Activity and well-being in the elderly
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6 Summary and discussion

The present study focused on two topics in particular: activity patterns in the elderly and the relationship of such patterns with subjective well-being. The aim of this last chapter is to evaluate the contribution of this study to the existing body of knowledge, specifically regarding the two research questions corresponding with these topics. In section 6.1, the (background of the) research questions, the way they were answered and the main results and conclusions will be summarized. In section 6.2, the current study will be reflected on in a broader sense. First some remarks on the procedures and methodology will be made (section 6.2.1). Second, scientific implications will be discussed by placing results in the context of past, present and future research (section 6.2.2). Finally, the implications of the results for government policies, particularly with respect to the aim to stimulate elderly people to be as active as possible, will be discussed.

6.1 Summary

In the first chapter of this book, the purpose of the present study was explicated and translated into two central research questions. It is established that in the last two decades, there has been an increased interest in the time spending of elderly people and the relationship between activity patterns and subjective well-being. Several empirical studies show that, with respect to activities other than those necessary to survive (i.e., 'discretionary' activities), later age cohorts generally have more active time spending patterns than earlier ones. Structural changes in life-styles and life circumstances, including early retirement and increased life expectancy, have led to increased activity rates in the elderly population in Western European countries. Running parallel with these changes, government policies in nearly all Western European countries now betray an 'Activating Elderly People' perspective. Dutch government policies are also explicitly aimed at stimulating elderly to participate actively in society. Against the background of the attention and energy invested in activating elderly people, is the necessity of having detailed knowledge of their activity patterns and the relationship of those patterns with subjective well-being. A review of the available literature on the activity patterns of elderly people leads to two conclusions in particular. First, the descriptions of activity patterns...
usually differentiate for age and gender and sometimes for physical functioning, while it seems logical that marital state, financial resources and former occupation should also be strongly associated with opportunities to engage in activities. Second, activity engagement is only described in objective terms like the frequency of participation. However, given the fact that elderly people are stimulated to participate actively in all kinds of activities, it is most relevant to study subjective aspects of activity participation too, such as the value people attach to activities. These conclusions led to the formulation of the first research question:

1. How do participation in and subjective value attached to activities differ between elderly, differentiated for age, gender, marital status, physical functioning, financial status and occupational status?

A review of empirical studies on the relationship between activity and subjective well-being in later life led to the conclusion that higher activity levels in the elderly are not necessarily associated with higher well-being. Some people seem to be relatively happy while their activity level is low and vice versa. Furthermore, the strength of the association seems to depend on the type of activity and the subpopulation of elderly participants. Based on these conclusions, the second research question was formulated:

2. In which circumstances is activity in the elderly related to subjective well-being, and in which circumstances is it not?

The second chapter discussed theories on the relationship between activity and subjective well-being in the elderly. This topic has been studied in two fields of research in particular: in social gerontology and in leisure research. A review of the literature of these two fields led to the following conclusions. First, although the empirical studies described in chapter one clearly showed the relevance of including personal background characteristics like socio-economic status, marital status, and health condition, no theory was found that actually incorporated such factors into the explanation of the relationship between activity and well-being. Second, leisure studies emphasize the importance of
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distinguishing different types of activities. An associated topic concerns the substitutability of activities, which refers to the idea that activities with certain characteristics can, if restricting circumstances are encountered, be replaced with others with comparable characteristics. Third, leisure research draws attention to the possible importance of the subjective value of activities in explaining how activity participation is associated with subjective well-being.

Following these insights it was decided to approach the second central research question in this study in two ways. In the first, the insight that the subjective experience of activities can be used to determine which activities are most strongly related to well-being, is further developed. Since previous studies using this approach in fact used elderly people's subjective 'theories' on the significance of activities as a starting point, this approach was labelled the 'lay approach'. However helpful this lay approach may turn out to be, it cannot explain how personal background characteristics influence the relationship between activity and well-being. An approach that does explain this is the theory of social production functions. This theory formed the second approach to the (second) research question.

The lay approach

The lay approach explicitly assumes that people themselves know best which activities contribute more and which less to their own well-being. In dividing their time over activities, people are thought to aim towards spending as much time as possible on the activities they value most. Whether they succeed in this, however, depends on their particular circumstances. It is assumed that the more time spent on valued activities, the higher the level of well-being.

A translation of the reasoning of the lay approach into a testable hypothesis can take two directions: one pertained to the absolute time spent on valued activities as a starting point and the other assumed the best approach to be the proportion of time spent on these activities. Since the lay approach does not distinguish between these two possibilities, it was decided to test both with the following hypotheses:

H01a The more time spent on valued activities, the higher the level of subjective well-being.
Ho1b The larger the proportion of time spent on valued activities, the higher the level of subjective well-being.

The social production function approach
In the social production function theory, people are assumed to 'produce' their own well-being by striving for certain, hierarchically ordered, goals. The upper three levels in the hierarchy of goals are thought to be of such a general nature that they apply to human beings everywhere. Subjective well-being is at the top of the hierarchy, and can be maximized by optimizing two lower level goals: physical well-being and social approval (the second level). Two instrumental goals can then be distinguished for physical well-being, namely comfort and stimulation, and three for social approval, namely status, behavioural confirmation and affection (the third level). Comfort refers to a state where basic human needs are fulfilled, i.e., the absence of physical discomfort, such as hunger, thirst, fatigue, and pain. Stimulation refers to the extent to which an optimal level of interesting and challenging events is experienced. Status refers to social approval on the basis of relative command over scarce goods such as money, knowledge and power. Behavioural confirmation is produced by behaving in accordance with the customs and norms of a group of significant others. Finally, affection refers to what people get when they are involved in affective relationships, for example love, companionship, the feeling to be cared for. These five instrumental goals are referred to as first-order means of production. On lower levels, goals become more idiosyncratic. On these levels, three kinds of means of production are distinguished. Second-order means are direct means of production for one or more of the higher level instrumental goals. Two kinds are distinguished: activities and endowments. The individual performs certain activities, for example helping others, in order to produce behavioural confirmation. In contrast, an endowment is a means that does not require any activity to produce a goal, although it maybe the result of prior activity. An example is occupational prestige. Third-order means are necessary for executing activities and obtaining endowments, examples being time, money, and effort. Fourth-order means can be mobilized when changes in 'production capacity' require substitution. These resources are analogous to credits or savings.

An important part of the theory concerns the assumption of
substitutability. The availability of resources leads to a weighing of the costs and benefits involved with different pathways leading to higher level goals, with those alternatives leading to the highest net production being chosen. The term 'social production function' refers to the specific way that higher level goals are linked with lower level goals.

Besides applying the social production function approach to the second research question a hypothesis was formulated to test one of its important theoretical assumptions. Due to the assumption of substitutability, production functions for well-being may be expected to differ considerably from one elderly person to the next. Although some people will reach relatively low levels of some first-order goals, the sum of these levels finally determines the produced level of subjective well-being. The higher this sum, the higher the level of subjective well-being.

This reasoning can explain why an important premise of the activity theory of aging, namely 'the more activity, the higher well-being' will not always hold. In the first place, next to activities, other instruments, such as endowments, can be used to produce well-being. In the second place, some activities are more multifunctional than others, i.e., can achieve more goals at the same time. If an elderly person engages in a few very multifunctional activities, his general activity level will be relatively low, but the produced level of well-being relatively high. The following hypothesis is formulated:

\(H_0^2: \text{Regardless of general activity levels, the higher the sum of levels of comfort, stimulation, status, affection, and behavioural confirmation, the higher the level of subjective well-being.}\)

An application of the social production function approach to the second research question comprised two steps: (1) determination of the second-order means of production available to elderly people to produce comfort, stimulation, status, behavioural confirmation and affection; (2) a clarification of the circumstances in which activities are related to well-being, and in which circumstances they are not.

With respect to the first step, two second-order means of production for comfort in the elderly could be distinguished: (1) good physical functioning (i.e., good health); and (2) (I)ADL-independence (i.e., the ability to take care of one's own personal and household care). Comfort
can, to a certain extent, be produced through activities: physical exercise may prevent a state of ill health and increase the chance of remaining (I)ADL-independent. Housekeeping activities will also increase the chances of the latter. Optimal stimulation is obtained by choosing an activity repertoire that provides a satisfying level of challenging and interesting activities, with the selection depending on the resources available.

Two second-order means of production for status could be distinguished: (1) the rung on the social ladder, and (2) life style. The first is determined on the basis of some one’s income and occupational prestige level, while the second refers to participation in certain activities or buying or owning certain things. During adulthood, the occupational and parental roles are important sources for the production of behavioural confirmation. These roles fade away when people grow older, and activities carried out in relatively formal contexts, such as social, civic or religious organizations, become alternative means of producing behavioural confirmation. Having a spouse is assumed to be the most important means of production for affection. This ‘basic’ level can be raised by engaging in social activities with members of the social network, such as children, friends, and family.

These second-order means of production comprise both endowments and activities. A good health and (I)ADL-independence can be seen as endowments for comfort at a particular moment in time. The basic comfort level can be raised by activities like physical exercise and housekeeping. Activities are the most important second-order means of production for stimulation and behavioural confirmation. As a means of production for status, level of income and occupational prestige can be taken as endowments. The basic level of status reached by these means can be increased with activities that mirror a life-style in accordance with ones status. The presence of a spouse can be taken as an endowment for the production of affect. The basic level can be further enlarged by engaging in social activities with other members of the social network.

The second step concerned the clarification of the circumstances in which activities are related to well-being, and in which circumstances they are not. To put the question differently: why are activities relevant production means for some elderly and not for others? The answer to
this question was sought by inspecting the costs and benefits involved with the activities and endowments that were defined as second-order means of production. The former involve more ‘costs’, namely the effort of participation before actually leading to the production of well-being. Given the assumption that people will choose those means of production with the lowest costs to benefits, people possessing endowments (in this study: a spouse, good physical functioning, high financial and occupational levels) will have less desire to produce well-being through activities. Not having endowments will necessitate the use of activities as means to produce well-being. Ironically, the presence of a spouse, the level of physical functioning and the income level are also third-order resources, required for the execution of activities. Because of this ‘double-role’ of important resources for well-being, it is expected that the maximal association between activity and well-being lies somewhere between a total lack of and a total availability of resources (i.e., a ‘moderate’ level of resources). On the one hand, a certain lack of ‘low effort’ second-order resources (i.e., endowments) is required in order to create a need for activities as means of production (i.e., a ‘necessity’ effect), but on the other hand, sufficient third-order resources must be available to be able to engage in activities (i.e., an ‘opportunity’ effect).

Next to situations with a ‘moderate’ level of resources, also situations where elderly people have an almost total absence of resources and situations where elderly have almost all resources at their disposal can be distinguished. It is argued that, when these three situations are compared, the association between activity and well-being will be lowest in the last situation and moderate in the second. Two closely related hypotheses were formulated:

H03a: The association between activity and well-being is strongest for a moderate level of resources.

H03b: In situations where all resources are lacking, the association between activity and well-being will be low, and in situations where all resources are available, the association will be lowest.

The third chapter described methodological aspects of the study, which was carried out in the context of the Groningen Longitudinal Aging
Study (GLAS). The GLAS-source population consists of 8723 elderly aged 57 and older on January 1, 1993, who were taken from the patient panels of 27 general practitioners participating in the Morbidity Registration Network Groningen (RNG). Useful baseline data are available for 5279 subjects. This study used 4792 of the 5279 elderly. They received home interviews and completed a written questionnaire that was left behind and returned by mail. Subjects were aged 57 years and older, lived independently or in adapted housing for the elderly, in the northern part of the Netherlands. Only marginal differences can be found on gender and age when GLAS-participants are compared with the Dutch population of 60 +. A comparison of responders and non-responders revealed that non-response was not random but associated with gender. Differences with respect to morbidity are only marginal.

The central dependent and independent variables of this study were operationalized. Distinguished are background variables and subjective well-being, time spending and associated variables, and a sumscore of the first-order resources for the production of well-being.

The last part of chapter 3 described a 1994 study (N=92) on the psychometric properties of the Time Spending Pattern Questionnaire (TSPQ), which was used to measure aspects of time use. On the basis of this study, decisions were made about the way time use data could and would be used.

The first research question was explored in chapter four. For this purpose, three aspects of activity, namely the general activity level, participation in activity domains, and the subjective value attached to activities, were described for subpopulations of elderly differentiated for age, gender, marital state, physical functioning level, and financial and occupational levels respectively. Both univariate (chi-square) and multivariate (multiple linear and logistic regression) analyses were performed. In addition, it was investigated whether patterns existed between background variables and participation in specific activities. The latter was investigated by means of canonical correlation analysis. Generally speaking, gender, age and physical functioning especially differentiated the examined aspects of activity. Although a differentiation for marital status, financial and occupational levels did lead to results worth mentioning, their overall impact can be considered as less than the other factors mentioned. The results were discussed per
differentiating factor. Some of the findings are summarized as follows. It was found that women participate in a larger diversity of activities than men. Higher age appeared to be firmly associated with low general activity and lower participation rates in a considerable number of domains, a finding that was sustained even when the effects of other background variables were controlled. Furthermore, higher age was associated with a higher proportion of elderly that attached value to activities. Some explanations for these findings were discussed. With respect to marital status, a remarkable finding was the low general activity levels of single and widowed men, which were the consequence of low participation rates in several activity domains. Single men especially reveal low participation rates in activities involving social contacts. Next to these findings, results were discussed concerning physical functioning, financial and occupational levels. With respect to the search for activity patterns, five components were found, of which the first three can be considered most important. It is remarkable that, although all kinds of patterns could have emerged, these three mostly pertain to low resource elderly with activity patterns are characterized more by the activities they do not engage in, than those they do engage in.

In chapter five, the empirical investigation of the second research question was described. In which circumstances is activity related to subjective well-being, and in which circumstances isn't? Hypotheses derived from the lay approach and the social production function approach were tested, thereby investigating these approaches on their merits in answering this question. A test of the hypotheses associated with the lay approach did not only lead to non-confirmation of expectations, but even showed trends in the opposite direction: the time spent on activities that were not selected among the most significant six correlates positively and significantly with well-being, while both the time spent on most and moderately significant activities (respectively the activities 1 to 3 and 4 to 6 in order of significance) revealed no significant association with well-being (Ho1a). When the proportion of time spent on activities was taken as a starting point (Ho1b), this trend was even stronger: the proportions of time spent on both most and moderately significant activities revealed negative significant associations, while the proportion of time spent on activities not selected
as important revealed a positive significant relationship with well-being. On the basis of these results, both hypotheses 1a and 1b were rejected.

Two types of argumentation were discussed for the found results: (1) arguments pertaining to how the lay approach was operationalized and tested, and (2) arguments pertaining to structural characteristics of the lay approach itself. After some additional analyses, it was concluded that the results are not likely to be due to the way the lay approach was operationalized and tested. This being the case, it was concluded that basic properties of the lay approach underlie the results. Three arguments were discussed. First, the validity of the basic assumption underlying the lay approach, namely that people themselves know best which activities contribute more, and which less to their own well-being, was questioned. Second, perhaps people are not completely honest or open about the activities they perceive to be important for well-being (an argument referring to the mechanism of social desirability). A third argument was about how subjects may have interpreted the question regarding the most significant activities in their lives (Which activities are most important for you, and would you miss most if you were not able to do them anymore?). There is reason to believe that this way of asking elicits a selection of activities aimed at avoiding dependence on others, rather than being valued for well-being. To conclude, it is not sure which of these arguments, or perhaps combination of arguments, contributed most to our results. Whatever the case, the lay approach was concluded to be an unattractive approach to explore the relationship between activity and well-being.

Next, the hypotheses derived from the social production function theory were tested. Hypothesis 2, concerning a theoretical assumption of the theory, was tested and confirmed. Hypotheses 3a and 3b, which are related, concerned the actual application of the theory to research question 2. Hypothesis 3a expressed the expectation that the association between activity and well-being would be highest for elderly with 'moderate' levels of the resources the presence of a spouse, health, and income (the occupational level was excluded from the analyses). However, this moderate level could be operationalized in two ways: as the availability of some resources and the lack of others, or (2) as moderate levels of all resources. On the basis of the theory, neither of these alternatives had a clear theoretical advantage, so it was decided to
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test both. Furthermore, with respect to the first alternative, situations where one resource was lacking could be distinguished from situations where two were lacking. It was argued that in the latter situation a stronger association would be found between activity and well-being than in the former. Hypotheses 3a and 3b were thus specified as follows:

**Ho3a:** The strongest association between activity and subjective well-being will be found:

1. in situations where two out of three resources are lacking, followed by situations where one out of three is lacking.
2. in situations of moderate levels of all resources.

**Ho3b:** In situations where all resources are lacking, the association between activity and well-being will be low, and in situations where all resources are available, the association will be lowest.

In order to test hypotheses 3a and 3b, the strength of the association between activity and well-being was tested for significant differences in situations where elderly lack two out of three resources, one out of three resources, situations where all resources are lacking, and all resources are available. Indeed, the strongest association was found for elderly with two out of three resources lacking. However, the second strongest association was found for elderly lacking all resources and not for elderly lacking only one resource. This latter situation showed a comparable strength of association with the situation where all resources are at hand.

In order to test Ho3a and Ho3b, the strength of the association between activity and well-being was tested for significant differences in situations with moderate levels of all resources, with all resources lacking, and with all resources available. The largest association was found for elderly with all resources lacking, followed by elderly with all resources available. On the basis of these results, it was concluded that the reasoning expressed in hypotheses 3a and 3b can be largely accepted, while that of 3a2 and 3b must be rejected.

Besides distinguishing groups of elderly on the basis of the number of resources lacking, nine groups in which different types of resources are lacking were compared with respect to the strength of the association between activity and subjective well-being and the absolute
level of well-being obtained. These groups were further described in terms of age, gender, general activity level and occupational prestige level. A remarkable conclusion was that three out of four groups with the highest association between activity and well-being, also had the lowest absolute levels of well-being.

The results of applying the social production function theory to the second research question can be summarized by saying that the relatively strong unique contribution of general activity to well-being found in the total population of elderly, mainly concerns those elderly lacking other means of production for well-being. The general activity level of these 'low-resource' elderly is low and is characterized more by the activities they do not engage in, than the ones they do engage in. Although the unique contribution to well-being of the activities that these elderly engage in is relatively strong, the absolute outcome of the production process is low, i.e., their level of well-being is low.

It was concluded that people that most need to produce well-being with activities are least capable of using them as a means of production, since the necessary resources are lacking. Activities are substitutes that cannot completely compensate the lack of other second-order resources for well-being. Therefore, the use of activities as a means of production for well-being should be considered 'second-best' and cannot compare with what is produced with having a good health, a partner to live with, and, to a lesser extent, ample financial resources.

6.2 Discussion

6.2.1 Procedures and methodology: some remarks

Some remarks can be made with respect to procedural and methodological aspects of this study. The first and second remark are both related to the way subjects were sampled for the Groningen Longitudinal Aging Study (GLAS). As was mentioned in chapter three, the source population concerns all persons of 57+ (8723) that were in the patient panels of the 27 GP's that participated in the Registration Network Groningen (RNG) on January 1, 1993. Despite several advantages of this sampling-procedure, among which the high response rate, two disadvantages can be mentioned. The first concerns the representativeness of the research sample. Our source population came from the northern part of the Netherlands. Although the sample does not differ importantly from the general Dutch population of 60 + with
respect to age and gender, it is theoretically possible that differences in time spending do exist, when compared with highly urbanized regions in the west of our country.

The second remark concerns the assumption of independence of observations. Since the source population concerns all patients of 27 GP-panels, it can be expected that (the data provided by) subjects are in some ways related. For example, 55.8% of the N=4792 sample concerns couples, with both spouses being interviewed (although separately and on different occasions) for GLAS. Especially the measurement of ‘couple-companionate’ activities (for example entertainment activities) is probably interdependent in such cases. One could also think of certain neighbourhoods were several activities for aged people are organized, while in others this is not the case. Since patients in specific GP-panels usually share their neighbourhood, also here the independence of observations cannot be guaranteed completely.

Next, two remarks can be made about the measure of the subjective value of activities. In the first place, the interpretation can be mentioned. With our question: "Which of these activities are most important for you, and would you miss most if you were not able to do them any more", the aim was to determine those activities that elderly people perceive to be the most relevant contributors to their well-being. However, a test of the lay approach, that is based on these measures, led us to question the way the results should be interpreted (see section 5.1). There is reason to believe that one or more of the following factors led to unintended answers: (1) people’s perceptions of significant activities did not coincide with the activities that actually contribute strongly to their well-being, (2) people strongly interpreted the question as ‘relevant activities to avoid dependence on others’, (3) people were not completely honest in answering the question, due to mechanisms of social desirability. If we assume that each of these arguments is valid to some extent, the best way to interpret the results would be that the activities mentioned as valuable are (1) perceived to be important, but the actual association with well-being is uncertain, (2) perceived to be relevant in order to avoid dependence and institutionalization, and (3) perceived to be socially acceptable.

The second remark regarding the measure of the subjective value of activities is that it was restricted to frequently (weekly) conducted activities only. This decision was made to minimize the burden for the
elderly subjects. However, it might also be relevant to know how individuals that participate less frequent, or not at all, subjectively value activities.

The third point for discussion concerns the fact that our study is based on a cross-sectional design. As argued in the first chapter of this book, differences exist with respect to the activity levels of earlier and later age-cohorts. Therefore some of differences found, for example concerning different age categories, may be biased by cohort-effects. In order to reduce the chance of incorrect conclusions, findings that were expected to be biased were interpreted in the context of the cross-sectional design wherever possible. A finding of the 'Baltimore Longitudinal Study of Aging', in which Verbrugge, Gruber-Baldini and Fozard (1996) studied age differences and age changes in activities between younger, middle-aged and older people, places the risk of biased results due to the use of cross-sectional data in perspective. In this study, 1816 subjects were interviewed every two years in the period from 1958 to 1992, enabling a detailed analysis of activity patterns. An important finding of this study was that with respect to time spending in the elderly, longitudinal changes as individuals aged were largely found to mirror cross-sectional age differences.

The last point of discussion deals with the fact that a central dependent variable in this study, namely subjective well-being, was measured using a one-item instrument, namely Cantril's ladder (Cantril, 1965). Veenhoven (1984) compared several measures that claim to assess 'overall happiness', a concept that can be considered equivalent to our operationalization of subjective well-being. Measures were compared with respect to their 'face-validity', this is, their questions and associated instructions and procedures. In his opinion, questions referring to the appreciation of life-as-a-whole, as with Cantril's ladder, are preferable to questions using the keywords happiness or well-being. He concluded that Cantril's ladder had a high face-validity.

6.2.2 Scientific implications of the study

To what extent are purposes fulfilled?

The aim of the first research question of this study (see section 6.1), was to contribute to existing knowledge in two ways in particular: (1) by differentiating activity patterns for marital status, physical functioning, financial and occupational status, as well as to age and gender which
was usually done in previous studies, and (2) to investigate the subjective value that subpopulations of elderly attach to different activities. Indeed, a differentiation for marital status, physical functioning, financial and occupational status formed a relevant supplement to the usual description of activity patterns in the elderly for age and gender only. As expected, physical functioning, next to age, was a very restrictive factor regarding the opportunities for activity participation in the elderly. Differentiations for marital status, financial and occupational levels also yielded relevant differences between subpopulations of elderly, although the impact of these factors could be considered less strong than that of age, gender and physical functioning. With respect to marital status, a relevant remark for future research is that a simple bipolar distinction into elderly being either 'with a partner' or 'alone' neglects important differences between elderly that are widowed, divorced or single. With respect to participation in activities, divorced elderly often resembled married elderly more than single or widowed peers.

Information on the subjective value of activities was not provided by any previous Dutch study before. Results are therefore a relevant supplement to existing knowledge. However, as was discussed in detail in sections 5.1 and 6.2.1., it appears to be difficult to measure subjective value in a reliable and valid way. Therefore, although relevant, a procedure to do this effectively must still be developed.

The second question of our study (see section 6.1) was formulated because the general assumption that apparently underlies the 'Activating Elderly People' perspective dominating government policies in many Western European countries, namely 'the more activity, the more well-being', seemed in need of refining. A review of theories and associated empirical research in social gerontological and leisure research led to the insight that there are at least four important aspects to further investigate with respect to the relationship between activity and well-being. These are (1) including person-related factors like socio-economic status, marital status and health condition in the explanation of the relationship between activity and well-being, (2) the importance of distinguishing different types of activities, (3) the substitutability of activities, and (4) considering the subjective experience of activities in the explanation of how participation is associated with well-being.

With these aspects in mind, it was decided to investigate the second
research question in two ways, from the lay approach, and from the social production function approach. Two points to be discussed can be distinguished. The first concerns an investigation of which of these two approaches appeared the best tool to explicate the circumstances in which activity is related to well-being. The second point concerns the actual information yielded by the application of these approaches to our problem. This information has implications for government policies to activate elderly people. The latter point will be discussed in the next section (6.2.3). The former is discussed below.

A comparison of the usefulness of the lay approach and social production function approach as instruments to answer our research question, led to a conclusion in favour of the latter approach. An important difference between these approaches is that the lay approach is based on peoples subjective ‘theories’ on which activities are most important to well-being, while in the social production function approach the factors and mechanisms that lead to well-being are based on assumptions derived from scientific theory. It is precisely this difference that has led to doubts on the usefulness of the lay approach for our purposes; we weren’t convinced whether directly asking elderly people what is important for them led to answers that could be used to reveal the circumstances in which activity is most strongly related to well-being.

A further advantage of the social production function approach is that it is a theory of well-being for human beings in general. The fact that its framework is not limited to the relationship between activity and well-being makes it possible to relate both background and activity variables to subjective well-being. Because the mechanisms that lead activities to be used (or not) as production means for well-being are explicated, it is possible to predict the circumstances with the strongest relationship between activity and well-being. In applying the social production function approach to our research problem, these predictions were translated into hypotheses. Contrary to those derived from the lay approach, these hypotheses could largely be confirmed. On the basis of these arguments it can therefore be concluded that it is advantageous to use a theory based on scientific assumptions of human behaviour to study the relationship between activity and well-being in later life, rather than the empirical assessment of subjective preferences.
Future research on the relationship between activity and well-being

When the four aspects above (see also section 2.1.3) and their potential to create relevant new approaches to explore the relationship between activity and well-being are considered, we can conclude that two of them were not (fully) investigated in this study: (1) the differentiation for activity types and (2) the extent that different activities substitute each other (i.e., their substitutability). Although participation levels in and value attached to different activity types in subpopulations of elderly were described in detail, we did not focus on differences between activity types in our explanation of the relationship between activity and well-being. Instead, the variable ‘general activity’ was used as an overall measure of activity in the elderly. Furthermore, although addressed at the level of resources, the substitutability of individual activities was not discussed.

The social production function theory offers a framework to study these two aspects. In 1995, a team of experts on the social production function theory explored, by means of discussion, the possibilities of determining the production profiles and production capacities of activities. The conclusions were as follows: A system must be developed, consisting of an elaborate set of rules, with which the production profiles and production capacities of activities can be determined. This requires precise definitions of the distinguished first-order means of production (i.e., comfort, stimulation, affection, behavioural confirmation, and status). Although the definitions described in this book and elsewhere, offer sufficient detail to explore a large number of research problems, the assessment of properties of activities demand even greater detail. The system of rules should take the following aspects into account. First, activities may differ with regard to the number of goals reached by engaging in them, that is, they may be either uni- or multifunctional. A similar aspect concerns the specific goals reached and the relative contributions (i.e., weights) of these goals to the process of producing well-being. An aspect that has to be taken into account when weights are determined is that activities can either lead to the direct production of one or more goals, but can sometimes be an investment activity towards reaching future goals as well (see also Ormel, Lindenberg, Steverink, Verbrugge, submitted for publication; Ormel, Lindenberg, Steverink, VonKorff, 1996).

As can be concluded from the arguments above, the development of a
system of assessing activities on their properties is a complicated but challenging task. However, once such a system has been developed, the substitutability of activities can be studied. Access to detailed information on the production profiles and power of activities opens up the possibility of determining which activities may be possible substitutes for each other, and in which circumstances. In the elderly especially, this can be considered a relevant topic. After all, for most people, growing older means being confronted with losses of different kinds, for example health, income and loved ones. Consequently, the use of important activities as a means of production will become restricted, or impossible altogether. Knowledge of production profiles and power of different activities will enable to determine which activities may substitute lost activities.

Although not (specially) devoted to the subpopulation of elderly, the idea of substitutability of recreational activities in the field of leisure research has prompted a series of investigations yielding leisure typologies, implying easy exchanges between activities in distinct categories, since their properties are assumed to be similar or comparable. These studies have two things in common. First, the measures serving as criteria for categorization relate to subjective experiences of activities, such as the needs they satisfy (e.g., Tinsley, Teaff, Colbs and Kaufman, 1985), satisfactions (e.g., Hawes, 1978), preferences (e.g., Chase and Cheek, 1979) and perceived similarity (e.g., Becker, 1976). Second, the categories of substitutable activities have typically been generated empirically by factor or cluster analytic methods. The disadvantages associated with using people’s subjective experiences of activities were discussed elaborately with respect to the lay approach in sections 5.1 and 6.2.1. Furthermore, the empirical determination of typologies on the basis of such subjective experiences has the additional problem that they depend on the type and number of activities used, and the subpopulations of people that make up the research sample. This problem was noted by other authors in leisure research as well (Manfredo and Anderson, 1987; Mobily, Lemke and Gisin, 1991; Vaske, Donnelly and Tweed, 1983). We therefore suggest that a determination of properties of activities in relation to their substitutability should be based on solid theoretical assumptions, for example the theoretical framework of the social production function approach. Empirical research can then be used to evaluate and adjust
the assumptions on the production profiles and productive power of activities.

With respect to both theory and empirical research, the idea of the substitutability of activities is still in its infancy. Although the idea may be relevant for elderly people, the possibility that it does not work should also be considered. One topic that merits investigation is the question whether properties of activities are stable for different persons. On the basis of the social production function theory, it can be assumed that differences in encountered restrictions will lead to different opportunities to use specific activities as production means in different circumstances. However, if one stabilizes these restrictive circumstances and compares people in more or less equal opportunity situations, will a specific activity have the same profile and productive power from one person to the next? In other words, it cannot be denied beforehand that the meaning of activities may vary per person. The question then becomes to what extent it is possible to arrive at a classification system of activities, that applies to sufficiently large numbers of elderly to make its use relevant.

Furthermore, as mentioned earlier, some authors expected that the elderly would not engage in many new activities, but would instead intensify engagement in familiar activities (e.g., Atchley, 1989; Knulst, 1996). If this is true, it can be expected that elderly people substitute lost activities only in frequency among the other familiar activities. The persistent finding of decreased activity in many domains in the higher age categories seems to confirm this expectation. As was argued, however, it is unclear as yet to what extent these findings are due to sociocultural expectations, which encourage elderly to disengage and lower their standards concerning the (quality of) activity participation. Therefore the idea of activity substitutability is worth developing, both with regard to solid theory as with regard to empirical research.

A final issue that can be mentioned with respect to future research on the relationship between activity and well-being, concerns incorporating the characteristics of the environment in which activity takes place. In our study, we limited ourselves to certain proxy’s for the environment, such as having a partner, health, and financial resources. However, human action is of course shaped by the opportunities created by the 'field of action' as well. In the case of activity participation, the most obvious thing to think of are opportunities offered by the
community. To what extent are facilities present locally, for elderly people to engage in, for example, physical exercise, educational activities, or entertainment activities? Future research could refine the explanation of the relationship between activity and well-being in the elderly by including such factors.

6.2.3 Policy implications

An important reason for conducting the present study was the aim of government policies to stimulate elderly people to be as active as possible. Tokarski (1993) refers to this as the 'Activating Elderly People' perspective in Europe. Indeed, this perspective dominates Dutch government policies as well, where participation in paid work, politics, non-political organizations, consumptive participation (i.e., making use of social, cultural and recreative facilities), informal and family relations, physical activities, and permanent education are assumed to have a favourable effect on the physical and mental well-being of the elderly.

Four reasons were considered to underlie this general aim to activate the elderly. In short these are: (1) the increased chance that elderly won't resort to health care facilities and social security, (2) their growing numbers in the electorate, (3) the necessity of rearranging social tasks and (4) elderly people's wish to contribute actively to shaping society. An inspection of these reasons leaves us with the impression that the aim to activate elderly people is at least partly based on the political and economic need for elderly to participate in society. It can therefore be concluded that these reasons are not solely dedicated to the well-being of elderly people, but incorporate government interests as well.

One aim of this study was to investigate the validity of the assumption that high activity levels are associated with high levels of subjective well-being in the elderly. The findings of this study clearly show the necessity of placing the general aim to activate elderly people in perspective. Activity is an important contributor to well-being only when two or more of the resources of having a good health, a partner to live with, and financial resources are lacking. If only one or none of these resources is lacking, the contribution of activities to subjective well-being is only marginal. Activity in the elderly should therefore be seen as 'second-best', compared to the contribution to well-being of having a good health, a partner to live with, and (to a lesser extent) financial resources.
Which implications do these findings have for policies toward the activation of elderly people? If the increase of subjective well-being of the elderly is taken as an objective, then policies should be focussed on those elderly in possession of the least resources. This lack of resources adversely affects the level of subjective well-being and is associated with a small range of activities available to increase well-being. Consequently, low-resource elderly usually show both low general activity levels and low levels of well-being. Therefore maximizing resources will lead to both a direct increase of well-being and an increase of the necessary resources to engage in activities.

Some examples may illustrate the double beneficial effect of maximizing resources. The first concerns the adverse effects of not having financial resources. Low income elderly were found to have much fewer opportunities to engage in entertainment and cultural activities, i.e., to engage in pleasant activities outside the home. Furthermore, low financial resources are associated with a larger perceived threat of becoming dependent on others for personal and household care. For low income elderly, the opportunities to ‘buy’ help in this respect are more limited than for elderly in better financial positions. The experience of such a threat leads to a decreased level of subjective well-being (Steverink, 1996).

A second example concerns the earlier described beneficial effect of having a spouse. Having a spouse is known to be directly associated with higher levels of well-being, also as a consequence of the ‘protective’ function of the partner. The positive exchanges in the relationship are helpful in responding to adverse events and in preventing them from occurring in the first place. The beneficial effect of having a partner is also attributable to the fact that the presence of that person facilitates social interaction; many activities are ‘couple-companiote’, undertaken as a couple, with other couples (e.g., Dykstra, 1995). The latter is referred to as the ‘socially integrating’ function of a partner.

An ironic finding of this study is that elderly in possession of the highest level of resources for participation in activities also have the lowest need for activities as a means to increase their well-being. After all, for elderly who possess a good health, a partner to live with and financial resources, the simple fact of having these resources has already led to a relatively high level of well-being which can only be lifted into
a state of saturation by engaging in activities. This is ironic because, with respect to the government's need for the elderly to contribute actively to society, those that are needed most (i.e., the high-resource elderly), themselves benefit the least from activity participation in terms of increasing their well-being. If the subpopulation of elderly with relatively high resources is to be recruited in order to contribute to society's needs, other arguments than their increased well-being should be used. One argument that might be relevant is the fact that continued active participation may prevent a deterioration of physical and mental abilities. This is the view that activities are 'investment means of production', expressed as 'use-it-or-lose-it'.

From the government's point of view, the activity domains that can be considered most relevant for activating elderly people are those associated with engagement in political processes and the rearrangement of social tasks. As mentioned earlier in this book, these may include participation in politics and non-political organizations, (continued) engagement in paid work, organized formal and informal volunteer work. On the basis of this study, it can be concluded that the best compromise between the government's need for elderly to actively participate in these domains and elderly people's need to increase their well-being, can be found in those subpopulations of elderly with moderate resource levels. These elderly have a need to increase their well-being via activity participation, and at the same time, they have sufficient resources to be able to engage in them. Two subpopulations of elderly match this picture in particular: (1) elderly with a high level of physical functioning, but low financial resources and without a partner, and (2) elderly with medium levels of physical functioning and financial resources and without a partner. In these situations elderly can be expected to have the right balance between the need for activities to increase well-being and the possession of resources to engage in them.