based care more than 25 hours a week including practical help and personal care and home nursing, which is considered as maximum amount comparatively. One lady, 91 years old, was on the way of recovery after frequent hospital stay. The other was getting worse with lung cancer after heavy smoke.

<Terminal care>

3 residents passed away gently surrounding with their family members after refusing nutrition or medical treatments. The lady, 93 years old, asked her doctor to stop nutrition and lived one week with only water supply. She said that I have lived sufficiently. Other lady, 78 years old, refused medical treatments of pneumonia when 3 weeks passed after going back from the hospital. They were receiving 20-28 hours community-based care a week, which enables older persons to get 6-8 times visits a day.

<Emergency stay in hospital>

11 residents died in a hospital after brief stay after emergency hospitalization. 2 residents stayed only 2-3 hours in a hospital, 3 residents stayed 2-3 days. The longest stay was 7 days.

The reasons of hospitalization vary such as, a change for the worst of cancer, stroke, myocardial infarction, pneumonia. The similar pathway among them is that they have chronic diseases and have been getting worse and worse after frequent hospital stay, and pass away eventually.

Relocation (Denmark)

In the B house, 3 residents were discharged from the elderly housing and moved into Plejboliger in one year. The reasons of relocation are quite similar such as, disorientation from dementia and mental problems. A lady aged 88 with dementia cannot manage her life. She cannot understand where she is, nor the time to eat/sleep and so on. Other lady aged 84 cannot utilize personal care for meal and exposes herself to dangerous condition. She got more and more skinny. They utilize the community-based care for more than 25 hours a week. The last lady aged 88 is unable to stay alone in the night suffering from illusion/phantom.

Death in the house (Japan)

10 residents died in the house are divided into 3 groups, “sudden death” group, , “terminal/palliative care” group and “emergency stay in hospital” group. In M house, there is no one assigned of “found dead in the morning” group.

<Sudden death>

In M house, 2 residents died suddenly without chronic illness. The man, 75 years old, fall down in eating together with other residents in the restaurant. Immediately the ambulance car came, but they found him dead. Concerning other man, 76 years old, myocardial infarction attacked him in the taxi going back to the house.

< Terminal/palliative care >

5 residents get terminal/palliative care in the house and passed away. They suffer from pancreas cancer, liver cancer, gastric cancer, or lung cancer. After the operation, they came back to the house with their desire to stay in their own home and keep ordinary life.

< Emergency stay in hospital >

3 residents died in the hospital after emergency hospitalization. The lady aged 79 was on the last stage of cancer terminal. The person aged 88 was transferred to the hospital with myocardial infarction. The lady got tired from moving into the house from her previous house at that age of 82. They passed away after 2-4 weeks stay in each hospital.

Relocation (Japan)

12 residents moved out to dementia units or to other nursing homes. The reason of moving-out was ; 1) dementia (5 residents), 2) cannot stay alone during the night from disorientation (1 resident), 3) requirements of continuous long-term care (5 residents), 4) requirements of intensive medical assistance/care (1 resident).

Two persons with dementia had a small fire due to misuse of gas oven. Other three with dementia cannot live alone any more from disorientation of time and place. 5 residents need continuous care were Parkinson's disease patients or senile decay. The common problem among them is that they cannot go to often in the night by themselves.

5. Discussion

This research explored the process of ageing in place of the residents in elderly housing and the actual conditions of move out, including death in the house and relocation in a small sample in two countries.

Little is known about the move-out rate from elderly housing and their destination so far. Among few researches, let's look into Ball's study (2004, S205). Ball states that 43 out of 185 residents in 5 assisted living facilities in Georgia state moved out yearly and 14 (7.6%) were transferred to dementia units and 7 (3.8%) died, either in the home or after a brief hospital stay. In Denmark, the total rate of move out from elderly housing is 15.6% (15.6%), and the rate of older persons who died in the house was 12.3% (13.6%) and the rate of relocation to dementia units/nursing homes was 3.3% (2.0%) as a nationwide average. The figures in round brackets show the result in B house. Comparing this result with 5 assisted living facilities' result, it is not so unreasonable to presume that Danish experiences imply successful ageing in place from the view point of Ball's criteria.

As Ball (2004) describes that central to a resident's ability to age in place was ultimately the "fit" between the capacity of both the facility and the resident to manage resident decline, the flexibility between the capacity of the environment and the resident is the key issue of ageing in place. The 24-hour community-based care, which is detached from the facility/housing and can 'fit' the changeable residents care needs, enable the residents to stay one place till the end of life. In Denmark, the persons died in the house have the tendency of maximum user of home-care at the last stage. Obviously, 3 persons in 'terminal care' group utilize more than 20 hours home-care a week, which corresponds to 6-8 times visit a day.

3 persons decided by themselves to refuse nutrition and medical treatment. One of the most important concepts of ageing in place is to support an independent life in the house. To live independently contains the concept to take self-determination. From the standpoint of this context, self-determination of terminal stage of the life corresponds with the philosophy of ageing in place. In M house (Japan), 5 out of 10 residents take terminal care positively. The attitude of older persons and the doctor to support the person in the terminal stage will be more required.

Surprisingly, 11 out of 20 residents in Denmark die during the brief/temporary stay in hospital. We regard this pattern as ageing in place with consideration of the short duration of stay, such as 2-3 hours or 7 days at longest. However, there is strong possibility of the bias of the B house. For the next step, more purposive sampling must be done. Regarding the temporary stay in hospital, 3 out of 10 residents of M house in Japan also die during the temporary stay in hospital. On the contrary of Denmark, the duration of stay is quite long such as 2-4 weeks. We regard these cases as ageing in place by considering that they were transferred to the hospital for emergency with the intention to come back to home again.

I would like to discuss about the limitation of ageing in place from the case study of the residents who were transferred to dementia units or other nursing homes.

12 residents out of 25 were discharged from the house to nursing homes in Japan. 6 persons out of these 12 were the persons with dementia. 5 persons out of 12 were transferred against their will owing to lack of night care. If they should be able to utilize the community-based night care, they could have remained in the house. The reason why they cannot stay in the house longer is just lack of the night care. Actually, we are tremendously running out of night care all over Japan. As Hansen said (1998), 24-hours care is crucial element for deinstitutionalization/ageing in place. We Japanese, who have stopped the financial assistance to build new nursing homes since 2005, need to develop the 24 hours community-based care intensively to promote ageing in place.

In Denmark, no one was discharged from the house to nursing homes due to physical care needs. Generally speaking, the persons with physical handicap can live in their house or in the elderly housing with 24 hours care. Only reasons of discharge from the house are the disorientation derived from dementia/mental illness. It is reasonable to think that this Danish status imply the limitation of ageing in place. The person with severe dementia or with mental problem would better stay in special housing with care.

6. Conclusion

Many studies refer to the importance of ageing in place. Only few study, however, pay attention to the reality of move-out/discharge from the elderly housing or to the process to age in place in the house. This study illustrates each residents' status and explored the pathway of ageing in place.

This study implies the importance of 24 hours community-based care to ensure the flexible care supply for the residents in the elderly housing in accordance to their changeable needs, on the other hand the limitation of separation of housing and care came to light. Whatever sufficiently they may supply 24 hours care to older persons as community-based one, the timing to move to special units or to nursing homes will come in some case with severe dementia or mental illness or crisis of existence.

For developing flexible approaches to ageing in place, Japanese central government must put the new community-based services into practice as well as building new elderly housings suitable for independent living. At the same time, we need to know the limitation of ageing in

place for specific group. Accordingly, home like nursing homes in the context of extension of ordinary life is required in each community for the person with dementia/mental problem. If there is small-size housings in the community where even the person with dementia can live continuously with community-based care, this limitation will disappear in the future.

7. Limitation

In this study, the sample size is small and the samples come from only one site in each country. The results of this survey cannot be generalized because. I would like to continue my research on this theme in the future.

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