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HOW MUCH FAMILY FINANCIAL SITUATION HAS IMPROVED EIGHT YEARS AFTER THE KOBE EARTHQUAKE

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SUMMARY

This study is based on the analysis of social random sampled surveys conducted in the Hanshin-Awaji Earthquake impacted area every two-year since 1999. 2001 and 2003 surveys were designed as the panel survey, and 2005 survey will be. The research frame building for the survey study was hypothesized by the major findings from the grass-root workshops in 1999 Kobe City Assessment, which identified seven critical factors for the process of life recovery after the event; housing, social ties, land use planning, physical/mental health, preparedness, economic/financial situation, and relation to government.

In terms of economic/financial situation, the question asked the way of changing the family budget compared the present situation with the situation before the event. The results of the analysis clarified the secular change of the situation of the family budget 6 and 8 years after the Earthquake. The major results of panel surveys were as follows: ①In 2001, respondents, whose houses suffered fully damage, were still economically in the bad condition, while in 2003, the degree of housing damage the respondents suffered was not the major determinant of the situation of family budget any more, especially incomes and expenses, ②Comparing 2001 with 2003 surveys, in the process of upturn in the family budget, it began on the basic items of expenses, such as food, housing and utility. After that it went on to selective items of expenses, such as clothing, dining out and recreation. The deterioration of living expenses did not have any obvious patterns.

INTRODUCTION

Background of the Study

Hyogo-ken Nanbu earthquake that occurred on January 17, 1995 caused an unprecedented catastrophe. This great earthquake, whose hypocenter was directly below a metropolitan area, caused not only direct damage to housing and structures in the street, but also caused indirect damage to social systems and organizations with vast damage to the daily life of inhabitants. The influence of such indirect damage

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continued for a considerable time, and even after completion of the recovery of social infrastructures, citizens have been making a lot of effort to recovery their livelihoods. When we examine the restoration processes in the disaster stricken area, we can grasp the reconstruction processes for social infrastructure, housing and city planning more easily because there are various indices for physical reconstruction. For economic reconstruction, there are macro economic indices, such as the economic growth rate. However, there are not enough micro indices detailing the circumstances of citizens. It is because there have been no adequate studies on the recovery of livelihoods as a whole that covers the circumstances of citizens.

An attempt to examine the process of recovery of citizens living started in the disaster area four years after the occurrence of the disaster in 1999. It is a social survey that performs fixed-point observation of the recovery of livelihoods in the disaster area every other year. The result of this "Study on awareness and the behavior of people after the disaster" obtained from the "Survey on the change of habitation and reality of living after the seismic disaster" in 1999 2) had evolved into the "Survey of life recovery" performed since 2001. From the surveys of 2001, we added a new survey element "panel" taking implementation of the continuous social surveys in 2003 and 2005 into consideration.

When we performed a social survey selecting those polled using a statistically correct sampling method, the result offered valuable data that showed the general trends of the population. In surveys made in 2001 and 2003, both surveys used a stratified two-stage sampling method, randomly selecting 330 points from the object area of the survey, then it picked 10 people from a basic registry of residents for each point by means of sampling with probability proportional to size. From two surveys which employed statistically warranted random sampling, we are going to examine the actual status of the change of "recovery" of the Great Hanshin Awaji Earthquake victims in 2001, six years from the disaster, and in 2003, eight years from the disaster.

Objectives of the Study

Our study has two objectives. Firstly, it is to comprehend macroscopic changes to the victims' circumstances since the disaster from the survey of live recovery performed in 2001 and 2003 in the disaster area of the Great Hanshin Awaji Earthquake, based on random sampling. Secondly, among panel respondents who replied to both 2001 and 2003 surveys, we aimed to trace trends of micro-domestic economy of respondents.

METHOD

Outline of Survey

The data used in this paper are obtained from "The survey of live recovery 2001 and 2003" implemented by the Disaster Prevention Research Institute, Kyoto University. The objective of the survey was to "perform continuous fixed point observations on the inhabitants of the disaster area to clarify the realities of the recovery of living and to contribute to disaster countermeasures and recovery countermeasures in future".

Those Polled

From all inhabitants of 20 years old and more in the area that suffered seismic intensity of 7 during Hyogo-ken Nanbu earthquake, in the area where town gas was suspended and in the whole Kobe city, we extracted 3,300 people from the basic registries of residents with stratified two-stage random sampling. (table 1) The survey methods were mail, self-enumeration method and collection by mail. As to questionnaire items on "circumstances", the theme of this paper, we adopted a form of popular housekeeping account books, and we asked people to select a pertinent change to their housekeeping that occurred after the disaster from three options: "increased, no change or decreased" for income, expenses, and deposits and savings. As to expenses, we classified these into 13 items: food, eating out, housing and

Table 1: Research Overview in 2001 and 2003

	2001 Random sampled survey	2001 Random sampled survey	Panel survey
Sampled Population	3,300	3,300	501
Sampled Area	330	330	
No. of Questionnaires Returned	1,389	1,356	383
Return Rate	42.10%	41.40%	76.40%
No. of Valid Responses	1,203	1,203	364
Valid Response Rate	36.50%	36.50%	72.70%
Population		2,757,495	
Respondent Rate		0.12%	

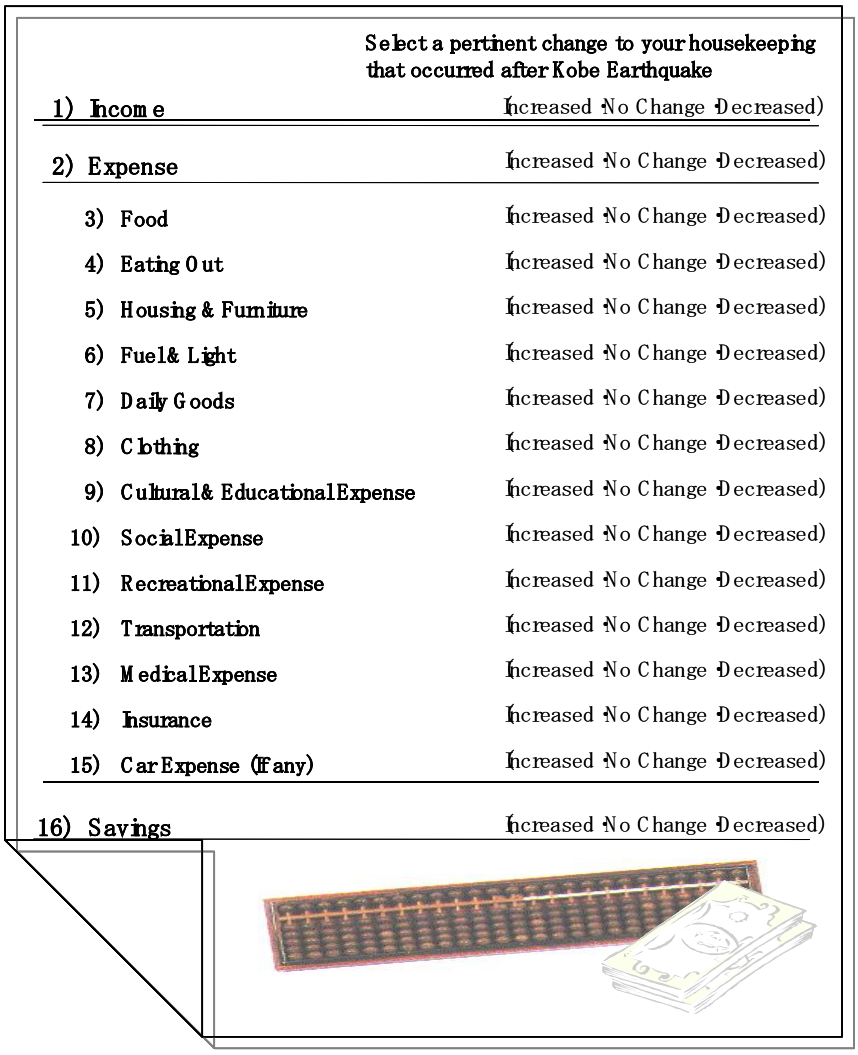

Figure 1: Questions about Household Economic/Financial Situation

furniture, fuel and light, daily goods, clothing, cultural and educational, social, recreational transportation, medical, insurance and car, and asked them to select a pertinent change from the same three options. (figure 1)

RESULTS AND DISCUSSION

Comparison of "income, expenses and deposits and savings" in 2001 and 2003 (figure 2)

The survey of 2003 showed almost no difference as to deposits and savings when compared with the survey in 2001, however it was revealed that as to income and expenses, many responded that their incomes were reduced, but their expenses were also reduced. With decreased income, they reduced their expenses rather than breaking down their deposits and savings to maintain their domestic economy. When we examine the relationship between the general trends and building damage in the survey of 2001, it revealed that among those who suffered more severe building damage, many reduced their income, while increasing expenses, with decreasing deposits and savings. When we examined whether the similar trend existed in 2003, many of those who suffered significant building damage replied that had they reduced income, deposits and savings. However, the numbers decreased when compared to that of 2001. As to expenses, there was no particular trend depending on the extent of their building damage.

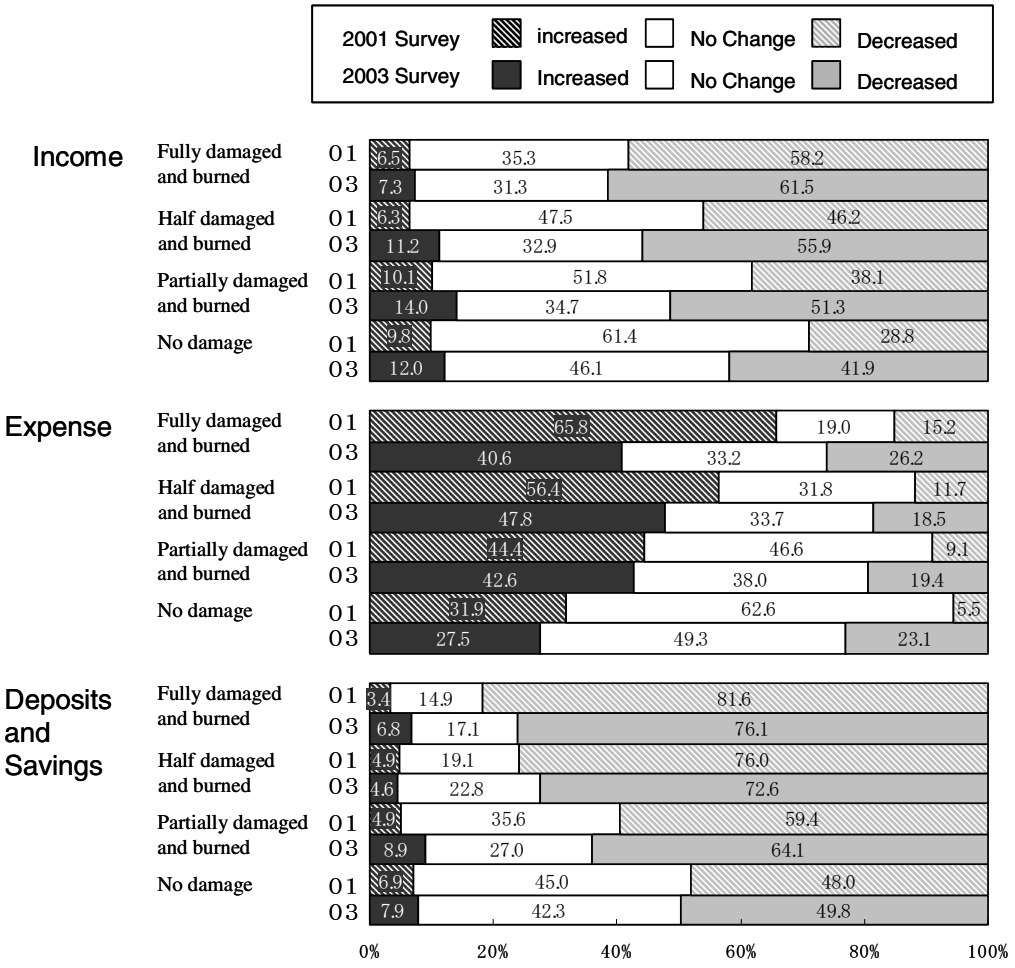

Figure 2: Comparison of “income, expenses and deposits and savings” in 2001 and 2003

Three types of expense details in 2001 (figure 3)
The main factor that defined the realities of households account in 2001 was the extent of building damage of the victims. To investigate these realities in detail, we examined 12 items of expenses (As to "car expenses", not all those polled own their cars, and number of reply was only 69% of the overall reply, so we have excluded it from the object of our analysis). When we performed cluster analysis on the trend of responses as to expenses details by extent of building damage, three patterns were revealed. We examined each pattern, and named those patterns as "just keep on growing type", "contriving type" and "cut down only type". The pertinent graph on the 12 expense items made for each building damage level is attached to each cluster.

"Just keep on growing type"
"Housing and furniture expenses" and "medical expenses "insurance" fell under this heading. A feature of these items is that they could not be reduced at people's personal disposition even though their incomes were reduced and they were forced into worse circumstances, because the extent of building damage was severe. Items such as "housing and furniture expenses" that became more important for repair and reconstruction in proportion to the seriousness of building loss and damage, are expenses necessary to provide safety in their lives, and such expenses could not be reduced at their discretion.

"Contriving type"
"Contriving type" was further classified into three types. They were: "in spite of effort for contriving, it increased" pattern; "with contriving, many had decreased expenses" pattern; and "number of increased and the number of decreased are almost equally matched" pattern. "Fuel and light expenses" and "transportation expenses" matched "in spite of effort for contriving, it increased" pattern. "Cultural and educational expenses" and "clothing expenses" fell under "with contriving, many had decreased expenses" pattern. "Food expenses" "daily goods" and "social expenses" fell under "almost equally matched" pattern.

"Cut down only type"
"Expenses for eating out" and "recreational expenses" belonged to the "cut down only type". Many people discontinued or gave up these activities when their incomes decreased. This was because that these items were easier to curtail in their daily life. These are expense items for important activities that might enrich the lives of the victims. The fact that many victims reduced these expenses revealed that significant damage to their buildings forced the victims to live in a less well-off fashion and it was revealed that many of the victims are still living in reduced circumstances, and they are yet to recover from the earthquake disaster.

Change of expense details in 2003
As to expenses, we classified them into twelve items: food, eating out, housing and furniture, fuel and light, daily goods, clothing, cultural and educational, social, recreational, transportation,, medical, and insurance, to make the same analysis as that of 2001 and examined their relationship with building damage.

Since the two years from 2001, there was no change in the trend of basic expenses. However, we found some changes in several patterns (Figure 4, right). We found three types that have changed expense pattern toward "decreasing". 1) Insurance changed from "just keep on growing type" to "contriving type with rather increased expense", 2) "Transportation expenses" changed from "contriving type with rather increased expense" to "contriving type with main focus on decrease" and three food expenses and daily goods expense from the "contriving type" to "contriving type with main focus on decrease". Thus, they have reduced their expenses for a total of five items as shown in the survey in 2003 compared with those

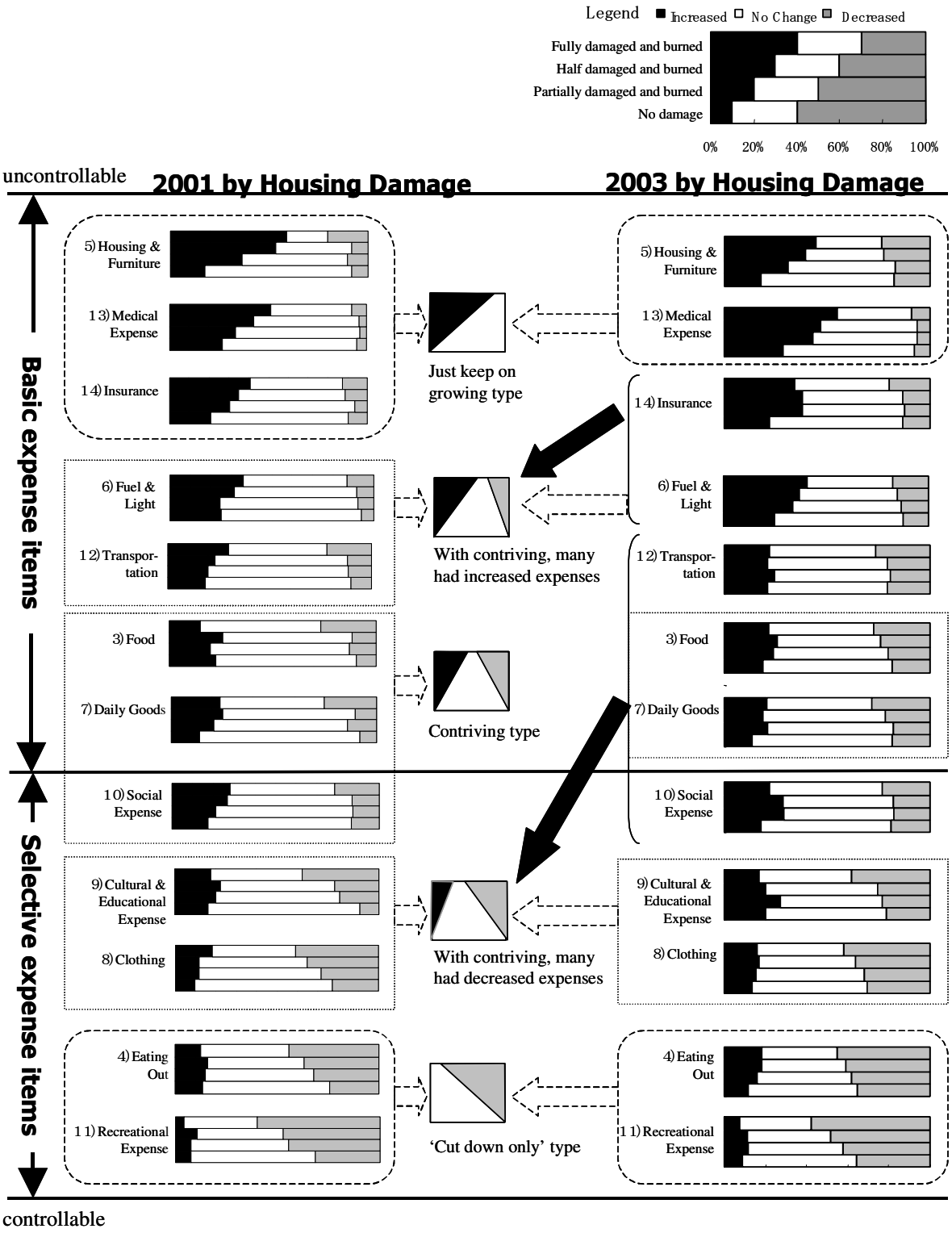

Figure 3: Change of expense details in 2001 and 2003

of 2001. The analysis revealed that, as a whole, the victims are still in reduced circumstances, and this was a factor that decreased consumption as a result, and then stagnated business.

CONCLUSION

In our study, we analyzed "circumstances" items for the surveys in 2001 and 2003 made in the disaster area of the Great Hanshin Awaji Earthquake, in order to clarify the life recovery process of the victims.

An analysis of the survey of life recovery made in 2001 revealed two facts. 1) The more severe the building damage, the more reduced their incomes, while their expenses were increased, which then reduced their deposits and savings. It suggested that building damage increased expenses, while their incomes were decreased due to influence of the disaster, and those people covered the balance with deposits and savings to maintain their domestic economy. 2) When we examined the relationship between the expenses details and the extent of building damage, three significant patterns were revealed. The consumption patterns of those expenses details, generally matched with classification patterns of "basic expense items" and "selective expense items".

Analysis of the 2003 survey revealed that, 1) there was no change as to income, expenses and deposits and savings. However it suggested that for many people, their incomes and expenses reduced and to compensate for the decreased portion, they have reduced expenses rather than breaking down their deposits and savings to balance their domestic economy. 2) As to income, deposits and savings, those who suffered more severe building damage replied that they had reduced their income, deposits and savings; the trend became less significant when compared with 2001. As to expenses, there were no significant trends of expenses of victims depending on the extent of their building damage. 3) After two years, there was no changes in the trend of basic expenses, however, the victims further reduced expenses for some items.

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