Diak

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Economic analysis of active measures for those who are difficult to employ

– Cases: highest-level increased pay subsidy and rehabilitative work activity

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ABSTRACT

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The purpose of this study was to investigate the economic consequences of active labour market measures targeted for those who are difficult to employ; the study was conducted using the cases of rehabilitative work activity and the highest-level increased pay subsidy for third sector employers as test cases.

The active labour market policy measures selected as the objects of this study – pay subsidy and rehabilitative work activity – can be seen as social investments relating to active labour policy and active social policy, and aiming at improving the employability of the unemployed. Because both measures are intended for helping job-seekers that require a great deal of support and have several issues with their wellbeing and coping with life, both measures are geared, to a greater extent than other employment services, to social impacts and the strengthening of the participants' health, wellbeing and civil participation.

The method applied and also tested in the study – simple decision model – is founded on economic evaluation. The approach was developed and first applied in Great Britain for the evaluation of mental health promotion and

mental illness prevention activities, community capital-building initiatives and social care interventions. This approach enables at least a rough estimate of the economic consequences of measures even when the research data concerning their effectiveness is insufficient. In this approach, outcomes are expressed in terms of money where possible. This study did not try to assign monetary value to wellbeing but it estimated the cost savings in the utilisation of services due to increasing wellbeing.

According to the selected approach, in the first phase, we established an understanding on the basis of literature and expert cooperation concerning the pathways that produce the economic consequences of labour market measures. The study identified as many as four pathways: a) employment followed by unemployment benefits being replaced by wages, b) the clarification of the plans for the future of the unemployed and e.g. their starting in education, c) a reduction in the need for social and health services and in the respective costs due to increasing wellbeing, and d) improved everyday management, civil participation and active citizenship followed by wellbeing and benefits to the immediate community.

We obtained our data on the probability of employment and the costs and outcomes related to the highest-level increased pay subsidy and rehabilitative work activity from earlier research literature, statistics and labour administration experts. The utilisation of health services and the changes in it were analysed using the data from the study *Terveys 2011 (Health 2011)* by the National Institute for Health and Welfare (THL). Even though finalised research data were not available for all pathways, it was possible to populate the model and complete the calculations on the employment pathway and also partly on the wellbeing pathway, thereby testing the applicability of the model for the evaluation of the economic consequences of employment promotion measures. A separate evaluation was conducted to investigate the impacts of the measures on the distribution of such income transfer costs and wage costs that are associated with people's livelihood.

The benefits of the highest-level increased pay subsidy exceeded the costs while the costs of rehabilitative work activity exceeded the benefits. Our results can be considered as rough indicators of the economic consequences of the highest-level increased pay subsidy and rehabilitative work activity. The largest payer of employment promotion measures is the state, and the beneficiaries include municipalities and domestic households. If the time spent

on rehabilitative work activity is included in calculations as an opportunity cost, it changes the role of households from beneficiaries to payers. To obtain more specific information concerning the economic consequences of employment promotion measures, we must be able to distinguish between the outcomes of employment promotion measures and those of other factors. For purposes of economic evaluation, it is also necessary to systematise the registration and collection of data regarding employment promotion measures and their participants.

Keywords: economic evaluation, long-term unemployed people, outcomes, pay subsidy, rehabilitative work activity, wellbeing

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TIIVISTELMÄ

Tämän työn tavoitteena oli tutkia vaikeasti työllistyville suunnattujen aktivointitoimenpiteiden vaikutuksiin liittyviä taloudellisia seurauksia käyttämällä esimerkkeinä kuntouttavaa työtoimintaa ja korkeinta korotettua palkkatukea kolmannen sektorin työnantajille.

Tarkastelun kohteiksi valitut toimenpiteet - palkkatuki ja kuntouttava työtoiminta - voidaan nähdä aktiiviseen työvoimapolitiikkaan ja sosiaalipolitiikkaan liittyvinä sosiaalisina investointeina, joiden tavoitteena on työttömien työllistymisedellytysten parantaminen. Koska molemmat toimenpiteet on tarkoitettu paljon tukea tarvitseville työnhakijoille, joilla usein on myös hyvinvoinnin ja elämänhallinnan vajeita, ovat myös niiden painopisteet muita työvoimapalveluja vahvemmin sosiaalisissa vaikutuksissa, terveyden, hyvinvoinnin ja osallisuuden vahvistamisessa.

Tutkimuksessa käytetty ja samalla testattu menetelmä - yksinkertainen päätösmalli - perustuu taloudelliseen arviointiin. Lähestymistapaa on kehitetty ja käytetty mielenterveyttä edistävän toiminnan ja paikallisten hyvinvointihankkeiden sekä sosiaalipalvelujen arvioinnissa Isossa-Britanniassa. Lähestymistapa mahdollistaa ainakin karkean arvion vaikutuksiin liittyvistä taloudellisista seurauksista, vaikka tutkimusten tuottamaa vaikuttavuustietoa olisi puutteellisesti. Lähestymistavassa vaikutukset muutetaan mahdollisuuksien mukaan rahamääräisiksi. Tässä tutkimuksessa ei kuitenkaan

pyritty antamaan rahallista arvoa esimerkiksi hyvinvoinnille, vaan arvioitiin hyvinvoinnin lisääntymisestä aiheutuvia säästöjä palvelujen käytössä.

Lähestymistavan mukaisesti ensimmäisessä vaiheessa muodostettiin kirjallisuuden ja asiantuntijayhteistyön avulla ymmärrys työvoimapoliittisten toimenpiteiden taloudellisia seurauksia tuottavista poluista. Tutkimuksessa identifioitiin kaikkiaan neljä polkua: työllistyminen ja sitä seuraava työttömyysetuuksien korvautuminen palkalla, työttömänä olleen henkilön tulevaisuudensuunnitelmien selkiytyminen ja esimerkiksi koulutuksen aloittaminen, sosiaali- ja terveyspalvelujen tarpeen ja kustannusten väheneminen hyvinvoinnin ja terveyden lisääntymisen seurauksena sekä arjen hallinnan ja osallisuuden vahvistuminen ja aktiivinen kansalaisuus, josta seuraa hyvinvointia ja hyötyä lähiyhteisölle.

Korkeimpaan korotettuun palkkatukeen ja kuntouttavaan työtoimintaan liittyvät tiedot työllistymisen todennäköisyyksistä, kustannuksista ja vaikutuksista hankittiin aikaisemmasta tutkimuskirjallisuudesta, tilastoista sekä työvoimahallinnon asiantuntijoilta. Terveyspalvelujen käyttöä ja muutoksia analysoitiin Terveyden ja hyvinvoinnin laitoksen (THL) keräämän Terveys 2011 -tutkimuksen aineiston avulla. Vaikka kaikkiin polkuihin ei ollut saatavilla joko valmista tutkimustietoa tai aineistoja, pystyttiin malli "miehittämään" ja laskelmat suorittamaan työllistymis- ja osittain hyvinvointipolun osalta ja siten testaamaan mallin käytettävyyttä arvioitaessa työllistymistä edistävien toimenpiteiden taloudellisia seurauksia. Erikseen tarkasteltiin toimenpiteiden vaikutusta henkilön toimeentuloon liittyvien tulonsiirto- ja palkkakustannusten jakautumiseen.

Korkeimman korotetun palkkatuen hyödyt ylittivät kustannukset, kun taas kuntouttavan työtoiminnan kustannukset olivat suuremmat kuin hyödyt. Tuloksia voidaan pitää karkeina osoittimina korkeimman korotetun palkkatuen ja kuntouttavan työtoiminnan taloudellisista seurauksista. Työllistämistä edistävien toimenpiteiden suurimpana maksajana on valtio ja hyötyjinä kunnat sekä kotitaloudet. Kuntouttavaan työtoimintaan käytetyn ajan huomioiminen vaihtoehtoiskustannuksena muuttaa kotitalouksien roolin saajista maksajiksi. Tarkemman tiedon saamiseksi työllistymistä edistävien toimenpiteiden taloudellisista seurauksista on pystyttävä erottelemaan työllistämistoimenpiteen ja muiden tekijöiden vaikutukset sekä systematisoitava taloudellisessa arvioinnissa työllistymistä edistävistä toimenpiteistä ja niihin osallistujista tarvittavien tietojen rekisteröintiä ja keräämistä.

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PREFACE

The subject of this study was the economic consequences of employment-promotion measures for individuals who are not easily employable. Even though the primary goal of our sample cases, the highest-level increased pay subsidy and rehabilitative work activity, is employment, these measures also aim to promote the health and wellbeing of customers and to prevent their exclusion. In order to gain access to the open labour market – or any labour market – many people who are not easily employable require individual support and guidance, both of which are offered by these two measures. The study tested an evaluation model developed and trialled by British researchers, and it also produced rough estimates of the economic consequences of the highest-level increased pay subsidy and rehabilitative work activity. For these estimates to be made more precise, it is necessary to obtain more research data and more follow-up data concerning the outcomes of employment-promotion measures. This would enable a more extensive utilisation of economic consequence evaluations for verifying the financial feasibility of employment-promotion measures, for the development of employment measures, and for the planning of employment policies.

This study was conducted under the project *Worthwhile employment services – an evaluation of individual goals and economic consequences of labour policy measures.* The study was initiated through the cooperation of researchers and experts at the Karelian Institute of the University of Eastern Finland and those at Diaconia University of Applied Sciences, Research and Development Services for Social and Health Economics at Pieksämäki. The planning and implementation of the study were greatly facilitated by the cross-boundary cooperation of the North Karelia and South Savo Centres for Economic Development, Transport and the Environment (ELY Centres) and other employment organisations. We wish to thank researchers Arja Kurvinen and Arja Jolkkonen, both of the University of Eastern Finland and the Productive Employment Services Project; we also wish to thank our steering group, our development group, our liaisons at the North Karelian ELY Centre and at the TE Office as well as the experts in North Karelian and South Savo employment-promotion projects. The researchers also wish to thank the Department of Health and Social Management at the

1 INTRODUCTION

Several active labour market measures are available for overcoming prolonged unemployment. These measures have consequences – both economic and relating to people's wellbeing. The purpose of this study is to investigate the outcomes and economic consequences of labour market measures for the long-term unemployed using the cases of the highest-level increased pay subsidy for third sector employers as well as rehabilitative work activity. Another purpose of this study is to test a simple decision model for the evaluation of employment-promotion measures.

We can justify our choice of subject by the interdependence of social policies and labour market policies and the fact that the economic perspective of their interplay has gained more prominence lately. The subject is even more interesting due to the current critical social-political debate about labour market measures. The great number and the targets of labour market measures are under criticism together with the fact that many of these measures have been found not to have advanced people's employment in the open labour market at all. The question has been presented, to which degree should measures by the employment and economy administration be used, or to which degree could they be beneficial, for supporting the general wellbeing of the long-term unemployed if there is no hope of employment for them (e.g. Juvonen & Vehkasalo 2011, 91).

The test cases in this article are rehabilitative work activity and the highest-level increased pay subsidy, intended to promote the employment of those long-term unemployed who need a particularly great deal of support. Active labour market policies in Finland have narrowed in scope during

the past few decades, and today they focus on the supply of labour and the individual's personal responsibility (Koistinen 2014, 357). However, it has been found that hard measures that emphasise the individual's personal responsibility, such as sanctions related to unemployment benefits, work best for the individuals who are the most employable anyway. Furthermore, such measures may actually cause the deterioration of the condition of those people who already have accumulated wellbeing problems (e.g. Malmberg-Heimonen 2005; Juvonen & Vehkasalo 2011, 92; Vastamäki 2009, 97). The highest-level increased pay subsidy is meant for fixed-term employment relationships accompanied by personal support and counselling; appropriate jobs are often found in third sector organisations (Pitkäaikaistyöttömyyden hoitamisesta työvoimavarojen turvaamiseen 2011, 14. Name in English: From treating long-term unemployment to ensuring labour resources). The pay subsidy is interesting also because it is one of the few labour market measures targeting the demand of labour. Rehabilitative work activity is intended for receivers of the labour market subsidy or social assistance who are either long-term unemployed or not easily employable. Its purpose is to promote the employment of these groups in the open labour market while improving their possibilities of participation in training and other measures made available to them by the labour administration. Rehabilitative work activity is more of an active social policy measure than an employment policy measure for the long-term unemployed, and its employment policy goals actualise less frequently than do the social policy ones (Karjalainen & Karjalainen 2010, 3-7).

The highest-level increased pay subsidy and rehabilitative work activity can be seen as social investments through active social and labour policies. Mobilising the labour force and bringing such labour reserves into the labour market that would not find their way to the labour market on their own can be expected to bring community-related and personal benefits in terms of economy, civil participation and wellbeing. (See Sipilä 2011, 361.) According to earlier Finnish studies, the impact of pay subsidy on employment varies and is relatively minor (e.g. Terävä, Virtanen, Uusikylä & Köppä 2011, 88; Seppälä 2011, 64; TEM raportteja 7/2013, 24). In addition, the impact of rehabilitative work activity on employment is relatively minor (Karjalainen & Karjalainen 2010, 48; Klem 2013, 51). This study is based on the view that certain labour market measures may be significant in terms of social

and societal politics due to their effects on social participation and wellbeing even though their outcomes in terms of employment may be unconvincing (e.g. Malmberg-Heimonen 2005, 54; Juvonen & Vehkasalo 2011, 89).

Several studies have shown that being employed promotes people's wellbeing in many ways and, correspondingly, unemployment relates to the deterioration of their wellbeing. Both physical and mental wellbeing have been found to relate to employment. The unemployed tend to have an accumulation of problems relating to their health, economy and social wellbeing; physical illnesses and mental health problems. For example, psychological malaise and suicides are more common among the unemployed than among the employed. (Coutts, Stuckler & Cann 2014, 465-482; Kortteinen & Tuomikoski 1998, 13.) We can also find research results to show that unemployment causes the weakening of wellbeing and health, not only vice versa. For example, a study concerning a group of Swedish persons, recently unemployed due to the closing down of company operations, found that the risk of death among men increased by as much as 44% during the first year of unemployment, and the resulting increased mortality was related to alcohol and suicides (Eliason & Storrie 2007, 7). On the other hand, when we note other possible causes of poor health and mortality, the connection between mortality and unemployment becomes weaker. For example, the general employment situation seems to be significant for the interrelation of unemployment and mortality. (Martikainen, Mäki & Jäntti 2007, 1073; Lundin, Lundberg, Hallsten, Ottosson & Hemmingsson 2010, 24-27.) The evaluation study of the Paltamo Employment Model also detected signs of positive health and wellbeing outcomes due to employment (Kokko, Nenonen, Martelin & Koskinen 2013).

Hypotheses have been formulated concerning the interconnection of unemployment and weakened wellbeing, and a few studies into the matter are available. The two interconnecting factors that have been identified as major are the direct material causes and the indirect psychosocial causes. The first of these is related to economic hardship and certain associated factors such as problems in living and nourishment. The economic hardship caused by unemployment has its effects on people's health and wellbeing also through the way it limits their possibilities to be active. A person's psychosocial and social functioning status often reflects the person's isolation, loneliness and subjective experience of exclusion as well as the impression of being

socially excluded, all brought on by unemployment. Employment makes possible a time structure, social contacts, collective purpose, a status, activity and an identity. Not having these decreases the individual's wellbeing. In other words, it is not only paid work that is essential for the coping of the unemployed: it is also essential for individuals to have social relations and reasonable economic standards. (Jahoda 1982 in Coutts, Stuckler & Cann 2014, 465-482.)

On the basis of the above, we may believe that employment relationships and activities made possible by employment services and social services as well as by income transfers together make it possible for customers to become party to the social and psychosocial dimensions of paid work, thereby improving their wellbeing and health, particularly mental health and social functioning capability. If wellbeing increases, we may assume that social and health care utilisation related to wellbeing problems will decrease. When estimating the decrease, we should remember that differences exist in the utilisation of these services particularly between different social groups, and that cumulative hardship is connected to the under-utilisation of health and social services and to the under-utilisation of income transfers (e.g. Keskimäki & Alha 2006, 50; Kuivalainen 2007; Klavus 2010, 34). Such under-utilisation may rebound and cause an increased need for these services later. Use of services is also associated with service system itself (e.g. Andersen & Newman 1973). We must also note that rehabilitative work activity in particular is expected to be of help in charting the health services, social services and rehabilitation services that a particular customer might need and in guiding the customer to these services (Karjalainen & Karjalainen 2011, 27). As a result of this the use of health and social services by unemployed people participating in employment promotion measures may increase during the measure (Kaikkonen & Martelin 2014, 123).

It is difficult to assess the impacts of a single labour market measure on employment. Job-seekers whose unemployment has been prolonged often participate in several policy programmes and the possible effects of earlier measures become intertwined with those of later ones (Aho 2008, 46-47). When evaluating policy measures, a randomised controlled trial design might not be achievable; researchers must satisfy themselves with other study designs. It is even more challenging to evaluate wellbeing outcomes as they are difficult to measure. A recent summary shows that studies concerning

the social and wellbeing outcomes of labour policies amount to only a few (Coutts et al. 2014, 465-482). The paucity of research data presents challenges for economic analyses as well. In this situation, we may resort to modelling methods that use also secondary data (Knapp 2013, 6).

We structured this research report so that its Methods chapter describes the use of a simple decision model for the evaluation of economic consequences, after which we proceed to evaluate the economic consequences of the selected labour market and social policy measures. Our evaluation makes use of information concerning the outcomes of the selected measures in terms of employment, health and wellbeing. Once we have presented the results, we reflect on the method and the conditions for its use.

2 Methods

2.1 Economic evaluation

The method we applied is based on economic evaluation. Economic evaluation is a systematic approach to identify, measure and compare the costs and outcomes of alternative interventions such as policy programmes and various individual measures and courses of action. The key idea is that no measure should be preferred only on the basis that it is more effective or less costly. We must pay attention to both effectiveness and costs. The criterion of success is to what extent the desired outcomes are obtained with the resources spent. In other words, if the goal of a measure is to enable employment, wellbeing and health, the key issues are the change caused in these areas - not the volume of services produced – and the costs of the measure. Economic evaluations are conducted in order to inform decision makers about the best uses of limited resources; actual decisions, however, always involve political, ethical and practical considerations. (Drummond, Sculpher, Torrance, O'Brien & Stoddard 2005, 9-12; Sefton, Byford, McDaid, Hills & Knapp 2002, 7-11; Sintonen & Pekurinen 2006, 248-250.)

Economic evaluation methods differ from one another in how outcomes are measured and valued. All methods apply similar cost calculations. The cost-minimisation analysis is used only when the analysed interventions are known to be equally effective, i.e. they produce as much of the desired outcome. When this is the case, the analysis is applied in order to identify the least costly intervention. The cost-benefit analysis measures even effectiveness in monetary terms. Applying this model in practice is complicated, because

valuing e.g. wellbeing outcomes in terms of money is not only difficult but also controversial. The cost-effectiveness analysis measures outcomes and effectiveness with simple, one-dimensional, natural indicators. In terms of e.g. health outcomes, these indicators include the physical and chemical qualities, such as blood pressure and changes in cholesterol levels, connected to certain illnesses. Those interventions are most efficient that have the lowest cost per specified unit of outcome. When we are interested in something other than a clearly specified single outcome, the cost-effectiveness analysis is challenging. The cost-utility analysis forms a special case of the cost-effectiveness analysis. In the cost-utility analysis, several changes caused by a certain measure are combined into one index number by weighting single factors with preference weights obtained from the general population. Cost-effectiveness analyses and cost-utility analyses are used for finding the most efficient one among the compared interventions, i.e. for finding the measure that produces the largest amount of the desired outcomes with the resources spent. Nonetheless, these analyses do not tell us whether the benefits, in terms of money, are greater than the costs. This means that decision makers will have to assess whether the increases in e.g. health, wellbeing or quality of life are worth the costs. (Räsänen & Sintonen 2013; Sefton et al. 2002, 9-11.)

The cost-consequences analysis differs from the cost-utility analysis in that several outcomes are not combined in one effectiveness meter. All important outcomes remain in the analysis. The cost-consequences analysis is useful in social care where it is typical for a measure to aim for several different outcomes. Even though it is not possible to arrange different measures in order of superiority with this analysis, the additional information it produces is valuable for decision makers when they consider the options available. (Sefton et al. 2002, 9-10.)

A randomised controlled trial (RCT) would be desirable in economic evaluation and effectiveness evaluation equally, if we want strong evidence. Then we could be sure that the observed outcome is caused by the measure we are evaluating. In the case of social wellbeing measures and when diverse parties are involved, an RCT may be very difficult to achieve or unethical, and at least it will require a great deal of time and resources. If we still want to gain information about the efficiency of various measures, we must find alternative methods to obtain data concerning the costs and outcomes as well as their associations.

2.2 A simple decision model

Decision models utilise current, valid information for producing estimates of the expected costs and outcomes of the alternate paths to which a measure can lead, while they also estimate the probability with which a given decision option is optimal (Squires & Tappenden 2011, 1). Decision models combine evidence from various sources; this evidence is used for simulating the costs and outcomes of the alternate paths (Knapp, Bauer, Perkins & Snell 2013). For example, decision trees have been found to be a good method for evaluating social interventions. Models are often reduced descriptions of reality and no better than the information entered into them. However, they are flexible and produce evidence concerning the effects and costs of measures faster than do studies that apply primary data only. (Knapp 2013.)

The evaluation of economic consequences we apply in our work involves a simple decision model which we populate with cost and outcome data together with the probabilities of the outcomes. In addition, we convert the outcomes into monetary value where possible. The approach has been applied in Britain for the evaluation of mental health promotion and mental illness prevention activities, community capital-building initiatives and social care interventions (e.g. Bauer, Dixon, Wistow & Knapp 2013; Bauer, Fernández, Knapp & Anigbogu 2010; Knapp, Bauer, Perkins & Snell 2013; Knapp, McDaid & Parsonage 2011). Researchers applying the method have selected policy measures with research data available concerning the effectiveness of the measures (e.g. Knapp et al. 2011, 2). (Knapp & McDaid 2009; McDaid 2014, 294.)

Our target is more challenging in this respect, as there is a shortage of research evidence on effectiveness of active labour market measures. Nevertheless, the approach enables at least a rough estimate of the economic consequences associated with the specified outcomes, and also helps us consider the data that should be produced in the future. The stronger the evidence of effectiveness is, acquired through robust comparative study designs, the more robust the results are that the model produces. When research evidence is limited, it can be augmented in cooperation with experts well-versed in the policy under study.

This approach is also useful in that it requires the service pathways of the studied interventions to be exposed, thereby increasing the understanding of

the intervention. Methods such as the cost-benefit analysis value outcomes in terms of money, but we value in terms of money only those outcomes that become actualized mostly as concrete cash flows. For example, we do not try to assign monetary value to wellbeing as such, but we estimate the cost savings due to the decreasing use of services as wellbeing increases.

The progress of evaluation in general and in this study:

1. The first phase builds the theoretical and practical foundations for the study and the underlying decision model. The result is an understanding, based on literature and expert cooperation, of those service pathways involved in the studied interventions that produce the economic consequences – a justification for the model. At the same time, we learn what data are needed about the outcomes and effectiveness of the interventions so that we may populate the model with the appropriate data. The impact chains used in this work are described and their grounds are explained in Chapter 2.3.

2. Next, we acquire the data concerning the intervention under evaluation: its costs and outcomes, the probabilities of users achieving different outcomes and the benefits and savings related to the outcomes. We were primarily interested in research data produced in Finland about the outcomes of measures, because we could assume the systems for labour policies, health policies and social security to be relevant for the outcomes. Because Finnish research literature is not extensive, we made use e.g. statistics in addition to studies. We discussed the missing data with experts. We examined the resulting model, the applied probabilities and their uncertainties, and other relevant parameters together with experts.

3. The model thus developed can produce evaluations, based on available effectiveness data, of the economic consequences of the studied interventions. In this study, we calculated, on the basis of the effectiveness data collected, the costs of a labour policy measure together with the additional costs of income transfers (unemployment security) compared to the situation in which the persons would have been unemployed. We deducted the savings in income transfers that were caused by employment

being found and the savings in the utilisation of mental health services. We deducted the net costs calculated in this way from the benefits, which were evaluated using productivity gain, and thus obtained the net benefit of the measure.

4. Finally, we can describe what data should be produced for the model to yield better estimates of the economic consequences of the evaluated services.

2.3 Potential economic consequences

We identified four pathways with which labour market measures produce economic consequences. The first one, which is the most desired outcome for a labour market measure, is increased employability and employment followed by the replacement of unemployment benefits with wages or salary as well as benefits due to productivity gain (Figure 1, Path 1). The second outcome desired for the long-term unemployed is the clarification of their plans for the future and e.g. their starting of vocational education. Education increases the probability of obtaining employment later (Figure 1, Path 1). Labour market measures also can support mental health, psycho-social functioning status, wellbeing, coping with life and participation, and all of these have their economic impacts. Coping with life and social participation promote civil participation and yield wellbeing and benefits for the community (Figure 1, Path 3). Increases in wellbeing and health allow us to expect decreases in the need for and costs of social and health services; we can consider this the fourth pathway with economic consequences (Figure 1, Path 4).

Because the primary objective of labour market measures is employment, employment is systematically monitored, but the net effectiveness of these measures for the long-term unemployed is considered low. However, there are not many studies that focus on effectiveness. In international studies, the net outcomes of measures are generally found to be poor in terms of employment for the long-term unemployed. A meta-analysis of 199 employment promotion measures conducted in 1995 – 2007 showed that at least the effect of these measures on employment was positive more often

than negative even though there was a great deal of variation (Card, Kluve & Weber 2010).

Even though there are not many studies of the health and wellbeing outcomes of labour market measures, according to Coutts et al. (2014, 465-482) these measures have been able to 1) decrease psychosocial distress and depression, 2) increase subjective wellbeing, 3) improve level of control, 4) improve motivation and self-esteem and 5) increase social support.

The employment services' ability to decrease anxiety was observed by Pirjo Juvonen-Posti and her group (2002, 320-321) at the end of the 1990s. In addition, the studies of the Työhön project (name in English: Jobs) (Vuori & Silvonen 2005; Vuori, Silvonen, Vinokur & Price 2002) showed that the project participants clearly suffered from fewer symptoms of depression and anxiety than the control group and had better self-esteem. These outcomes were discernible even two years later, and the participants of this project also found their employment facilitated. The Työhön project was a Finnish version of the JOBS project, which was carried out in the USA and had similar results (Vinokur, Schul, Vuori & Price 2000). The focus of both JOBS and Työhön was on education. JOBS and Työhön were the only education-focused projects that fulfilled the selection criteria for a systematic literature review that investigated the outcomes of education-focused employment projects, and had positive outcomes in terms of both employment and wellbeing. (Audhoe, Hoving, Sluiter & Frings-Dresen 2010, 10.)

On the macro level as well, a connection has been found between active labour market policies and health (e.g. Stuckler, Basu, Suhrcke, Coutts & McKee 2009a; Stuckler, Basu, Suhrcke & McKee 2009b; Stuckler, Basu, Suhrcke, Coutts & McKee 2011). Suicide can be connected to anxiety due to unemployment. The researchers found that the suicide rate increased as unemployment increased. However, investing in active labour market policies neutralises the increase in the suicide rate. (Stuckler et al. 2009a, 320-321.)

If wellbeing increases and social problems decrease, it is logical to expect the utilisation of social and health services to decrease. We must highlight, however, that the use of such services is associated with other factors as well. Such factors include the social group, the service system itself and the attitudes and circumstances prevalent in the community and among near relations (e.g. Andersen & Newman 1973). Therefore, communities and

social groups differ in how individual-level health and wellbeing changes impact the utilisation of services.
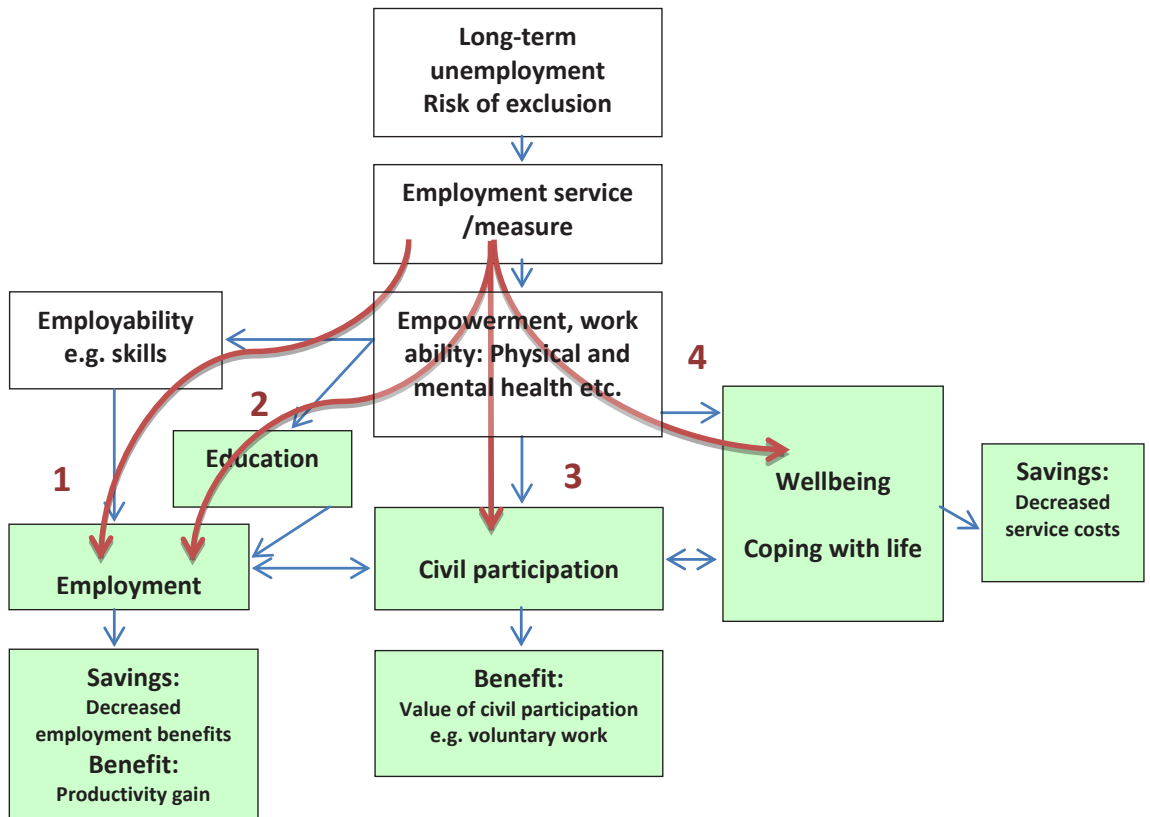
Figure 1. The pathways that produce the potential economic consequences of employment services (remodelled, Kauppi 2006)

3 EVALUATION OF THE ECONOMIC CONSEQUENCES OF ACTIVE LABOUR MARKET MEASURES

The economic consequences of the highest-level increased pay subsidy and rehabilitative work activity were estimated in 2011 prices for a subsidised period plus one year after the end of the period. The evaluation was conducted from the perspective of the public sector (the state and municipalities) and therefore, income transfers were treated as costs. The distribution of the net benefit was evaluated from the social perspective. After describing our test labour market measures, this chapter presents the parameters applied in the evaluation. Appendices 7 and 8 show, in 2011 prices, the most essential parameters of the costs, outcomes and consequences of the highest-level increased pay subsidy and rehabilitative work activity.

3.1 Highest-level increased pay subsidy

3.1.1 Pay subsidy as an activation measure

The idea behind pay-subsidised employment is to improve the vocational skills and market positions of unemployed job-seekers and to promote the employment of the long-term unemployed in the open labour market. In addition, the pay subsidy is intended for the partly disabled, for young people under 25, and for other unemployed persons under the threat of prolonged unemployment or exclusion from the labour market. Parties

eligible to draw this pay subsidy are employers on the private and public sector excluding government offices, and the pay or salary must comply with the current collective agreement or otherwise be usual and reasonable for the kind of employment. The highest-level increased pay subsidy is increased by 61-90 percent of the basic subsidy, and it can be obtained if the person to be employed is entitled to the labour market subsidy and has drawn at least 500 days' worth of unemployment benefits on the basis of his or her unemployment. The pay subsidy can be granted for a maximum of 24 months to employ a person whose unemployment has been prolonged, but the usual duration is no more than 10 months. (TE-palvelut 2014.)

The highest-level pay subsidy for the third sector is intended for the employment of individuals who need a great deal of support. The idea is for the employer to provide, in return of the high subsidy, more guidance and support for the employee than would be usual in a regular pay-subsided employment relationship. Such extra support may consist of e.g. rehabilitation, social support or extra instruction in the relevant duties. In addition to increased competence and work experience, the objective is to boost the employee's functioning status and wellbeing, including coping with life, during the subsidised period so that the employee's transfer to the open labour market is facilitated. (Juvonen & Vehkasalo 2011, 72–73; Välimaa, Ylipaavalniemi, Pikkusaari & Hassinen 2012, 6.)

Support and guidance should be integral to the highest-level pay subsidy, but in practice, situations vary widely. Support and guidance were among the factors that influenced the selection of the cases for this study. Labour policy projects were included because it was known that in pay-subsidised, project-form work, individuals are given guidance and support. The selection was also influenced by the availability of cost data. The data consists of data from employment projects that were implemented in North Karelia in 2011 and received labour market funding.

In addition to the cost data, the party funding these projects, the Centre for Economic Development, Transport and the Environment (ELY Centre) in North Karelia, provided us with information about the persons employed in the selected projects, the durations of the subsidised periods, and their employment status after the subsidised work was over. Our liaisons at the ELY Centre functioned as experts of the measures we evaluated, monitoring and commenting on the progress of our work. We also received preliminary

wellbeing data concerning the pay-subsidised individuals from the project *Tuloksekas työllistäminen – Productive Employment Services* (Jolkkonen & Kurvinen 2014).

3.1.2 Cost evaluation of highest-level increased pay subsidy

The costs accrued by organisations offering support and work were evaluated on the basis of seven employment projects, various statistics and expert consultation. Our inclusion criteria consisted of the provision of pay-subsided employment and a similarity of operations so that the calculation of the unit costs for a subsidised month would be possible. In 2011, the number of persons employed under the highest-level increased pay subsidy system in the selected projects was 273, which is also the size of the group in this study for which the outcomes and costs of the highest-level increased pay subsidy were estimated. All the costs were calculated in 2011 prices.

Because actual costs were not available for these employment projects, we calculated the costs on the basis of the funding decisions of the selected projects. On the basis of pay-subsidised months and approved costs, we estimated the average cost of a pay-subsidised month for an employer at approximately 286 € per employed person. This amount includes the guidance-related and training costs as well as all the other costs needed for the implementation of the project.

When estimating the personnel costs accrued by the Employment and Economic Development Offices (TE Offices), we included the time required for the actual customer contact (4 h), for making the decision about the pay subsidy (20 min) and for the remittance of the pay subsidy (10 min). This estimate of working hours allocation was obtained from TE Office experts. The average monthly total income (OSF 2014a) of employment counsellors and advisors (2 643 €) was divided by the average number of working days in a month (21.5) and, further, by the length of the working day (7.25 h), calculated on the basis of the average regular weekly working hours in public sector office work. Social security costs were added as 61.5% in accordance with the proposed state budget (VM 2014), in which case the hourly rate (27.39 €) includes all costs that accrue on the state, which is the employer, due to the personnel, but includes no other costs such as

machinery, equipment and buildings. The estimated pay-subsidy costs for the TE Office were 19.22 € per person employed per one subsidised month.

When they pay the highest-level increased pay subsidy to help employ individuals who are not easily employable, the state and municipality are not required to pay the labour market subsidy for these unemployed persons. Our study did not note possible changes to other income transfers such as the general housing allowance or social assistance. When we estimated the additional cost due to income transfers, we set the average labour market subsidy at 609.59 € per month, calculated on the basis of the report by the Social Insurance Institution of Finland (Kela) concerning receivers of unemployment benefits and the actualised benefit payments (Kela 2014a). In 2011, the highest-level increased pay subsidy was 48.91 € per day and, correspondingly, 1 051 € per month. The public sector (the state and municipalities) must bear an additional cost of 442 € per month due to the difference between the highest-level increased pay subsidy and the labour market subsidy.

3.2 Rehabilitative work activity

3.2.1 Rehabilitative work activity – an activation measure and a social service

The purpose of rehabilitative work activity is to improve the employment in the open labour market. It deals with people who are unemployed long-term or otherwise not easily employable, and aims to promote their possibilities to participate in training and other services offered by the labour administration. Rehabilitative work activity is a social service arranged by municipalities, but it also is an employment-promotion service referred to in the Unemployment Security Act. The purpose of rehabilitative work activity is to prevent the negative influences of unemployment on the customer's functioning capability while improving the customer's coping with life and everyday management, capacity for work and functioning capability. Work activity also aims to prevent exclusion. The scope of rehabilitative work activity includes people who receive the labour market subsidy or social assistance on the basis of their unemployment. The TE Office, municipality and the customer draft an activation plan together, specifying the means for the customer to

move on into training or working life. In addition to rehabilitative work the activation plan may include the TE Office's employment-promotion services and various social, health, training and rehabilitation services. The activation plan is checked and updated when the customer's service needs undergo changes. (Sosiaaliportti 2014; Karjalainen & Karjalainen 2011, 5; Kallio, Meklin & Tammi 2008, 3-9.)

Rehabilitative work activity is goal-oriented action, based on a personal plan. The participants work for the state, a municipality, an organisation, a foundation or another public entity. Municipalities may not obtain rehabilitative work activity from private businesses. A customer in rehabilitative work is not employed by the organiser of the activity but is a customer of the service and, as a customer, does not receive any wages. The livelihood of a customer of this service is ensured through the system of benefits in which he or she was included immediately before starting in the rehabilitative work activity. In addition, the receiver of the labour market subsidy receives a maintenance allowance and the receiver of social assistance receives a premium grant for the days that he or she actually participates in rehabilitative work activity. The maintenance allowance and the premium grant are meant to compensate the unemployed person for his or her extra costs due to participation in rehabilitative work activity. In addition, the participant is entitled to a travel allowance, as social assistance, to compensate him or her for travel costs due to participation in rehabilitative work activity, and the labour market subsidy is increased for the duration of the employment promotion measure. (Sosiaaliportti 2014; Laki kuntouttavasta työtoiminnasta 2001/189.)

The municipality is entitled to receive from the state 10.09 euros per activity day and participant, and also imputed central government transfers for basic public services to cover the costs of rehabilitative work activity. (Sosiaaliportti 2014; Virtanen & Kiuru 2014, 8; Kallio et al. 2008, 9; Laki kuntouttavasta työtoiminnasta 2001/189). The purpose of the labour market renewal in 2006 was to encourage municipalities to become more active in reducing their unemployment rates. Ever since the renewal, municipalities have funded one half of the labour market subsidy that is granted to unemployed persons who have received the subsidy for more than 500 days and are not participating in any activity (passive subsidy receivers). If an unemployed person participates in rehabilitative work activity, the state

covers his or her labour market subsidy even after the 500 days. (Kuntaliitto 2005.) As of the beginning of 2015, municipalities are liable for their half of the labour market subsidy after 300 days, and the liability rises to 70% when the individual has received the labour market subsidy for 1000 days. The labour market subsidy paid during an activation measure is covered entirely by the state for all receivers similarly to 2014. (Karisto 2014.) However, this study does not take note of the regulations that came into effect at the beginning of 2015.

In our study, we evaluated rehabilitative work activity at the national level (Finland). Because there are no comprehensive annual statistics collected with good coverage of rehabilitative work, we used several different statistical sources and previous studies that report the results of surveys to municipalities regarding rehabilitative work activity. When estimating costs, we used the report by Olavi Kallio et al. (2008) concerning the economic impacts of rehabilitative work activity on municipalities as well as statistics by Kela and the National Institute for Health and Welfare. We estimated transfers from rehabilitative work activity to paid work in the open labour market on the basis of research by Jarno Karjalainen and Vappu Karjalainen (2011) and Simo Klem (2013). In addition, we used information received from experts in labour administration. When estimating savings in health services, we used wellbeing information from the project *Tuloksekas työllistäminen – Productive Employment Services* (Jolkkonen & Kurvinen 2014) similarly to what we did in our evaluation of pay-subsidy measures.

Estimates vary concerning the number of participants in rehabilitative work activity. According to Kela (2014b) there were 12 442 persons receiving the labour market subsidy and participating in rehabilitative work activity in 2011. According to the National Institute for Health and Welfare (Virtanen & Kiuru 2014) there were 9 925 persons receiving social assistance and participating in rehabilitative work activity that year. Some of these customers receive both benefits so this information is partly overlapping. Because there is no reliable, un-ambivalent information available, we simply estimated, for the purposes of our study, the number of participants to be 17 000. The Ministry of Employment and the Economy has estimated that in 2010 approximately 15 000 people participated in rehabilitative work activity (Klem 2013, 59). In addition, Ari Virtanen (2014, 1) has estimated the number of participants in 2013 to be 24 200. Therefore, our estimation

does not essentially deviate from those of others and the growing trend of rehabilitative work activity.

Rehabilitative work activity is arranged in accordance with each customer's personal need as part-time or full-time activity 1–5 days per week for 3–24 months (Sosiaaliportti 2014). According to Jarno Karjalainen and Vappu Karjalainen (2010, 38) the typical length of an activity day is four or six hours, and less than a fifth of the participants work 4.5–8 hours daily. In our study, we used an average rehabilitative work activity period of 5.63 months, which we calculated on the basis of statistics by the Financial Supervisory Authority of Finland and Kela (Finanssivalvonta & Kela 2012). The number of activity days per week was set at 4.3 (Karjalainen & Karjalainen 2010).

3.2.2 Cost evaluation of rehabilitative work activity

Production costs for rehabilitative work activity were obtained from the estimates by Kallio et al. (2008). The gross cost of rehabilitative work activity was converted to the corresponding 2011 price using the Price Index of Public Expenditure (OSF 2014b). This gross cost includes coaching, administration, service acquisition, materials, equipment and other goods as well as rooms and facilities. Depreciations and implicit costs are included in the gross cost. Profits brought by the activity due to e.g. sales and payments are not deducted from it, because productivity gain was handled separately. Thus, the production costs of rehabilitative work activity were approximately 618 €/month. The evaluations of the TE Office personnel costs were carried out similarly to our investigation of the highest-level increased pay subsidy (see Chapter 3.1.2). An expert in the South-Savo TE Office estimated the working time required for one activation plan to be about 4.2 hours.

Supplementary amounts of labour market subsidy, the maintenance allowance or premium grant, and travel allowance paid to a participant in rehabilitative work activity are additional costs (subsidies) accrued by the municipality and Kela. During a rehabilitative work activity measure in 2011, these costs amount to 148 euros per month.

For services that essentially belong to rehabilitative work activity and improve employability (social, health and other services), we evaluated the costs of certain health and substance abuse services only. According to the study by Jarno Karjalainen & Vappu Karjalainen (2010, 41), 23% of the

participants in rehabilitative work activity were referred to a health check and/or treatment, while 16% received various substance abuse services and 7% received mental health services. Because there was no information available of the number of visits by participants in rehabilitative work activity to health services and other services, we assumed health check-ups to take place once per activity period and substance abuse services as well as mental health services to be utilised once a month during a period of rehabilitative work activity. The total costs of these services were calculated on the basis of national unit costs in health care and social care (Kapiainen, Väisänen & Haula 2014). This gives us an average of 26.89 € per month per participant in rehabilitative work activity for social and health services intended to improve employability. Appendix 1 presents the average costs and subsidies of rehabilitative work activity.

3.3 Productivity gain

In this study, the economic benefits gained through employment are evaluated by using productivity gain and savings in unemployment security costs (Figure 2). Participants carry out work during labour market measures and obtain employment after such measures, with varying degrees of success, in the private and public sectors. In health economics, productivity change due to conducted work is often evaluated from the societal perspective by using gross wages which include employers' social security contributions (Drummond et al. 2005, 78–88). In this study, we evaluated productivity gain due to people finding employment by using average gross wages (including employers' social security contributions) obtained from various statistics.
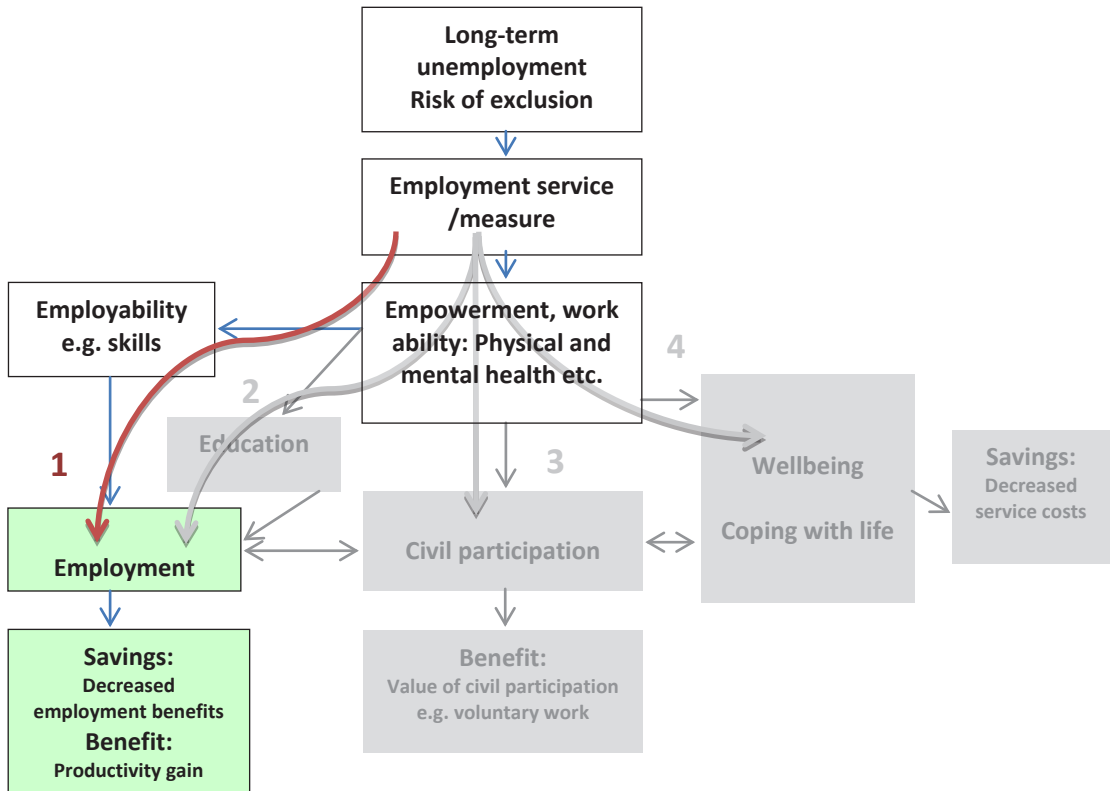
Figure 2. Employment, subsequent savings and productivity gain – Path 1

3.3.1 Productivity gain of the highest-level increased pay subsidy

We calculated the productivity gain of work conducted under the highest-level increased pay subsidy system for a subsidised period and for one year after the end of this subsidised period, applying year 2011 price levels. The length of a subsidised period was set at 8.1 months, which is the average period in our data for persons employed (n=273) in labour market projects (n=9) with the highest-level increased pay subsidy.

There was no statistical information available concerning actual wages for subsidised periods. In practice the working hours and hiring costs of people in subsidised employment in voluntary organisations are often set to correspond to the highest-level increased pay subsidy paid to the employer (Johanna

Seppänen, personal notification 31/10/2014; Piia Heikkinen, personal notification, 15/12/2014). For these reasons, the basis for the evaluation of the profitability of a subsidised period in this study was the amount of highest-level increased pay subsidy. In 2011 it was approximately 1 051 euros per month. The figure includes the holiday bonus (4%), employers' statutory social security contributions and contributions to earnings-related pensions, accident insurance, unemployment insurance and compulsory group life insurance. The gross wages of individuals who continued in subsidised employment after a subsidised period were set to correspond to wage-earners' work requirement and the respective earnings limit for full-time work, which in 2011 was 1 071 euros per month (Kela 2014c). Because no information was available concerning the distribution of the highest-level increased pay subsidy and the standard-level pay subsidy among individuals who continued in subsidised employment, the assumption was that those who continued received the standard pay subsidy, which means that the wages were correspondigly estimated higher. Holiday bonuses and employers' social security contributions were added to these gross wages.

3.3.2 Productivity gain of rehabilitative work activity

The Rehabilitative Work Activities Act (Laki kuntouttavasta työtoiminnasta 2001/189) states that rehabilitative work must not replace work carried out in public or private employment relationships. It also must not cause redundancies or lay-offs for the employees of a municipality or other party offering these activities, and the terms and conditions of their employment and their benefits must not be allowed to deteriorate. Therefore we argue that rehabilitative work activity yields outputs with a value that can be determined as sales profits from items or services produced during the activity, or through proportioning the output to salaried work. In this study, we use the latter of these methods when evaluating the productivity gain of rehabilitative work activity periods. This is because the focus of rehabilitative work activity can be claimed to be on performing the work (Kesä, Joutsen & Heinisuo 2011, 31) and, most often, on duties that do not yield items or services that could be sold (Karjalainen & Karjalainen 2010, 37). We set the productivity of rehabilitative work activity at 30%, which is based on the estimate by the study group of Mikko Kesä (2011). The customer's working capability and

the fact that some customers only work part-time has been considered in the estimate. In addition, Kesä and his study group decreased the estimate from the consensus of the experts by 5%. The gross monthly wages that were used for calculating productivity gain were estimated using the municipal minimum wages for regular full-time employment for individuals fully fit for work and older than 17 (1 450 €) (Kuntatyönantajat 2010). The gross monthly wages, considering the person's working capability and part-time work, were therefore 435 euros.[1]

The productivity gain of the year following a period of rehabilitative work activity was evaluated through the transfers of the participants in the labour market. According to the study by Jarno Karjalainen and Vappu Karjalainen (2010, 48), one year after the end of a rehabilitative work activity period, 3% of the participants had transferred to salaried employment in the open labour market, 6% were in pay-subsidised employment, and 6% were involved in one of the following measures: working life training, practical training or work trial. Immediately after the end of a rehabilitative work activity period, 4% of the customers were in education, but after one year, not one customer was in training. As much as 20% continued in rehabilitative work activity. We compared the above transfers to those immediately after the period as well as the research results by Simo Klem (2013, 50-51), and decided on the following transfers for our evaluation of the productivity gain of the first year: paid employment in the open labour market 1%, pay-subsidised employment 3% and rehabilitative work activity 25%. We did not evaluate the productivity gain of other types of transfers. For the sake of simplicity, this study assumes that transfers take place seamlessly even though this is not always the case in practice. The starting wages of those employed in the open labour market were estimated to be 70% (1 941.80 €) (Mustonen & Viitamäki 2004) of the median of the total wages of full-time employees (OSF 2014c). After a rehabilitative work activity period, individuals who continued in subsidised employment were assumed to receive the highest-level increased pay subsidy, which means that the hiring costs equalled the pay subsidy (see Chapter 3.3.1). Therefore, counting back, the gross wages of individuals in such subsidised employment were 830.15[2] euros per month.

1 30% of 1450 €. Source: Kesä et al. 2011; Kuntatyönantajat 2010.
2 Calculation: (1.04 x B) x 1.2179 = 1051.48 €, where B = gross wages, holiday bonus 4% and employer's social security contributions 21.79%.

The first-year productivity gain of those continuing in rehabilitative work activity was evaluated in the same way as during the activity period.

3.4 Distribution of income transfer costs and wage costs associated with livelihood

Utilising parameters applicable to the evaluation of costs and productivity, we investigated the impacts of the studied measures on the distribution of such income transfer costs and wage costs that are associated with people's livelihood, focusing on the distribution of these costs among employers, the unemployed, wage-earners (domestic households), social insurance providers, municipalities and the state. The distribution of income transfer costs and wage costs was studied by first calculating the net benefit for each sector for the paid or received amount (benefit) for the relevant intervention period, and then calculating it for the immediately following one-year period, finally comparing the impact of these calculations to the situation in which the people concerned were unemployed. The cash flows between the different sectors during the periods of our test measures are presented in Figures 3 and 4. The net benefit for the year following the intervention was calculated separately for those who continued their participation in the intervention and for those who gained employment, either subsidised or in the open labour market. These net benefits were summed up to obtain the total net benefit of the measure. The total net benefit shows the benefit obtained by each sector due to the intervention, for the period of the intervention and for the year immediately following it. This study that focuses on costs due to income transfers and wages does not include the production costs of the measure nor the savings due to the decrease in service utilisation.

A. Unemployment (8.1 months, n=273)

STATE ← National health insurance contributions 0.015 million € — PRIVATE HOUSEHOLDS

STATE → Labour market subsidy 0.674 million € → PRIVATE HOUSEHOLDS

MUNICIPALITY → Labour market subsidy 0.674 million € → PRIVATE HOUSEHOLDS

MUNICIPALITY ← Municipal tax 0.213 million € ← PRIVATE HOUSEHOLDS

SOCIAL INSURANCE COMPANIES

EMPLOYER SECTOR

B. Highest-level increased pay-subsidised period (8.1 months, n=273)

STATE ← National health insurance contributions 0.031 and Public broadcasting tax 0.012 million € — PRIVATE HOUSEHOLDS

Municipal tax 0.102 million €

Earnings-related pension (TyEL) and unemployment insurance contributions 0.101 million €

Pay subsidy 2.325 million €

Gross wages 1.909 million €

MUNICIPALITY

SOCIAL INSURANCE COMPANIES

EMPLOYER SECTOR

Social security costs 0.416 million €

A – B. Net benefit

STATE	MUNICIPALITY	SOCIAL INSURANCE COMPANIES	PRIVATE HOUSEHOLDS	EMPLOYER SECTOR
- 1.623 million €	+ 0.563 million €	+ 0.517 million €	+ 0.551 million €	0 million €

Figure 3. Cash flows between the different sectors, caused by unemployment and the pay subsidy, and the net benefits of the sectors when unemployment is contrasted with pay-subsidised employment
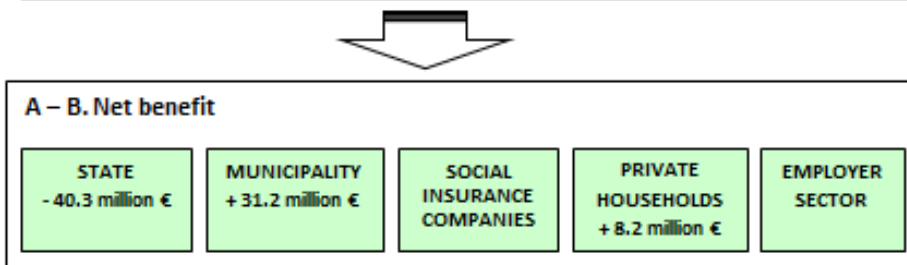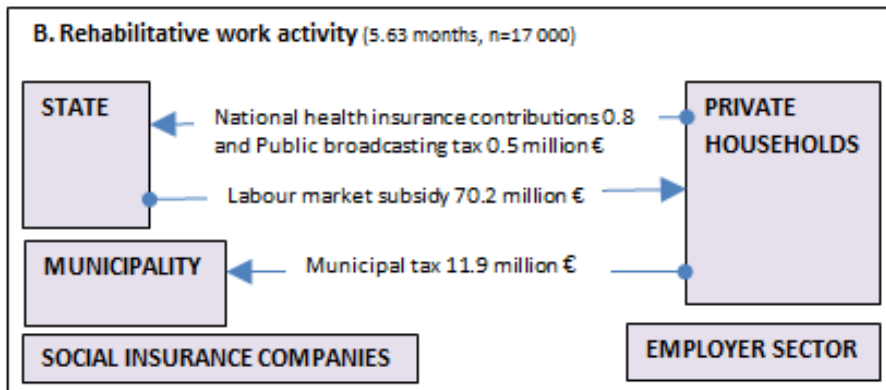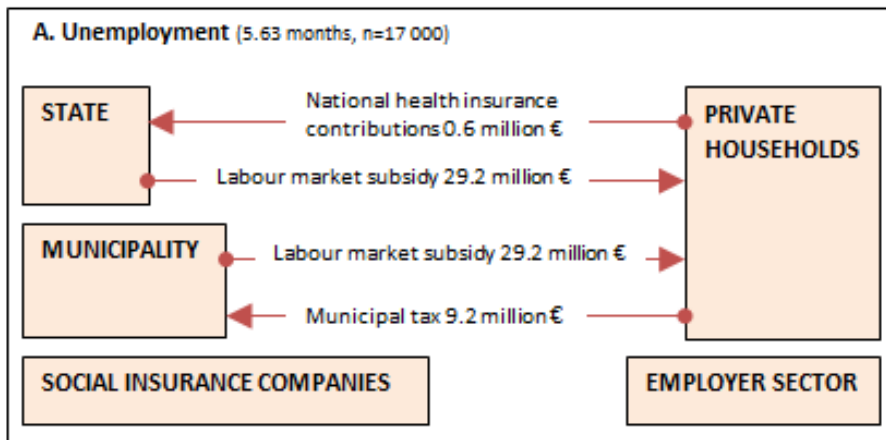
Figure 4. Cash flows between the different sectors, caused by unemployment and rehabilitative work activity, and the net benefits of the sectors when unemployment is contrasted with rehabilitative work activity

In the study of the pay subsidy, the net benefit for employers was calculated by deducting income transfers (pay subsidy) from the sum of gross wages and employers' statutory social insurance contributions[3]. The benefit obtained by the unemployed and by people participating in labour market measures, i.e. by the domestic sector in this context, was calculated as the labour market subsidy or gross wages, minus employees' contributions to earnings-related pension insurance, unemployment insurance, and contributions to daily allowances and medical care under the national health insurance[4]. Earnings-related pension contributions were calculated using the percentage (4.7%) applicable to persons under 53 years of age.

Additional factors reducing the benefit to the domestic sector included the municipal tax, church tax, public broadcasting tax[5] and state tax. These taxes were calculated in accordance with the Finnish tax administration's 2011 instructions for individual taxation (Verohallinto 2014a). Municipal tax was calculated as 19% of municipally taxable earnings. The municipal tax rates were obtained by rounding the average municipal income tax rates of 2011 down by 0.16 percentage points (Kuntaliitto 2014). The benefit to social insurance providers consists of the statutory social insurance contributions payable to them by employers as well as employees' contributions to earnings-related pension insurance and unemployment insurance. The benefit to municipalities consists of the municipal tax collected from wage earners and labour market subsidy receivers as well as the municipal portions of the labour market subsidy. When a person, who has been unemployed for longer than 500 days, takes part in pay-subsidised activities or rehabilitative work activities, the municipality does not need to pay the state any municipal share of the labour market subsidy, and the benefit to the municipality increases compared to the situation in which the person would be unemployed. In addition, when the municipality accrues more taxes, the benefit to this municipality increases.

When the benefit to the state was estimated, the items included were income transfers (pay subsidy and the portion of the labour market subsidy payable by the state), employees' contributions to daily allowances and

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3 Employer's social security contribution 2.12%, TyEL 17.8%, unemployment insurance 0.8%, group life insurance 0.07% and accident insurance 1.0%.
4 Only contributions to daily allowances and medical care under the national health insurance can be deducted from labour market subsidy.
5 The public broadcasting tax has been collected as of 2013.

medical care under the national health insurance, public broadcasting tax, state tax and pay subsidy. When calculating the state tax, deductions were made in accordance with the Finnish Tax Administration's instructions (Verohallinto 2014a). The tax was calculated according to the 2011 state income tax rate (Verohallinto 2014b). The public broadcasting tax was also calculated according to the instructions by the Finnish Tax Administration (Verohallinto 2014c). For other sectors, the tax studied was the church tax, which was calculated as 1.5 percent of earnings taxable in municipal taxation (Appendices 13-15).

The investigation of the net benefit of rehabilitative work activity was carried out in the same way for each sector as that of the pay subsidy. In addition, an opportunity cost was added, i.e. the estimated value of the time spent in rehabilitative work activity by the participants[6]. Often, costs are seen to include only those sums that are accrued due to the production of the service. However, economics and economic evaluations are interested in opportunity costs as well. Opportunity costs refer to benefits lost due to resources being taken up in a certain activity, thereby being made unavailable for any alternative purposes. (Sefton et al. 2002, 51.) Even though rehabilitative work activity is not paid for in wages, there is an opportunity cost for it, because participants might use their time in a different way with hobbies or voluntary work. The opportunity cost was calculated using the same gross monthly wages that were used for calculating the productivity gain of rehabilitative work activity (see section 3.4.2). A holiday bonus (4%) and the employer's social security contributions (21.79%) were added to the gross wages. The investigation of the net benefit, which included the opportunity cost, utilised the same items that were utilised in the estimation of wages for the domestic sector.

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6 The labour market subsidy receivable by households was noted as income for them also in the opportunity cost calculation. In this study, the opportunity cost calculated on the basis of gross wages (30%/1 450 €/mth) is smaller than the average labour market subsidy paid for the time of rehabilitative work activity (733.15 €/mth). If the labour market subsidy were to be excluded, the calculation should note the 300 euros per month which is the exempt amount, i.e. the amount of income allowed for the unemployed without reduction of benefits.

3.5 Savings in services

3.5.1 Evaluation of wellbeing outcomes

As we stated above, earlier research has shown that active labour market measures have positive outcomes in terms of the individual's health. Vuori et al. (2002) observed in the Finnish *Työhön project* that the psychological anxiety of participants in labour market interventions was significantly reduced through the activity. According to the tentative results of the project *Tuloksekas työllistäminen – Productive Employment Services*, approximately 70% of the participants in 2013-2014 considered their quality of life to be deficient, evaluated with the EuroHIS-Qol 8-item index at the beginning of the intervention. According to a second survey, conducted immediately after the intervention or about half a year later, approximately 30% considered their quality of life to have improved. (EuroHIS-Qol 8-item index question 1, "How do your rate your quality of life?") (Jolkkonen & Kurvinen, 2014). We must note, however, that approximately 15% of respondents considered their quality of life to have become poorer. In Jaana Vastamäki's study (2009), activities other than re-employment (e.g. pay-subsidised work, practical training, labour-policy –based education) during the follow-up period increased the sense of coherence which is also related to a good quality of life (see Chapter 3.5.2) by 2.86 points and the dimensions of comprehensibility and manageability by an average of 1.43 points.

We used the above results for the calculations performed for this study, assuming a pay-subsidised period or a period of rehabilitative work activity to improve the quality of life of the participants by a minimum of 5% and a maximum of 15%. Similarly, we assumed the sense of coherence to improve by no less than 1 point and no more than 1.5 points.
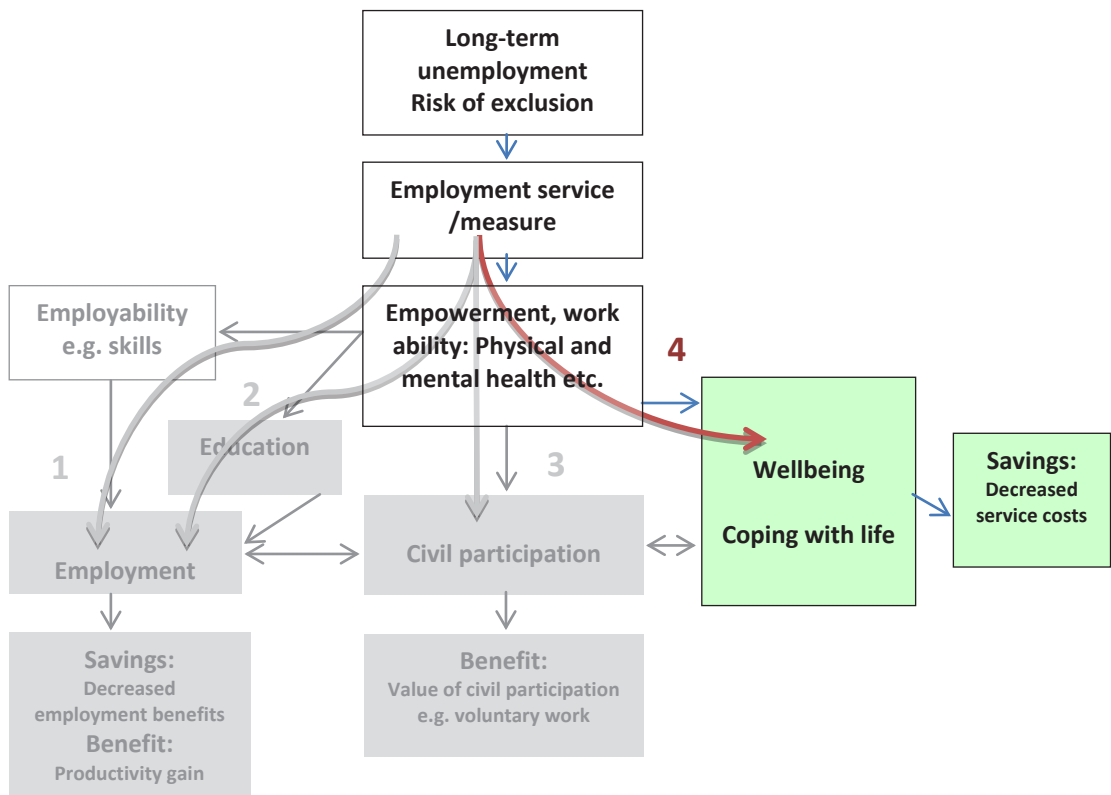
Figure 5. A reduction in the need for social and health services and in the respective costs due to increasing wellbeing – Path 4

3.5.2 Wellbeing differences and mental health care utilisation – methods description and cost analysis

Some previous research data are available concerning health care utilisation and its connection to wellbeing and the different parts of wellbeing. We studied this connection through visits to doctors, hospital ward care and mental health care utilisation. The study focused particularly on the utilisation of mental health care services, because that was where our regression analyses produced the best coefficient of determination (see Appendices 4 and 5). The obtained data were used for populating the decision model in order to enable the evaluation of the economic consequences of employment services.

The study made use of the *Terveys 2011* data collected by the National Institute for Health and Welfare (THL); the data are both follow-up and

cross-sectional by nature. *Terveys 2011* was a continuation of the *Terveys 2000* study in 2000-2001. Invitations to the *Terveys 2011* study were sent to all participants of the *Terveys 2000* study. In 2011, these people were at least 29 years old. In addition, the data contains a new random sample of people of the ages of 18–28. *Terveys 2011* included extensive health examinations and interviews. (Koskinen, Peña, Lundqvist, Mäkinen & Aromaa 2012, 14-15.) In 2011, the number of respondents amounted to 10 171. Our study included working-aged persons (ages 18–65) – the data of a total of 8 107 persons. The descriptions of the key variables are available in Appendices 2 and 3.

An individual's self-rated health is connected to his or her wellbeing and quality of life, and it has been shown in several studies to be a more reliable indicator of life expectancy than many objective measures of health (see e.g. Hansen, Halvorsen, Ringberg & Førde 2012; Lyyra 2007; Miilunpalo, Vuori, Oja, Pasanen & Urponen 1997; Rattay et al. 2013). In addition, the sense of coherence has been shown to be clearly connected to quality of life: the higher the individual's sense of coherence, the better the individual's quality of life (Eriksson & Lindström 2007).

Models explaining health care utilisation often include a quality of life measure relating to health and/or the respondent's own assessment of his or her health. Similarly, the *Terveys 2011* data contains a number of measures relating to different areas of wellbeing[7]. In this study, in addition to self-rated health, we made use of the EuroHIS-Qol 8-item index[8], which gives a wider perspective to quality of life, as well as the Antonovsky SOC-13 scale[9], which assesses the sense of coherence. Self-rated health has been shown to be connected to health care utilisation: the higher the individual's self-

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7 The *Terveys 2011* data includes the measures in the EQ-5D, 15d, EuroHIS-Qol 8-item index, self-rated quality of life, GHQ-12 and Antonovsky SOC-13 social coherence scale. The usability of all these measures was evaluated in our regression analyses, but finally, on the basis of their statistical significance and research literature, we focused on the EuroHIS-Qol 8-item index, self-rated quality of life and Antonovsky SOC-13 social coherence scale.

8 The EuroHIS-Qol 8-item index (EuroHIS i.e. European Health Interview Surveys) includes eight questions relating to the respondent's general quality of life and health, vitality, self-esteem, relations to other people, home and economic situation. The sum of the number of points is calculated from the survey responses received, then divided by the number of questions. The higher the average, the higher the respondent rates his or her quality of life. (Nosikov & Gudex 2003; TOIMIA database 2013.) To our knowledge, studies into health care and mental health care utilisation have not previously made use of the EuroHIS-Qol 8-item index, but we assumed this measure would produce results similar to studies that have assessed quality of life and satisfaction with life in other ways.

9 When measuring coherence, a commonly used measure is the 13-item Sense of Coherence Scale developed by Aaron Antonovsky (1979; 1987), which studies have shown to reliably describe an individual's orientation to life and health (Feldt 1997).

rated health, the less the individual tends to use health care (Hansen et al. 2012; Miilunpalo et al. 1997; Rattay et al. 2013). Similarly, a weak sense of coherence has been shown to predict higher mental health care utilisation (Ristkari et al. 2005; Bergh, Baigi, Fridlund, & Marklund 2006). In this study, on the basis of regression analyses, the analysis of health care utilisation was limited to mental health care services[10]; mental health care relates to an individual's health in a manner similar to other health care (see e.g. Yoon & Bernell 2013).

In the regression analyses, the quality-of-life measures that explained mental health care utilisation in a statistically significant manner included the EuroHIS-Qol 8-item index and the Antonovsky SOC-13 social coherence scale (see Appendix 5). In addition, we included several sociodemographic and other explanatory variables[11] from the *Terveys 2011* data into our analytical models of mental health care utilisation. In particular, an individual's unemployment, long-term illnesses, loneliness, lack of social support and financial problems have been shown to be connected to mental health disorders (Heiskanen, Salonen & Sassi 2010). In the analysis model of this study, a person's long-term illness predicted a higher probability of that person using mental health services (see Appendix 6). However, studies have also shown that the connection between mental health problems and mental health care utilisation is not necessarily clear-cut[12]. We studied the connection between mental health care utilisation and wellbeing differences especially with different kinds of quality-of-life measures. We made a conscious decision to exclude deeper analyses of the effects of other background factors.

10 The rationale behind this limiting was that the coefficients of determination in the regression analyses of health care utilisation remained modest (approx. 2.3–6.7%). The coefficient of determination for mental health care utilisation was reasonable: 17.6%.

11 The respondent's sex, age, location (i.e. special responsibility area in the Finnish healthcare system), marital status, education, whether or not employed during the past 12 months, presence of a long-term illness, experience of loneliness and experience of sufficiency of income.

12 Mental health care utilisation does not always measure up to the actual need of these services. In Finland, for example, the aged tend to use these services less even though they suffer from the greatest number of symptoms of psychological problems (Sainio, Koskinen, Sihvonen, Martelin & Aromaa 2014). In Finland, the availability of mental health care is uneven in terms of geography: people in rural areas do not have as easy an access to these services as people have in towns (Paananen et al. 2013).

3.5.3 Cost savings due to decreasing mental health care utilisation

On the basis of the data in *Terveys 2011*, we calculate that 91% of mental health care visits are visits by working-age people (ages 18–65). According to the SOTKAnet Statistics and Indicator Bank (THL 2014), there are 419 mental health visits in primary health care per year per 1000 working-age inhabitants, and similarly, 298 visits in specialised mental health care. This means that about 58% of the visits take place in primary health care and the rest, 42%, in specialised health care. The average[13] cost of a mental health care visit, calculated on the basis of national health care unit cost data (Kapiainen et al. 2014) is about 82 € in primary health care and 275 € in specialised health care. (Table 1.)

Table 1. Mental health care costs and cost savings due to a better quality of life and sense of coherence (n=1000)

Mental health services, year 2011	Visits[1]	Visits, %	Average costs[2]	Average costs per year	Cost savings /Better quality of life[3]	Cost savings /Better coherence[4]
	a	b	c	d (= a × c)	e (= 0.033 x d)	f (= 0.0045 x d)
Primary health care	419.0	58.4	82.2 €	34 442 €	1 137 €	155 €
Specialised health care	298.5	41.6	275.4 €	82 207 €	2 713 €	370 €
Total	717.5	100.0		116 649 €	3 849 €	525 €

[1] Number of visits per year per 1000 working-age (ages 18-65) individuals. Source: THL, SOTKAnet Statistics and Indicator Bank 2005 – 2013. SOTKAnet does not directly provide the number of mental health care visits by people of working age. Using Terveys 2011 data, we estimate that 91% of mental health care visits are made by working-age people. The SOTKAnet indicators 3075 and 2482 lead us to estimate the number of mental health care visits to be 419 in primary health care and 298.5 in specialised health care per 1000 working-age people.

[2] Average costs euros per visit. Source: Kapiainen et al. 2014.

[3] A better quality of life decreases health care utilisation by 3.3% compared to a poorer quality of life.

[4] An increase of one unit in the sense of coherence decreases mental health care utilisation by an average of 0.45%

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13 The average costs of mental health services are the sum of the unit costs of the different types of services divided by the number of these service types.

Our study of marginal effects[14], assessing the *Terveys 2011* data with the EuroHIS-Qol 8-item index[15], shows that a better quality of life decreases health care utilisation by 3.3% compared to a poorer quality of life. Therefore, a better quality of life could decrease mental health visits in primary health care by 13.8 visits per year, which would lead to annual savings of 1 237€ per 1000 working-age inhabitants. As to specialised health care, a better quality of life would decrease visits by 9.9 visits per year, which would lead to savings of 2 713 €, similarly.

According to marginal effect data, an increase of one unit in the sense of coherence[16] decreases mental health care utilisation by an average of 0.45%. Mental health visits in primary health care would consequently decrease by 1.9 visits, which would mean 155 € on the average per 1000 working-age inhabitants. The corresponding figures for specialised health care would be 1.3 visits and 370 € per 1000 working-age inhabitants. The estimated cost savings through better quality of life and coherence amount to 3.75% of the average costs of mental health services per year per 1000 working-aged persons.

3.6 Education and active participation

One of the goals of a pay-subsidised period as well as one of those of a rehabilitative work activity period is the clarification of participants' own objectives and their seeking access to vocational education, which is hoped to lead to employment. According to the tentative results of a survey carried out under the project *Tuloksekas työllistäminen – Productive Employment Services*

14 The marginal effect tells us how much the probability increases that the dependent variable equals 1 when the explanatory variable is increased by one unit (see e.g. Tammi & Saastamoinen 2013). In the case of the Antonovsky SOC-13 social coherence scale, an increase of one unit is understood as a one-point increase in coherence.

15 We formed a dichotomous variable out of the EuroHIS-Qol 8-item index for our regression analysis and marginal effects study. In this two-class variable, the value 0 (zero) is the poorer level of wellbeing (respondent's EuroHIS-Qol 8-item index average ≤ 3) and the value 1 (one) is the better level of wellbeing (respondent's EuroHIS-Qol 8-item index average > 3). In the first class (dichotomous variable value equals 0), the respondents' own ratings of their quality of life are close to poor or very poor, and in the latter class (dichotomous variable value equals 1), they are good or excellent. In this case, marginal effects multiplied by 100 give us the approximate percentage of change when the explanatory dichotomous variable value changes from 0 to 1 (see e.g. Palviainen 2014).

16 Sense of coherence is described in two dimensions here instead of the three dimensions included in the SOC-13 social coherence scale. We included the dimensions of comprehensibility and manageability in our analyses, excluding the dimension of meaningfulness. This choice was due to our study of the statistical significances of different dimensions using the *Terveys 2011* data as well as e.g. the results of Jaana Vastamäki's study (2009).

(Jolkkonen & Kurvinen 2014), slightly fewer than one half of participants found that their goals became more clarified and one third became more interested in seeking an education. Vocational education is significant for the person's career and visible later as productivity. The differences between the lengths of individuals' careers at different educational levels vary per study. Pekka Myrskylä (2012, 11) estimates that men with a basic level education work 6.8 years less than do men with an upper secondary degree, and that the difference is greater for women – 10.2 years of work. According to the report by Noora Järnefelt (2013), compiled on the basis of the earnings register by the Finnish Centre for Pensions, the actual differences in the careers of people of different educational levels are much smaller. The longest careers were found where people held tertiary degrees and had researcher training; the shortest careers were found where people had only basic training. However, the difference between the longest and shortest spans of working years among the educational groups was only two years for men and three years for women. The benefits of education, however significant, are gained only over the years and we do not include them in the calculations in this study, the scope of which is one year.

We also assume that during a rehabilitative work activity period, coping with life improves, social contacts become more frequent, and as a consequence, civil participation increases, causing economic consequences. The activities we refer to include e.g. supporting and helping the near and dear, taking part in children's hobbies, and voluntary work. The lack or scarcity of such activities will sooner or later cause service needs and costs for the public sector. In the study by von Hertzen-Oosi, Vaittinen, Ruoppila and Virtanen (2010, 49), pay-subsidised employers in the third sector estimated that slightly more than 80% of their pay-subsidised employees had their social skills improved at least somewhat, and about half of the employees decreased their substance abuse during the pay-subsidised period. We can interpret these changes as supporting civil participation. However, we do not evaluate the economic benefits of civil participation in this study, because the data are deficient. We still consider the benefits significant and in need of further study.

4 RESULTS

4.1 Highest-level increased pay subsidy – results and sensitivity analysis

The additional costs of a highest-level increased pay subsidy intervention incurred by employers (support and guidance during subsidised periods), TE Offices (client work etc.) and the public sector (income transfers) amounted to approximately 747 € per participant per month. The additional costs of a 273-person group during a pay-subsidised period totalled approximately 1.7 million euros. The income transfer costs of the public sector (the state and municipalities) increased by 72% (977 151 €) compared to unemployment. (Appendix 9.)

The savings in income transfers during the year immediately following the pay-subsidised periods amounted to approximately 9.2% (25 000 €) for the 37 individuals who continued in subsidised employment on the standard subsidy. No payments were required for the 19 persons that found employment in the open labour market, and therefore, the savings totalled 139 000 €. The savings in primary and specialised mental health care totalled 371 € considering the complete group of participants of this pay subsidy measure. In other words, on the basis of the information available, the improved quality of life (for 15% of participants) and the improved sense of coherence (1.5 points) decreased the costs of mental health care services by approximately 0.6-1.2% for the group of participants (n=273) of the pay subsidy measure during the year following the intervention. (Appendix 10.)

The productivity gain of the employer sector was approximately 2.36 million euros during a period of the highest-level increased pay subsidy. After intervention, the productivity gain of the individuals who continued in subsidised employment on the standard subsidy was slightly over 0.60 million euros, and that of the individuals who found employment in the open labour market, 0.52 million euros. The productivity gain of a highest-level increased pay subsidy intervention in the subsidised period and the following year – a total of approximately 3.45 million euros – suffices to cover the net costs of the intervention by more than double.

The sensitivity analysis for the highest-level increased pay subsidy measure was conducted by varying the values of the employment parameters and by calculating the maximum savings due to the reduction in mental health care utilisation, using the confidence intervals of the marginal effects of quality of life and sense of coherence. Cost parameter values were not varied because the additional costs of income transfers depend almost wholly on legislation. In addition, there was no information available concerning such costs of the pay subsidy measure on which the variation of parameter values could have been founded.

The employment parameter values were obtained from seven different employment projects funded by the North Karelian ELY Centre (see above, Chapter 3.1.2). The target group in the report by von Hertzen-Oosi et al. (2010, 25–26) included all third-sector recipients of the pay subsidy in 2006 and all unemployed job seekers, who included all recipients of the pay subsidy, not only the recipients of the highest-level increased pay subsidy. According to that report, twelve months after a pay-subsidised period, 3.9% of the participants were employed and 28.6% were again participating in an active intervention. According to Kela's labour market subsidy monitoring results (Kela 2014d), as much as 22.4% of participants of active interventions in 2011 had pay-subsidised placements, so we may estimate pay-subsidised employment to have been 6.4%[17]. Compared to the basic model, Model A shows net costs increasing and productivity gain decreasing, but the net cost is still clearly positive. (Table 2, Model A.)

Model B assumes that the pay subsidy compensates for employers the decreased productivity. Therefore, the productivity gain of pay-subsidised employment can be calculated by deducting the highest-level increased

17   Calculation 28.6 x 22.4/100.

pay subsidies from the labour costs (which describe the productivity) of pay-subsidised employees. Because the pay of highest-level increased pay-subsidised employee is often calculated to make the pay subsidy cover the labour costs, the productivity gain of such work equals zero. Only those employed in the open labour market after the measure bring about any productivity gain; productivity remains at the level of about a third of the net costs, which in turn remain at the level of the basic model. The net benefit is negative – net costs exceed productivity gain by approximately one million euros.

Model C was built on Model B by asking what portion of individuals participating in a pay-subsidised period should obtain employment in the open labour market in order for the additional costs of the measure to be entirely covered by cost savings and productivity gain, if the productivity of the pay-subsidised period were considered to be zero. It was found that for this to occur, 17.2% of pay-subsidised participants must obtain employment in the open labour market. (Table 2, Model C.)

Finally, we created Model D by adding to Model C the maximum savings due to the reduction in mental health care utilisation, estimated using the confidence intervals of the marginal effects of quality of life and sense of coherence. According to the confidence interval, a better quality of life decreases mental health care utilisation by 6.2% (583 €; in the basic model 3.7%, 371 €) maximum. Because mental health care cost savings still remained marginal, we added the assumption that quality of life would improve for everyone (n=273), which made the maximum savings 2 261 €. The increased mental health care cost savings in Model D cause the targeted employment in the open labour market to be decreased by as little as 0.02 percentage units compared to Model C.

The sensitivity analysis (Table 2) shows that the parameters applied in the basic model rather over-estimate than under-estimate the net benefit. This is especially related to placements after pay-subsidised periods and the evaluation of productivity gain during pay-subsidised periods.

Table 2. Sensitivity analysis models for (highest-level increased) pay subsidy measures

Highest-level increased pay subsidy *Cost or consequence*	Basic model %	n	€	Model A[1] %	n	€	Model B[2] %	n	€	Model C[3] %	n	€	Model D[4] %	n	€
(Additional) cost of pay subsidy measure		273	674 955			674 955			674 955			674 955			674 955
Additional income transfer cost		273	977 151			977 151			977 151			977 151			977 151
Savings after measure (one year)															
- income transfers															
- in pay-subsidised employment	13.7	37	-24 944	6.4	17	-11 461	13.7	37	-24 944	13.7	37	-24 944	13.7	37	-24 944
- in open labour market	7.1	19	-138 987	3.9	11	-80 466	7.1	19	-138 987	17.21	47	-343 662	17.19	47	-343 267
- mental health services		273	-371			-371			-371			-371		273	-2 261
Net cost			**1 487 805**			**1 559 809**			**1 487 805**			**1 283 129**			**1 281 634**
Productivity gain															
During measure			2 325 138			2 325 138			0			0			0
After measure															
- in pay-subsidised employment	13.7	37	602 306	6.4	17	276 735	13.7	37	0	13.7	37	0	13.7	37	0
- employed in open labour market	7.1	19	518 924	3.9	11	300 430	7.1	19	518 924	17.21	47	1 283 108	17.19	47	1 281 633
Total			3 446 368			2 902 303			518 924			1 283 108			1 281 633
Net benefit			**1 958 563**			**1 342 494**			**-968 881**			**-21**			**-1**

[1] Employment parameters in Model A (persons employed after measure either pay-subsidised or in open labour market) are based on the report by von Hertzen-Oosi et al. (2010) and the monitoring of the labour market subsidy by Kela (2014d).

[2] Model B presumes the productivity gain of pay-subsidised work to equal labour costs minus pay subsidy. Because the pay of a pay-subsidised employee is generally calculated to make the pay subsidy cover the labour costs, the productivity gain of such work equals zero.

[3] Model C uses the presumption of Model B for the productivity gain of pay-subsidised work. The portion of participants (n=273) in a labour market measure who find work in open labour market must then come up to approximately 17.2% (47 persons) for the additional costs of the measure to be covered by the cost savings and productivity gain.

[4] Model D combines the presumptions of Models A and B and adds maximum savings (2 261 €), due to the reduction in mental health care utilisation, estimated on the basis of the confidence intervals of the marginal effects of quality of life and sense of coherence.

4.2 Rehabilitative work activity – results and sensitivity analysis

In 2011, the additional intervention costs during a period of rehabilitative work activity amounted to 82 million euros for 17 000 persons, including, in addition to service production costs, the maintenance allowance, supplementary amount to the labour market subsidy, premium grant and travel allowance. The unemployment security obtainable during rehabilitative work activity tends to average more than during unemployment. These additional costs of income transfers totalled about 12 million euros. During the year following the intervention, additional costs of more than 23 million euros were accrued due to the 4 250 individuals continuing in rehabilitative work activity, and costs of approximately 5.5 million euros were accrued due to the 510 individuals employed under the highest-level increased pay subsidy system. (Appendix 11.)

Savings in income transfers during the year after intervention amounted to 3.8 million euros for the 680 individuals employed either pay-subsidised or in the open labour market. Mental health visits in primary and specialised

health care by participants of rehabilitative work activity decreased, and the respective costs decreased by up to 23 000 euros (1.2%). When we deduct the savings from the costs, we obtain the net cost of slightly over 119 million euros. (Appendix 12.)

The productivity gain of a period of rehabilitative work activity was about 52.7 million euros, and after intervention, the productivity gain of individuals continuing in rehabilitative work activity was about 13.2 million euros. The productivity gain of individuals employed under the highest-level increased pay subsidy system was slightly more than 4.3 million euros, and that of those employed in the open labour market was more than 5 million euros. This productivity gain did not suffice to cover the net cost, and there were approximately 44 million euros left to be covered for the period studied.

The starting point of the sensitivity analysis of a rehabilitative work activity measure differs somewhat from that of a pay-subsidy measure, because the net benefit, according to the results we presented above, is negative in the basic model. In other words, the net costs exceed the estimated productivity gain by approximately 44 million euros. Model A of the sensitivity analysis asks what percentage of people should obtain employment in the open labour market after a rehabilitative work activity period in order for productivity gain to equal net costs (Table 3 - about 19%.). The same question is posed relating to pay-subsidised employment (Table 3, Model B - about 54%) and both pay-subsidised and open-labour-market employment (Table 3, Model C – 3% and 18.5%). Contrary to the basic model, all these models assume the productivity gain of rehabilitative work activity to be zero during the measure as well as after the measure. The additional costs of income transfers in the case of rehabilitative work activity depend on legislation just as they do in the case of pay-subsidy measures. In addition, the operating costs, amounting to approximately 857€ per month per participant, include statutory costs and costs of many different parties; therefore, we chose to keep the cost parameter values unchanged in our sensitivity analysis. However, changing employment parameters in Model C influences costs after the measure so that costs due to the pay subsidy measure and the pay subsidy (income transfer) increase somewhat in comparison to the basic model.

The sensitivity analysis of rehabilitative work activity shows that if savings for social and health care services and benefits due to active participation

cannot be verified, productivity gain covers net costs only when relatively high employment parameter values are applied.

Table 3. Sensitivity analysis models for the rehabilitative work activity measure

Rehabilitative work activity Cost or consequence	Basic model			Model A[1]			Model B[2]			Model C[3]		
	%	n	1 000 €	%	n	1 000 €	%	n	1 000 €	%	n	1 000 €
(Additional) cost of pay subsidy measure		17 000	81 987			81 987			81 987			81 987
Additional income transfer cost		17 000	11 826			11 826			11 826			11 826
Costs after measure (one year)												
- continue in rehabilitative work activity	25.0	4 250	20 497	25.0	4250	20 497	25.0	4250	20 497	25.0	4250	20 497
- additional income transfer cost		4 250	2 956		4250	2 956		4250	2 956		4250	2 956
- find pay-subsidised employment (highest-level increased)	3.0	510	1 261	3.0	510	1 261	3.0	510	1 261	3.0	511	1 263
- pay subsidy (highest-level increased)		510	4 344		510	4 344		510	4 344		511	4 352
Savings after measure (one year)												
- income transfers												
- in pay-subsidised employment	3.0	510	-2 518	3.0	510	-2 518	53.7	9131	-45 086	3.0	511	-2 523
- in open labour market	1.0	170	-1 244	19.2	3 267	-23 898	0.0	0	0	18.5	3149	-23 035
- mental health services			-23			-23			-23			-23
Net costs			**119 086**			**96 431**			**77 762**			**97 300**
Productivity gain												
During measure			52 734			0			0			0
After measure												
- in rehabilitative work activity	25.0	4 250	13 184	0.0	0	0	0.0	0	0	0.0	0	0
- in pay-subsidised employment	3.0	510	4 344	0.0	0	0	53.7	9131	77 769	3.0	511	4 352
- employed in open labour market	1.0	170	5 017	19.2	3 267	96 423	0.0	0	0	18.5	3149	92 940
Total			75 279			96 423			77 769			97 292
Net benefit			**-43 807**			**-8**			**7**			**-8**

[1] In Model A, the productivity gain of rehabilitative work activity and pay-subsidised work equals zero. The number of persons employed in open labour market must be 3 267 (19.2%) for the net costs to equal the productivity gain of these persons.

[2] In Model B, the productivity gain of rehabilitative work activity is zero, and no clients find employment in open labour market. For productivity gain to cover net costs, 53.7 % of participants in rehabilitative work activity must find subsidised employment.

[3] In Model C, the productivity gain of rehabilitative work activity is still zero. For net costs to be covered, 3.0% must find subsidised employment and 18.5% must find employment in open labour market.

4.3 Distribution of income transfer costs and wage costs

The total income transfer costs and wage costs of a pay-subsidised period and the following year are rather evenly distributed among domestic households (38%), municipalities (32%) and social insurance providers (30%). Receivers of highest-level increased pay subsidy as well as persons in pay-subsidised employment pay less in municipal taxes than do the unemployed. In other words, the taxation of domestic households is lighter and, therefore, municipal tax accrual is less in the case of subsidised employment than in the case of unemployment. The decrease in the municipal tax accrual is compensated through the fact that municipal portions of labour market subsidy payments are lifted and, therefore, municipalities benefit from pay-

subsidised measures and the employment outcomes of these measures both during an intervention and the year immediately following it. The payers are mostly employers (35%) and the state (65%). The state is not required to pay labour market subsidy, but the pay subsidy it is required to pay is larger than the labour market subsidy would be. Because accruals from taxes and payments do not suffice to cover the pay subsidy, the state is required to assume the role of the largest payer. (Figure 6 and Appendix 13).
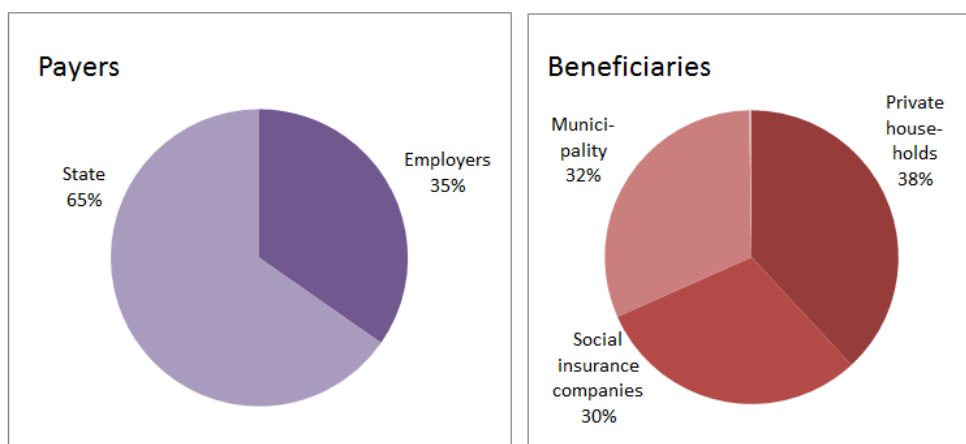
Figure 6. Distribution of the income transfer and wage costs of the highest-level increased pay subsidy for the period of the measure and the following year

The greatest beneficiaries of rehabilitative work activity are domestic households (23%) and municipalities (73%). Similar to pay-subsidised measures, the state is the largest payer (91%) in this case as well while employers cover the rest (9%). When the time spent by participants for rehabilitative work activity is included as an opportunity cost, the distribution changes. Because opportunity cost calculations make visible the value of the work for which participants of rehabilitative work activity nevertheless receive no compensation, employers who obtain this "free" work are seen as beneficiaries (60%). Other beneficiaries include municipalities (40%) even though the municipal tax accrual is one million euros less than it would be in the situation in which the value of the work (opportunity cost) of the participants of rehabilitative work activity would be paid for in wages. The greatest payer is still the state (53%) that loses 1.1 million euros of income from taxes and payments per work activity period and its following year. In opportunity cost calculations, payers also include participants of

rehabilitative work activity (34%) who are not compensated for their work, the cost of which is estimated to be 48.4 million euros. Payers include social insurance companies as well (13%). Social insurance companies do not get approximately 15.3 million euros of social insurance contributions compared to the situation in which work was compensated with wages. (Figures 7–8 and Appendix 14.)
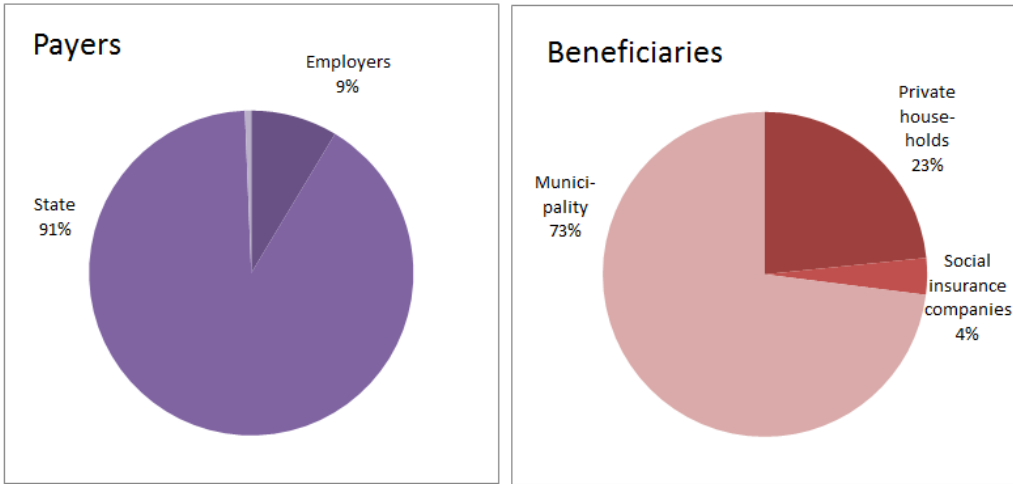
Figure 7. Distribution of the income transfer and wage costs of rehabilitative work activity for the period of the measure and the following year
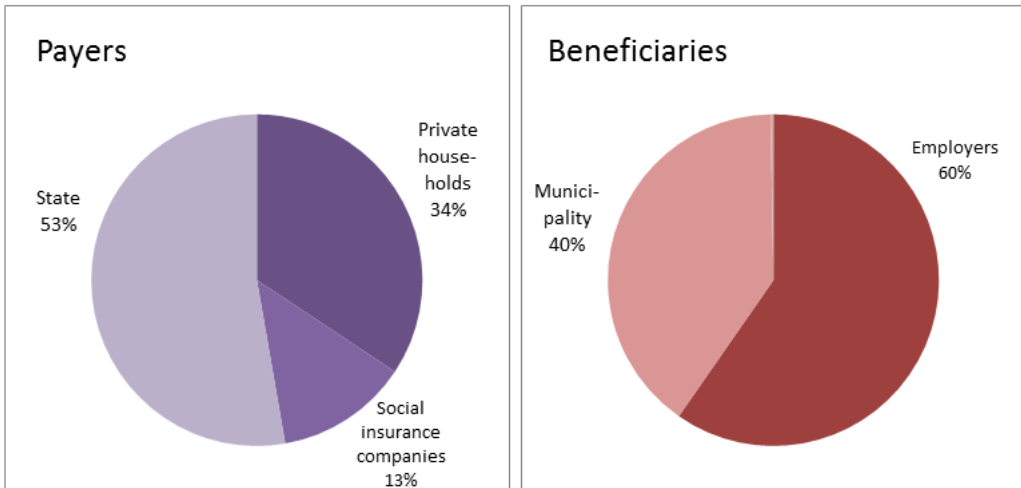
Figure 8. Distribution of the income transfer and wage costs of rehabilitative work activity during the period of the measure and for one year after it, with the value of the unpaid work evaluated as opportunity costs

The above examines the distribution of the costs of income transfers and wages among the different sectors. The distribution of these costs is also influenced by the reimbursement to the municipality by the state for the costs of arranging rehabilitative work activity; the compensation by the state is 10.09 euros per day of activity per participant. Calculated for an average 5.63-month period of rehabilitative work activity, the compensation by the state is 20.8 million euros (n=17 000, in year 2011 prices) and for those who continue in rehabilitative work activity after intervention (n=4 250), it is approximately 5.2 million euros. The distribution of the net benefits including compensation by the state is presented in Appendix 15.

4.4 Results summarised

These results can be considered as rough indicators of the economic consequences of the highest-level increased pay subsidy and rehabilitative work activity. Estimations founded on models depend on the amount and quality of available information. Both researchers and decision makers need more information concerning the outcomes of measures. The problem in studying the effectiveness of employment-promotion measures is, how to differentiate the outcomes of the studied measure from those of other factors, such as factors associated to the person, general economic circumstances and employment situation. In the Netherlands, for person-related factors, the solution is the *standardised re-employment ratio.* The standardised re-employment ratio answers the question whether or not a certain employment promotion measure leads to more individuals being employed than would be the expectation on the basis of the personal characteristics (age, marital status, educational level, duration of unemployment, mental and physical health, and motivation) of the participants of that measure. (Schuring & Burdorf 2014.) In addition, studies on wellbeing effects are insufficient and primarily qualitative. Earlier research indicates that employment promotion measures may impact individuals' wellbeing in a positive manner. In order to utilise information concerning the wellbeing outcomes of employment promotion measures in economic evaluation we must be able to show and measure the quantitative changes in the wellbeing of the participants. The researchers Arja Jolkkonen and Arja Kurvinen (2014) have developed and tested a measuring instrument *Työllistymisen voimavarat* (Resources for Employability), the

origins of which are found in the theory of empowerment. This instrument is built up of other current, tested instruments as well as indicators specially drafted for the purpose. These indicators are based on research data and observations concerning the outcomes of employment promotion measures. The results obtained from the try-outs of the instrument were applied in this study, because other quantitative information was not available relating to the relevant wellbeing changes in Finland. In addition to the above, it remains to be solved how the long-term outcomes of employment promotion measures could be made visible.

5 Discussion

The aim of active labour market policies is inclusion in the labour market, and employment leads to immediate economic consequences. Services for the long-term unemployed, in particular, have been criticised for not having advanced employment. However, in addition to employment, services for the long-term unemployed aim at social inclusion. Unemployment weakens both physiological and mental health, and problems with wellbeing in the form of physiological or mental health issues and coping with life are often associated with prolonged unemployment. A person's wellbeing should be improved before his or her re-employment is possible.

Physical and mental wellbeing, social inclusion and active participation have been argued to have positive economic impacts even without employment. We studied the economic consequences of labour market measures for the long-term unemployed, trying also to calculate the economic impacts of the wellbeing-related outcomes of such measures.

The labour market and social policy measures studied by us were the highest-level increased pay subsidy and rehabilitative work activity. These measures are intended for the activation of such job-seekers who need a great deal of support and guidance with wellbeing and coping with life as well as help with their employment. Rehabilitative work activity is positioned on the borderline between active social policy and employment policy. In Finland, it is considered to be more a constituent of social policy than of employment policy and its key concept is the close cooperation between municipalities and employment offices.

From the perspective of social policy, rehabilitative work activity sets the participation in this activity as the condition for receiving social or

employment benefits. In other words, rehabilitative work activity reduces the possibility of an individual receiving a gratuitous benefit, treating benefits and activation under the principle "there's no such thing as a free lunch". However, this principle does not necessarily boost employment.

Literature suggests that customers' experiences of activation are conflicting, but on the average, they are satisfied (Sandelin 2014). The most usual measure after rehabilitative work activity is a new period of rehabilitative work activity. A small number of participants find their way to pay-subsidised employment, but only very few are employed without subsidy. In addition, persons who are employed under the highest-level increased pay subsidy system or in subsidised employment in the third sector transfer to the open labour market less often than do persons in other forms of subsidised employment. Neither does the maximum duration of employment under the highest-level increased pay subsidy system increase participants' employability. Even though transfers to the open labour market are difficult, both measures feature characteristics that support coping and strengthen participants' personal resources and wellbeing. They help people cope with life and everyday management through e.g. the regular daily schedule they offer. Therefore, it is logical to take the view that activation measures should be seen in the wider perspectives of wellbeing and the prevention of exclusion, not only in the perspective of immediate employability.

This study applied the simple decision modelling method, based on economic evaluation, for the evaluation of economic consequences. The aim was also to test the applicability of the method for the evaluation of employment-promotion measures. In the model, we used information from previous research, secondary data, statistics and expert opinions. As the method does not require primary data, it is flexible and fast to use when evaluating interventions that have long-term, hard-to-measure outcomes. Although the potential pathways to outcomes and consequences were quite clearly describable, our special challenge was the shortage of quantitative evidence of these outcomes and of the effectiveness of the target activity. In particular, the data of social wellbeing and inclusion outcomes were limited. Therefore, it was challenging to estimate the probabilities in order to populate the model. Although the model is a useful tool, the results it yields are only as good as the data used for populating the model.

The data available to us only enabled the estimation of the savings and the change, due to increasing wellbeing, in mental health care utilisation. The savings in mental health care were small compared to, for example, the impacts on productivity. It is important to note that mental health is significant for employment, education and civil participation. If we could include all these factors in our model and if the time horizon of the model were longer, the economic consequences of wellbeing would be multiplied.

In addition, due to the shortness of the time span, the economic consequences of education could not be taken into account. It is also necessary to highlight the fact that the data in this model are follow-up data and not effectiveness data because such data were not available. This means that we do not know, for example, what portion of the actualised cases of re-employment would have taken place even without the intervention.

The work involved challenges which we described above. Despite the challenges, our results lead us to believe that subsidised employment with support and guidance for the long-term unemployed is not as expensive as is often believed. According to these results, the net cost per rehabilitative work activity participant averages 7000 euros per subsidised period plus one immediately following year. If rehabilitative work activity helps participants in their coping with life and everyday management, promotes their civil participation and the wellbeing of their near and dear, and promotes even the wellbeing of their communities, then 7000€ does not seem to be a large amount of money. The researchers believe that if more data had been available for calculating the consequences of active participation, it would have shown the net benefit to be positive.

In order to make possible the obtaining of more precise results, the various parties, such as the employment administration, municipalities and other entities who carry out employment measures, should establish systematic, harmonised methods for collecting and registering data on the outcomes of employment promotion measures. In addition, robust effectiveness research is required. The above elements are necessary for economic evaluations as well.

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Appendix 1. Average costs and subsidies of rehabilitative work activity per participant in 2011 prices

Perspective	Additional costs of activity	€/month/participant	Calculation	Sources
Municipality	Activation plan preparation, check and update	43.56	Price index of public expenditure * costs of activation plan / average duration of rehabilitative work activity in months ((120.4 / 103.6) x 211 € / 5.63)	Kallio et al. 2008
	Services improving employability (social, health and other services)	26.89	Costs of services improving employability / average duration of rehabilitative work activity in months / number of participants in rehabilitative work activity (2 573 206 € / 5.63 / 17 000)	Kapiainen et al. 2014; Karjalainen & Karjalainen 2010
	Production costs for rehabilitative work activity *Gross expenses: guidance, administration, service acquisitions, materials, equipment and goods, rooms and facilities, depreciations and imputed costs*	617.58	Price index of public expenditure * costs of guidance, administration etc. per activity day* average number of activity days per month ((120.4 / 103.6) x 28.74 € x 18.49)	Kallio et al. 2008; OSF 2014b
TE Office	Activation plan preparation, check and update	20.43	Time spent on activation plan preparation etc. * hourly wages including social security costs / average duration of rehabilitative work activity in months (4.2h x 27.39 € / 5.63)	The Employment and Economic Development Office (TE Office)
	Total additional costs in average	708.45		
	Subsidies			
Kela	Maintenance allowance Supplementary amounts	9 201 000 € 816 000 €		Finnish Financial Supervisory Authority & Kela 2012; Kela 2014b. Kela's unemployment security benefits on the basis of grounds for compensation
Municipality	Premium grant Travel allowance	1 900 000 € 2 264 000 €		Virtanen & Kiuru 2014
	Total additional subsidies in average	148.17	Maintenance allowance, supplementary amounts, premium grant, travel allowance in total / average duration of rehabilitative work activity in months / number of participants in rehabilitative work activity (14 181 000 € / 5.63 / 17 000)	
	Total in average	856.62		

Appendix 2. Information on key variables from Terveys 2011 - data (number of observations in parentheses)

Variable	N	%
sex (8107)		
male	4 048	49.9
female	4 059	50.1
age (8107)		
18-24	1 278	15.7
25-34	1 652	20.4
35-44	1 523	18.8
45-54	1 716	21.2
55-65	1 938	23.9
average age in 2011	41.5	
special responsibility area in Finnish health care system (8098 / 8107)		
HYKS	2 776	34.3
TYKS	1 058	13.1
TAYS	1 821	22.5
KYS	1 300	16.1
OYS	1 143	14.1
marital status (7983 / 8107)		
single / unmarried	3 424	42.9
married	3 556	44.5
widowed	871	10.9
other (including categories "registered partnership" and "other")	132	1.7
education (5157 / 8107)		
basic education (comprehensive school)	923	17.9
upper secondary education	1 898	36.8
higher education	2 336	45.3
occupational status (4522 / 8107)		
employee	3 774	83.5
entrepreneur / self-employed	554	12.2
other	194	4.3
labour market status (4650 / 8107)		
employed	2 452	52.4
student	300	6.4
retired	1 524	32.6
unemployed / laid-off	206	4.4
other	199	4.3
employed during past 12 months (3534 / 8107)		
no	727	20.6
yes	2 807	70.4
income (3409 / 8107)		
unable to provide for oneself	85	2.5
many difficulties in providing for oneself	361	10.6
some difficulties in providing for oneself	801	23.5
income covers expenses sufficiently	1 421	41.7
income covers expenses more than sufficiently	741	21.7
long-term illness (5293 / 8107)		
yes	2 370	44.8
no	2 923	55.2
feelings of loneliness (3724 / 8107)		
never or rarely	2 636	70.8
sometimes	860	23.1
quite often or always	228	6.1

Appendix 3. Utilisation of health care and key measures of quality of life and sense of coherence in Terveys 2011 data

Variable	N	
Visits to doctor, past 12 months (yes)	5 440	51 %
Number of visits to doctor, past 12 months	5 440	1.9
Mental health service visits, past 12 months (yes)	3 531	9.60%
Hospital ward visits, past 12 months (yes)	5 544	8.80%
Number of days in hospital ward, past 12 months	5 544	0.4
Self-rated health [1]	4 682	1.79 (mean)
EUROHIS-QOL 8-item index	3 597	3.99 (mean)
Antonovsky SOC-13, all three dimensions	3 242	66.7 (mean)
Antonovsky SOC-13, comprehensibility & manageability	3 247	53.1 (mean)

[1] Self-rated health was measured by asking "In general, how would you rate your health?". Five response options were "1 = good; 2 = fairly good; 3 = fair; 4 = not very good; 5 = poor". These categories were reduced to three and combined in the following manner: 1 = good or fairly good; 2 = fair and 3 = not very good or poor.

Appendix 4. Factors explaining utilisation of health care services in Terveys 2011-data (logistic regression)

Dependent variable	N, coef. of determ.	Independent variables and statistical significance[1]
Visits to doctor, past 12 months (dichotomous variable, no-yes)	n = 2 017; R^2 = 4.1%	- poorer health[2] ** - better quality of life[3] * - person's higher level of education * - long-term illness ***
Mental health service visits, past 12 months (dichotomous variable, no-yes)	n = 2 115; R^2 = 17.6%	- poorer quality of life * - poorer sense of coherence[5] *** - long-term illness **
Hospital ward visist, past 12 months (dichotomous variable, no-yes)	n = 2 089; R^2 = 6.7%	- poorer health[6] *** - not employed during past 12 months ** - long-term illness * - loneliness[7] **

[1] * = $p < 0.05$; ** = $p < 0.01$; *** = $p < 0.001$
[2] Self-rated health, 3-point response scale.
[3] EUROHIS-QOL 8-item index, dichotomous variable.
[4] EUROHIS-QOL 8-item index, dichotomous variable.
[5] Sense of coherence, 2-dimensional.
[6] Self-rated health, 3-point response scale.
[7] Loneliness, 3-point response scale. Original variable has 5-point response scale to a question "Do you feel lonely?". Response options were "1= never; 2 = very rarely; 3 = seldom; 4 = fairly often; 5 = always". These categories were reduced to three and combined in the following manner: 1 = never or rarely; 2 = sometimes and 3 = fairly often or always.

Appendix 5. Factors explaining number of health care service visits in Terveys 2011 -data (negative binomial regression)

Dependent variable	N, coef. of determ.	Independent variables and statistical significance[1]
Visits to doctor, past 12 months	n = 2 017; R^2 = 2.3%	- poorer health ***
		- not employed during past 12 months **
		- long-term illness ***
Number of days in hospital ward, past 12 months	n = 2 089; R^2 = 3.6%	- poorer health **
		- poorer sense of coherence **
		- marital status (persons in category "others" had more visits than persons in category "single / unmarried")**
		- not employed during past 12 months *
		- long-term illness *

[1] * = $p < 0.05$; ** = $p < 0.01$; *** = $p < 0.001$

Please note. Terveys 2011 data includes several variables indicating the number visits in mental health care services (health care center, occupational health care, student health care services, mental health clinic / psychiatric clinic, substance abuse clinic, private physician / therapist, psychiatric hospital, other hospital and elsewhere). However, due to the large number of missing values in these variables, no further analysis was conducted on them.

Appendix 6. Mental health service utilisation (logistic regression) with marginal effects for quality of life and sense of coherence

Logistic regression

Number of observations = 2115, Pseudo R2 = 0.1756

Mental health service utilisation	Odds Ratio	z	P > |z|	[95% confidence interval]	
EUROHIS-QOL 8-item index, dichotomous	0.53	-2.18	**0.029**	0.30	0.94
Sense of coherence, 2-dimensional	0.92	-6.03	**0.000**	0.89	0.94
Self-rated health, 3-point response scale					
fairly good / good*	*	*	*	*	*
fair	0.71	-1.10	0.273	0.38	1.31
not very good / poor	1.39	0.99	0.322	0.72	2.69
Sex	1.02	0.08	0.934	0.69	1.50
Age	1.00	0.44	0.660	0.98	1.02
Special responsibility in Finnish health care system					
HYKS*	*	*	*	*	*
TYKS	1.58	1.53	0.127	0.88	2.86
TAYS	1.38	1.23	0.220	0.82	2.32
KYS	1.62	1.78	0.075	0.95	2.77
OYS	0.80	-0.64	0.525	0.40	1.59
Marital status, 4-category response scale					
single / unmarried*	*	*	*	*	*
married	1.00	-0.01	0.995	0.62	1.62
widowed	0.74	-0.83	0.404	0.37	1.50
other	0.33	-1.01	0.313	0.04	2.85
Education, 3-category response scale					
basic education (comprehensive school)*	*	*	*	*	*
upper secondary education	0.63	-1.63	0.104	0.36	1.10
higher education	0.71	-1.22	0.223	0.40	1.24
Employed during past 12 months (yes)*	*	*	*	*	*
Employed during past 12 months (no)	0.75	-1.25	0.212	0.47	1.18
Long-term illness (no)*	*	*	*	*	*
Long-term illness (yes)	1.79	2.62	**0.009**	1.16	2.78
Income					
income covers expenses more than sufficiently *	*	*	*	*	*
income covers expenses sufficiently	0.88	-0.41	0.684	0.49	1.60
some difficulties in providing for oneself	1.25	0.73	0.462	0.69	2.29
many difficulties in providing for oneself	1.36	0.87	0.384	0.68	2.71
unable to provide for oneself	1.65	1.10	0.272	0.68	4.01
Feelings of loneliness, 3-point response scale					
never / rarely*	*	*	*	*	*
sometimes	1.29	1.07	0.286	0.81	2.07
quite often / always	1.69	1.53	0.126	0.86	3.31

* baseline category

Marginal effects for quality of life and sense of coherence

Number of observations = 2115

Variable	Marginal effect	z	P>|z|	[95 % confidence interval]	
EuroHIS-8, dichotomous	-0,0329	-2,2	0,028	-0,062	-0,004
Sense of coherence, 2-dimensional	-0,0045	-5,8	0,000	-0,006	-0,003

Appendix 7. Essential parameters for costs, outcomes and consequences of highest-level increased pay subsidy, in 2011 prices

Parameter	Description	Value used for analysis	Sources
Costs of the pay subsidy			
Costs of the pay subsidy for organisations offering pay-subsidised support and work	Costs estimated on the basis of the parties' employment aims, estimated pay-subsidised months, and costs approved in funding decisions	286.01 €/person employed/month	Centre for Economic Development, Transport and the Environment, North Karelia: Funding decisions for labour market projects (n=7)
Costs of the pay subsidy for the TE Office	Administrative costs of the pay subsidy for the TE Office (including personnel costs only; not machines, equipment etc.)	19.22 €/employed person/subsidised month	Experts in Centre for Economic Development, Transport and the Environment, North Karelia: OSF 2014a –Valtiovarainministeriö (VM) 2014
Duration of pay subsidy period	Average period in highest-level pay-subsidised employment	8.1 (subsidised) months	Centre for Economic Development, Transport and the Environment, North Karelia; Customer service registry of TE Offices (URA)
Number of persons employed on pay subsidy	Number of persons employed under the highest-level pay subsidy system in this study	273	Centre for Economic Development, Transport and the Environment, North Karelia; Customer service registry of TE Offices (URA)
Highest-level increased pay subsidy	Subsidy paid to an employer to compensate for the wages of an unemployed jobseeker who is not easily employable due to e.g. prolonged unemployment	1 051.48 €/month	Centre for Economic Development, Transport and the Environment, North Karelia
Labour market subsidy	Unemployment benefit paid by the Social Insurance Institution of Finland (Kela) when the unemployed person is not entitled to any basic or earnings-related unemployment allowance	609.59 €/month	Kela 2014a
Employment			
Continuing in subsidised employment	Average number of persons in the study group in pay-subsidised employment after the pay-subsidised period, 6 months later, and 12 months later	13.7% (37 persons)	Centre for Economic Development, Transport and the Environment, North Karelia; Customer service registry of TE Offices (URA)
Employment in the open labour market	Average number of persons in the study group employed in the open labour market after the pay-subsidised period, 6 months later, and 12 months later	7.1% (19 persons)	Centre for Economic Development, Transport and the Environment, North Karelia; Customer service registry of TE Offices (URA)
Cost savings in mental health care			
Quality of life	Two-class EuroHIS-Qol 8-item index (better quality of life – poorer quality of life)	5.5% decrease in mental health visits/better quality of life	Terveys 2011 data (Health 2011)
		a pay-subsidised period improves the quality of life for 5–15% of participants	Tuloksekas työllistäminen project (Joikkonen & Kurvinen 2014)
		cost savings in primary health care: 23 visits/1 891 €/1000 working-age individuals	Terveys 2011 data (Health 2011); THL 2014 SOTKAnet; Kapiainen et al. 2014
		cost savings in specialised health care: 16.5 visits/4 521 €/1000 working-age individuals	Terveys 2011 data (Health 2011); THL 2014 SOTKAnet; Kapiainen et al. 2014
Sense of coherence	Two-dimensional (comprehensibility and manageability) Antonovsky SOC-13 social coherence scale	0.5% decrease in visits / one point increase	Terveys 2011 data (Health 2011)
		a pay-subsidised period improves a person's sense of coherence by 1-1.5 points	Vastamaki 2009
		cost savings in primary health care: 2.1 visits/172 €/1000 working-age individuals	Terveys 2011 data (Health 2011); THL 2014 SOTKAnet; Kapiainen et al. 2014
		cost savings in specialised health care: 1.5 visits/411 €/1000 working-age individuals	Terveys 2011 data (Health 2011); THL 2014 SOTKAnet; Kapiainen et al. 2014

Appendix 8. Essential parameters for costs, outcomes and consequences of rehabilitative work activity, in 2011 prices

Parameter	Description	Value used for analysis	Sources
Costs of the rehabilitative work activity			
Additional costs of the rehabilitative work activity	Additional costs in average	708.45 €/person/month	Kallio et al. 2008; Kapiainen et al. 2014; Karjalainen & Karjalainen 2010; OSF 2014b
Additional subsidies paid to participants of the rehabilitative work activity	Maintenance allowance, supplementary amounts, premium grant and travel allowance in average	148.17 €/person/month	Finnish Financial Supervisory Authority & Kela 2012; Kela 2014b. Virtanen, Ari & Kiuru, Sirkka 2014
Duration of rehabilitative work activity period	Average period in rehabilitative work activity	5.63 months	Finnish Financial Supervisory Authority & Kela 2012.
Participants in the rehabilitative work activity	Number of persons participating in rehabilitative work activity	17 000	Kela 2014b; Virtanen & Kiuru 2014; Klem 2013; Virtanen 2014
Highest-level increased pay subsidy	Subsidy paid to an employer to compensate for the wages of an unemployed jobseeker who is not easily employable due to e.g. prolonged unemployment	1 051.48 €/month	Centre for Economic Development, Transport and the Environment, North Karelia
Labour market subsidy	Unemployment benefit paid by the Social Insurance Institution of Finland (Kela) when the unemployed person is not entitled to any basic or earnings-related unemployment allowance	609.59 €/month	Kela 2014a
Employment			
Continuing in rehabilitative work activity	Average number of persons in rehabilitative work activity after the measure (one year)	4 250 persons (25%)	Karjalainen & Karjalainen 2010; Klem 2013
Entering a period in subsidised employment	Average number of persons in subsidised employment after the measure (one year)	510 persons (3%)	Karjalainen & Karjalainen 2010; Klem 2014
Employment in the open labour market	Average number of persons in the open labour market after the measure (one year)	170 persons (1%)	Karjalainen & Karjalainen 2010; Klem 2015
Cost savigs in mental health care			
Quality of life	Two-class EuroHIS-Qol 8-item index (better quality of life – poorer quality of life)	5.5% decrease in mental health visits/better quality of life	Terveys 2011 data (Health 2011)
		a rehabilitative work activity period improves the quality of life for 5–15% of participants	Jolkkonen & Kurvinen 2014
		cost savings in primary health care: 23 visits/1 891 €/1000 working-age individuals	Terveys 2011 data (Health 2011); THL 2014 SOTKAnet; Kapiainen et al. 2014
		cost savings in specialised health care: 16.5 visits/4 521 € /1000 working-age individuals	Terveys 2011 data (Health 2011); THL 2014 SOTKAnet; Kapiainen et al. 2014
Sense of coherence	Two-dimensional (comprehensibility and manageability) Antonovsky SOC-13 social coherence scale	0.5% decrease in visits/one point increase	Terveys 2011 data (Health 2011)
		a rehabilitative work activity period improves a person's sense of coherence by 1-1.5 points	Vastamäki 2009
		cost savings in primary health care: 2.1 visits/172 €/1000 working-age individuals	Terveys 2011 data (Health 2011); THL 2014 SOTKAnet; Kapiainen et al. 2014
		cost savings in specialised health care: 1.5 visits/411 €/1000 working-age individuals	Terveys 2011 data (Health 2011); THL 2014 SOTKAnet; Kapiainen et al. 2014

Appendix 9. Costs and economic consequences of the highest-level increased pay subsidy case (n=273)

Cost or consequence	Calculation	€
Measure[1], (additional) cost (8.1 mth, n=273)	273 x 8,1 x (286.01 + 19.22)	674 955
Income transfers, additional cost (highest-level increased pay subsidy – labour market subsidy)	273 x 8.1 x (1 051.48 - 609.59)	977 151
Savings after measure (one year)		
-income transfers		
13.7% in pay-subsidised employment[2] (labour market subsidy - standard pay subsidy)	37 x 12 x (609.59 – 553.41)	-24 944
7.1% in open labour market	19 x 12 x 609.59	-138 987
- mental health care services[3]		-371
Net costs		**1 487 804**
Productivity gain		
During measure (8.1 mth, n=273)[4]	273 x 8.1 x 1051.48	2 325 138
After measure		
- pay-subsidised employment (12 mth, n=37)[5]	37 x 12 x (1 071 x 1.04 x 1.2179)	602 306
- working in open labour market (12 mth, n=19)	19 x 12 x (1 796.90 x 1.04 x 1.2179)	518 924
Productivity gain		**3 446 368**
Net benefit	**productivity gain - net cost**	**1 958 564**

[1] Highest-level increased pay subsidy, 273 persons; duration of pay subsidy averaging 8.1 months + 1 year after measure; third-sector employer; project funding for individual support and guidance; year 2011 prices.

[2] The assumption is that all who continued in pay-subsidised employment were on standard subsidy, because no itemised information was available concerning the type of pay subsidy. In addition, subsidised employment did not necessarily continue under the studied project but could take place e.g. in an enterprise. In 2011, the standard pay subsidy was 25.74 € per day.

[3] Savings in mental health care ranged 196-371 €. Calculations of savings are presented in more detail in Chapter 3.5.3.

[4] The pay of a pay-subsidised employee of an organisation is often calculated so that the maximum pay subsidy covers the pay and the social security costs (Piia Heikkinen, personal notification, 15/12/2014).

[5] Hiring cost includes gross wages and holiday bonus (4%) as well as employer's social security contributions (total 21.79% in 2011).

Appendix 10. Savings in mental health services due to improved quality of life and sense of coherence, the highest-level increased pay subsidy case (n=273)

Highest-level increased pay subsidy Mental health services Year 2011	Visits[1]	Costs[2]	Cost savings							In the study group (n=273)	
			Better quality of life[3]			Stronger sense of coherence[4]					
			Service utilisation -3.3%			Sence of coherence +1 point Service utilisation -0.45 %		Sence of coherence +1.5 point Service utilisation -0.67 %			
			n=1000	n=14 (5%/273)	n=41 (15%/273)	n=1000	n=273	n=1000	n=273	Min	Max
			(ages 18-65)			(ages 18-65)		(ages 18-65)			
Primary health care	419.0	82.2 €	1 137 €	15.5 €	46.5 €	155 €	42.3 €	231 €	63.0 €	57.8 €	109.5 €
Specialised health care	298.5	275.4 €	2 713 €	37.0 €	111.1 €	370 €	101.0 €	551 €	150.4 €	138.0 €	261.5 €
Total			3 849 €	52.5 €	157.6 €	525 €	143.3 €	782 €	213.4 €	195.8 €	371.0 €

[1] Number of visits per 1000 working-age (ages 18-65) individuals. Source: THL, SOTKAnet Statistics and Indicator Bank 2005 – 2013. SOTKAnet does not directly provide the number of mental health care visits by people of working age. Using Terveys 2011 data, we estimate that 91% of mental health care visits are made by working-age people. The SOTKAnet indicators 3075 and 2482 lead us to estimate the number of mental health care visits to be 419 in primary health care and 298.5 in specialised health care per 1000 working-age people.

[2] Average costs euros per visit. Source: Kapiainen et al. 2014.

[3] A better quality of life decreases mental health service usage by 3.3% for 5–15% of participants (273), i.e. for no fewer than 14 and no more than 41 persons. The minimum savings (15.5 €) caused by the decrease in primary mental health care usage, due to the person's participation, are calculated using the formula (0.033 × 419 × 82.2 € / 1000) × (0.05 × 273), and the maximum savings (46.5 €) using the formula (0.033 × 419 × 82.2 € / 1000) × (0.15 × 273). The savings in specialised health care are calculated by placing specialised health care visits and costs into the formula.

[4] An increase of one unit in the sense of coherence decreases mental health care usage by an average of 0.45% and, respectively, an increase of 1.5 units, by an average of 0.67%. When the sense of coherence increases by one point in the group of participants (n=273), the minimum savings (42.3 €) caused by the decrease in primary mental health care usage are calculated using the formula (0.0045 × 419.0 × 82.2 € / 1000) × 273, and respectively, when the sense of coherence increases by 1.5 points, the savings (63.0 €) are calculated using the formula (0.0067 × 419.0 × 82.2 € / 1000) × 273. The savings in specialised health care are calculated by placing specialised health care visits and costs into the formula.

Appendix 11. Costs and economic consequences of the rehabilitative work activity case (n=17 000)

Cost or consequence	Calculation	€
Measure[1], (additional) cost (5.63 mth, n=17 000)	17 000 x 5.63 x 856.62	81 987 162
Additional income transfer cost[2]	17 000 x 5.63 x (733.15 – 609.59)	11 825 928
Costs after measure (one year)		
- 25% continue in rehabilitative work activity	4 250 x 5.63 x 856.62	20 496 775
- additional income transfer cost	4 250 x 5.63 x (733.15 - 609.59)	2 956 482
- 3% employed under the highest-level increased pay subsidy system[3]	510 x 8.1 x (286.01 + 19.22)	1 260 905
- pay subsidy (highest-level increased)	510 x 8.1 x 1 051.48	4 343 669
Savings after measure (one year)		
- income transfers		
- 3% employed under the highest-level increased pay subsidy system	510 x 8.1 x 609.59	-2 518 216
- 1% employed in the open labour market	170 x 12 x 609.59	-1 243 564
- mental health care services[4]		-23 102
Net costs		**119 086 039**
Productivity gain		
During measure (5.63 mth, n=17 000)[5]	17 000 x 5.63 x 0.3 x (1 450 x 1.04) x 1.2179	52 734 101
After measure		
- in rehabilitative work activity (5.63 mth, n=4 250)	4 250 x 5.63 x 0.3 x (1 450 x 1.04) x 1.2179	13 183 525
- pay-subsidised employment (8.1 mth, n=510)[6]	510 x 8.1 x 1 051.48	4 343 664
- employed in the open labour market[7]	170 x 12 x (0.7 x 2 774) x 1.04 x 1.2179	5 017 410
Productivity gain		**75 278 700**
Net benefit	**productivity gain - net cost**	**-43 807 339**

[1] Rehabilitative work activity; average duration of activity period 5.63 months (121 days). Period considered after the end of activity period - 1 year. Information given in 2011 prices.

[2] Additional income transfer (unemployment security) cost during the measure and due to the measure. A participant of rehabilitative work activity receives the same unemployment benefit (basic unemployment allowance, labour market subsidy, social assistance) for the duration of rehabilitative work activity that he or she received immediately prior to participation. The assumption is that the unemployment benefit for the period in question averages more than unemployment benefit without the measure. The unemployment benefit during the measure (733.15 €) was calculated by multiplying the average monthly number of social assistance days (21.5) by the average Kela subsidy per work activity day 34.10 € (Kela 2014b). Maintenance allowance, supplementary amounts, activation benefit and travel costs are not included in this figure but in the additional cost instead.

[3] Cost calculations are presented in Chapter 3.1.2 "Cost evaluation of highest-level increased pay subsidy".

[4] Savings in mental health care ranged 12 196-23 102 €. Calculations of savings are presented in more detail in Chapter 3.5.3.

[5] In 2011, municipal minimum wages for regular full-time employment for individuals fully fit for work and older than 17 were 1 450 € per month including benefits in kind. Source: Kuntatyönantajat 2010.

[6] Hiring cost, includes social security cost 21.79% and holiday bonus 4%.

[7] Starting wages 70% of the median of the total wages of full-time wage-earners. Source: Mustonen & Viitamäki 2004; OSF 2014c.

Appendix 12. Savings in mental health services due to improved quality of life and sense of coherence, the rehabilitative work activity case (n=17 000)

Rehabilitative work activity Mental health services Year 2011	Visits[1]	Costs[2]	Cost savings								
			Better quality of life[3] Service utilisation -3.3%			Stronger sense of coherence[4]				In the group of rehabilitative work activity participants (n=17 000)	
						Sence of coherence +1 point Service utilisation -0.45 %		Sence of coherence +1.5 point Service utilisation -0.67 %			
			n=1000 (ages 18-65)	n=850 (5%/17 000)	n=2 250 (15%/17 000)	n=1000 (ages 18-65)	n=17 000	n=1000 (ages 18-65)	n=17 000	Min	Max
Primary health care	419.0	82.2 €	1 137 €	966 €	2 898 €	155 €	2 635 €	231 €	3 923 €	3 601 €	6 821 €
Specialised health care	298.5	275.4 €	2 713 €	2 306 €	6 918 €	370 €	6 289 €	551 €	9 363 €	8 595 €	16 281 €
Total			3 849 €	3 272 €	9 816 €	525 €	8 924 €	782 €	13 286 €	12 196 €	23 102 €

[1] Number of visits per 1000 working-age (ages 18-65) individuals. Source: THL, SOTKAnet Statistics and Indicator Bank 2005 – 2013. SOTKAnet does not directly provide the number of mental health care visits by people of working age. Using Terveys 2011 data, we estimate that 91% of mental health care visits are made by working-age people. The SOTKAnet indicators 3075 and 2482 lead us to estimate the number of mental health care visits to be 419 in primary health care and 298.5 in specialised health care per 1000 working-age people.

[2] Average costs euros per visit. Source: Kapiainen et al. 2014.

[3] A better quality of life decreases mental health service usage by 3.3% for 5–15% of participants (17 000), i.e. for no fewer than 850 and no more than 2 250 persons. The minimum savings (966 €) caused by the decrease in primary mental health care usage, due to the person's participation, are calculated using the formula (0.033 × 419 × 82.2 € / 1000) × (0.05 × 17 000), and the maximum savings (2 898 €) using the formula (0.033 × 419 × 82.2 € / 1000) × (0.15 × 17 000). The savings in specialised health care are calculated by placing specialised health care visits and costs into the formula.

[4] An increase of one unit in the sense of coherence decreases mental health care usage by an average of 0.45% and, respectively, an increase of 1.5 units, by an average of 0.67%. When the sense of coherence increases by one point in the group of participants (n=17 000), the minimum savings (2 635 €) caused by the decrease in primary mental health care usage are calculated using the formula (0.0045 × 419.0 × 82.2 € / 1000) × 17 000, and respectively, when the sense of coherence increases by 1.5 points, the savings (3 923 €) are calculated using the formula (0.0067 × 419.0 × 82.2 € / 1000) × 17 000. The savings in specialised health care are calculated by placing specialised health care visits and costs into the formula.

Appendix 13. Distribution of the income transfer and wage costs of the highest-level increased pay subsidy for the period of the measure and the following year

Pay subsidy (highest-level increased) Year 2011, €	Pay-subsidised period 8.1 mth, n=273				Pay-subsidised period 12 mth, n=37				In open labour market 12 mth, n=19				Total net benefit
	Unemployed over 500 days	Highest-level increased pay subsidy (intervention)	Net benefit	Change, %	Unemployed over 500 days	Continued in pay-subsidised employment	Net benefit	Change, %	Unemployed over 500 days	Employed in the open labour market	Net benefit	Change, %	
Employer sector		0	0	0,0		356 592	-356 592	100,0		518 924	-518 924	100,0	-875 516
Gross wages[1]		1 909 139	-1 909 139	100,0		494 545	-494 545	100,0		426 081	-426 081	100,0	
Social security costs[2]		416 001	-416 001	100,0		107 761	-107 761	100,0		92 843	-92 843	100,0	
Pay subsidy		-2 325 141	2 325 141	100,0		-245 714	245 714	100,0					
Unemployed/employed (private households)	-1 103 817	-1 655 333	551 516	50,0	-221 632	-417 568	195 935	88,4	-113 811	-332 748	218 937	192,4	966 389
Gross wages or labour market subsidy	-1 347 986	-1 909 139	561 153	41,6	-270 658	-494 545	223 887	82,7	-138 987	-426 081	287 094	206,6	
Earnings-related pension (TyEL) and unemployment insurance contributions[3]		101 184	-101 184	100,0		26 211	-26 211	100,0		22 582	-22 582	100,0	
National health insurance contributions[4]	14 561	31 018	-16 458	113,0	2 924	8 027	-5 103	174,5	1 501	7 783	-6 281	418,4	
Church tax[5]	16 801	8 036	8 764	-52,2	3 373	2 900	473	-14,0	1 732	4 411	-2 679	154,6	
Public broadcasting tax[6]		11 517	-11 517	100,0		3 029	-3 029	100,0		2 660	-2 660	100,0	
State tax (final)[7]		0	0	0,0		0	0	0,0		0	0	0,0	
Municipal tax (final)[8]	212 808	102 050	110 758	-52,0	42 729	36 811	5 918	-13,9	21 942	55 897	-33 955	154,7	
Social insurance companies	0	-517 186	517 186	100,0	0	-133 972	133 972	100,0	0	-115 425	115 425	100,0	766 583
Social security costs		-416 001	416 001	100,0		-107 761	107 761	100,0		-92 843	92 843	100,0	
Earnings-related pension (TyEL) and unemployment insurance contributions		-101 184	101 184	100,0		-26 211	26 211	100,0		-22 582	22 582	100,0	
Municipality	461 185	-102 050	563 235	-122,1	92 600	-36 811	129 411	-139,8	47 551	-55 897	103 448	-217,5	796 094
Labour market subsidy	673 993		673 993	-100,0	135 329		135 329	-100,0	69 493		69 493	-100,0	
Municipal tax (final)	-212 808	-102 050	-110 758	-52,0	-42 729	-36 811	-5 918	-13,9	-21 942	-55 897	33 955	154,7	
State	659 433	2 282 605	-1 623 172	246,1	132 405	234 659	-102 253	77,2	67 992	-10 443	78 435	-115,4	-1 646 991
Labour market subsidy	673 993		673 993	-100,0	135 329	0	135 329	-100,0	69 493		69 493	-100,0	
National health insurance contributions	-14 561	-31 018	16 458	113,0	-2 924	-8 027	5 103	174,5	-1 501	-7 783	6 281	418,4	
Public broadcasting tax		-11 517	11 517	100,0		-3 029	3 029	100,0		-2 660	2 660	100,0	
State tax (final)		0	0	0,0		0	0	0,0		0	0	0,0	
Pay subsidy		2 325 141	-2 325 141	100,0		245 714	-245 714	100,0					
Others	-16 801	-8 036	-8 764	-52,2	-3 373	-2 900	-473	-14,0	-1 732	-4 411	2 679	154,6	-6 558
Church tax	-16 801	-8 036	-8 764	-52,2	-3 373	-2 900	-473	-14,0	-1 732	-4 411	2 679	154,6	

[1] Gross wages include holiday bonus 4%.
[2] Employer's social security contribution 2.12%, TyEL 17.8%, unemployment insurance 0.8%, group life insurance 0.07% and accident insurance 1.0%.
[3] Wage earner's earnings-related pension contribution 4.7% (in ages under 53) and unemployment insurance contribution 0.6%.
[4] Contribution to daily allowances 0.74% and medical care 1.30% under the national health insurance.
[5] Church tax 1.5%.
[6] Source: Verohallinto (Tax Administration) 2014c.
[7] Source: Verohallinto (Tax Administration) 2014b.
[8] When calculating the municipal tax and the state tax, deductions were made in accordance with the Finnish Tax Administration's instructions for the year 2011 (Verohallinto 2014a). Municipal tax was calculated as 19% (Kuntaliitto 2014).

Appendix 14. Distribution of the income transfer and wage costs of rehabilitative work activity for the period of the measure and the following year

Rehabilitative work activity — Year 2011, €	During the measure: Period of work activity 5.63 mth, n=17 000 — Unemployed over 500 days	Rehabilitative work activity (intervention)	Net benefit	Change, %	After the measure (1 year): Period of work activity 5.63 mth, n=4 250 — Unemployed over 500 days	Continued in rehabilitative work activity	Net benefit	Change, %	Pay-subsidised period 8.1 mth, n=510 — Unemployed over 500 days	Employed in subsidised employment	Net benefit	Change, %	In open labour market 12 mth, n=170 — Unemployed over 500 days	Employed in the open labour market	Net benefit	Change, %	Total net benefit	Opportunity cost	Total net benefit (opportunity cost considered)
Employer sector									0	0	0	100,0		5 017 410	-5 017 410	100,0	-5 017 410	65 917 626	60 900 216
Gross wages[1]									0	3 566 524	-3 566 524	100,0		4 119 723	-4 119 723	100,0	-7 686 247		
Social security costs[2]									0	777 146	-777 146	100,0		897 688	-897 688	100,0	-1 674 833		
Pay subsidy									0	-4 343 669	4 343 669	100,0		0	0		4 343 669		
Unemployed/employed (private households)	-47 844 135	-56 030 708	8 186 572	17,1	-11 961 034	-14 007 677	2 046 643	17,1	-2 062 076	-3 092 381	1 030 304	50,0	-1 018 309	-3 181 004	2 162 695	212,4	13 426 215	-48 442 867	-35 016 652
Gross wages or labour market subsidy	-58 343 859	-70 169 787	11 825 928	20,3	-14 585 965	-17 542 447	2 956 482	20,3	-2 518 216	-3 566 524	1 048 307	41,6	-1 243 564	-4 119 723	2 876 159	231,3	18 706 876		
Earnings-related pension (TyEL) and unemployment insurance contributions[3]	0	0	0	0,0	0	0	0	0,0	0	189 026	-189 026	100,0	0	218 345	-218 345	100,0	-407 371		
National health insurance contributions[4]	630 212	814 731	-184 519	29,3	157 553	203 683	-46 130	29,3	27 201	57 946	-30 745	113,0	13 433	76 828	-63 396	472,0	-324 790		
Church tax[5]	658 714	940 032	-281 318	42,7	164 678	235 008	-70 330	42,7	31 386	15 013	16 373	-52,2	15 499	45 336	-29 836	192,5	-365 111		
Public broadcasting tax[6]	0	477 194	-477 194	100,0	0	119 299	-119 299	100,0	0	21 516	-21 516	100,0	0	23 800	-23 800	100,0	-641 808		
State tax (final)[7]	0	0	0	0,0	0	0	0	0,0	0	0	0	0,0	0	0	0	0,0	0		
Municipal tax (final)[8]	9 210 797	11 907 122	-2 696 324	29,3	2 302 699	2 976 780	-674 081	29,3	397 553	190 642	206 911	-52,0	196 323	574 410	-378 087	192,6	-3 541 582		
Social insurance companies	0	0	0	0,0	0	0	0	0,0	0	-966 171	966 171	100,0	0	-1 116 033	1 116 033	100,0	2 082 204	-15 287 256	-13 205 052
Social security costs									0	-777 146	777 146	100,0	0	-897 688	897 688	100,0	1 674 833		
Earnings-related pension (TyEL) and unemployment insurance contributions									0	-189 026	189 026	100,0	0	-218 345	218 345	100,0	407 371		
Municipality	19 961 132	-11 907 122	31 868 254	-159,7	4 990 283	-2 976 780	7 967 063	-159,7	861 555	-190 642	1 052 197	-122,1	425 459	-574 410	999 869	-235,0	41 887 383	-1 032 716	40 854 667
Labour market subsidy	29 171 929		29 171 929	-100,0	7 292 982		7 292 982	-100,0	1 259 108	0	1 259 108	-100,0	621 782	0	621 782	-100,0	38 345 802		
Municipal tax (final)	-9 210 797	-11 907 122	2 696 324	29,3	-2 302 699	-2 976 780	674 081	29,3	-397 553	-190 642	-206 911	-52,0	-196 323	-574 410	378 087	192,6	3 541 582		
State	28 541 717	68 877 861	-40 336 144	141,3	7 135 429	17 219 465	-10 084 036	141,3	1 231 907	4 264 207	-3 032 300	246,1	608 349	-100 628	708 977	-116,5	-52 743 503	-1 073 830	-53 817 333
Labour market subsidy	29 171 929	70 169 787	-40 997 857	140,5	7 292 982	17 542 447	-10 249 464	140,5	1 259 108	0	1 259 108	-100,0	621 782	0	621 782	-100,0	-49 366 431		
National health insurance contributions	-630 212	-814 731	184 519	29,3	-157 553	-203 683	46 130	29,3	-27 201	-57 946	30 745	113,0	-13 433	-76 828	63 396	472,0	324 790		
Public broadcasting tax	0	-477 194	477 194	100,0	0	-119 299	119 299	100,0	0	-21 516	21 516	100,0	0	-23 800	23 800	100,0	641 808		
State tax (final)	0	0	0	0,0	0	0	0	0,0	0	0	0	0,0	0	0	0	0,0	0		
Pay subsidy									0	4 343 669	-4 343 669	100,0		0	0		-4 343 669		
Others	-658 714	-940 032	281 318	42,7	-164 678	-235 008	70 330	42,7	-31 386	-15 013	-16 373	-52,2	-15 499	-45 336	29 836	192,5	365 111	-80 957	284 154
- Church tax	-658 714	-940 032	281 318	42,7	-164 678	-235 008	70 330	42,7	-31 386	-15 013	-16 373	-52,2	-15 499	-45 336	29 836	192,5	365 111		

[1] Gross wages include holiday bonus 4%.
[2] Employer's social security contribution 2.12%, TyEL 17.8%, unemployment insurance 0.8%, group life insurance 0.07% and accident insurance 1.0%.
[3] Wage earner's earnings-related pension contribution 4.7% (in ages under 53) and unemployment insurance contribution 0.6%.
[4] Contribution to daily allowances 0.74% and medical care 1.30% under the national health insurance.
[5] Church tax 1.5%.
[6] Source: Verohallinto (Tax Administration) 2014c.
[7] Source: Verohallinto (Tax Administration) 2014b.
[8] When calculating the municipal tax and the state tax, deductions were made in accordance with the Finnish Tax Administration's instructions for the year 2011 (Verohallinto 2014a). Municipal tax was calculated as 19% (Kuntaliitto 2014).

Appendix 15. Distribution of the net benefit of rehabilitative work activity, state compensation (10.09 € /activity day) considered

Rehabilitative work activity Year 2011, €	Activity period n=17 000 a	After the measure (1 year) n=4 250 b	n=510 c	n=170 d	Total net benefit (state compensation considered) e = (a+b+c+d)	%	Opportunity cost f	Total net benefit (opportunity cost and state compensation considered) g = (e+f)	%
Employer sector			0	-5 017 410	-5 017 410	6,0	65 917 626	60 900 216	47,6
Unemployed/employed (private households)	8 186 572	2 046 643	1 030 304	2 162 695	13 426 215	16,0	-48 442 867	-35 016 652	27,4
Social insurance companies	0	0	966 171	1 116 033	2 082 204	2,5	-15 287 256	-13 205 052	10,3
Municipality	52 623 384	13 155 846	1 052 197	999 869	67 831 296	81,0	-1 032 716	66 798 580	52,2
- State compensation[1]	20 755 130	5 188 783			25 943 913				
State	-61 091 274	-15 272 819	-3 032 300	708 977	-78 687 415	94,0	-1 073 830	-79 761 245	62,3
- State compensation	-20 755 130	-5 188 783			-25 943 913				
Others	281 318	70 330	-16 373	29 836	365 111	0,4	-80 957	284 154	0,2

[1] State compensation is 10.09 € multiplied by average rehabilitative work activity days per participant per year, and multiplied by total average number of participants e.g. in the first column state compensation is 10.09 € x 121 days x 17 000 participants. Source: Finnish Financial Supervisory Authority & Kela 2012.

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