Summary
General introduction
Improving dietary intake of Dutch adults is important in order to prevent overweight and related health risks. Food choices are made both consciously and less consciously. As a result, supporting healthy food choices can be done in various ways, including by making changes to the physical food environment. The worksite cafeteria is such a food environment. The aim of this thesis is to develop the intervention *The healthy worksite cafeteria* with nudging and social marketing strategies and to evaluate its effectiveness on objectively measured purchase behaviour of Dutch employees in the worksite cafeteria. This theses starts with a general introduction (**chapter 1**) in which I present the more extensive rationale for intervening this way in Dutch worksite cafeterias.

Main findings
For the development of the intervention we conducted two qualitative studies exploring respectively drivers of the target group and the opinion of experts. (**chapters 2 and 3**). **Chapter 2** describes seven focus groups among 45 Dutch employees. The analyses showed that respondents mentioned ‘healthiness’, ‘price’ and ‘taste’ as most important drivers for food selection. Healthiness played a less important role in visiting or making food choices in the worksite cafeteria. **Chapter 3** describes the study conducted among 14 key stakeholders about the adoption and continued implementation of a healthy worksite cafeteria intervention with nudging strategies. The key stakeholders were caterers, nutritional experts and facility managers. From this study it appeared that important factors for adoption are guaranteeing freedom of choice and profitability, and ensuring the availability of attractive healthy options. For continued implementation proving effectiveness of the intervention is important. We describe the development of the intervention and the study design of the randomised controlled trial (RCT) in **chapter 4**. The development consisted of four phases: collecting strategies from literature followed by the in chapter 2 and 3 described qualitative face to face interviews with key stakeholders and qualitative focus group interviews with employees and lastly a feasibility pilot study. Subsequently, we show the main effects of *The healthy worksite cafeteria* intervention on food selection in **chapter 5**, by comparing sales data in an RCT with 30 worksite cafeterias. By simultaneously conducting 14 nudging and social marketing strategies for 12 weeks, we aimed at an increase of the share of healthier food products purchased. Strategies included a bigger share in healthier food products offered, price strategies and the prominent placing of healthier food products. We found significantly positive effects of the intervention on purchases for three of the seven studied product groups: healthier sandwiches, low fat cheese (to put on a sandwich) and fruit. We therefore concluded that the intervention was partly effective in nudging customers towards healthier choices. The final study we describe in **chapter 6** is about vitality of employees. As a result of an aging workforce, health and well-being of employees and its association with work...
related outcomes have become more important. Our worksite cafeteria intervention emerged from the aim to develop an intervention (Workplace Health Promotion Program (WHPP)) that could possibly contribute to increasing ‘sustainable employability’. Chapter 6 describes a cross-sectional study with Dutch employees (n=786) that was conducted using online questionnaires. Our study revealed that participating employees had a higher vitality compared to norm scores of the Dutch population. Furthermore, employees with a higher vitality bought more salad, had a higher self-reported work performance and had a lower BMI. The employees with lowest vitality scores (‘very low’ and ‘low’) had a higher BMI and lower self-reported work performance.

**General discussion**

This thesis is completed with a general discussion in chapter 7, taking its findings in a broader perspective. Our study showed that a healthy worksite cafeteria with nudging and social marketing strategies is feasible in catering practice and partly effective in stimulating healthier food choices of Dutch customers. I emphasize that to possibly have more effect on food choices and subsequently on sustainable performance at work, some strategies should be intensified and additional efforts on specific target groups should be made. Besides using nudging that guides behaviour mostly automatically, behaviour change interventions could also try to raise people’s competence to make their own more deliberate choices. These competence enhancing elements could – when added to nudging interventions – in some situations function as a catalyst and increase the effect on food choice. Furthermore, I discuss the ethics of nudging. Nudging can be seen as manipulation since it alters someone’s behaviour, or as a violation of autonomy. Nudging towards a desired behaviour that is similar to the goals of the target group, for example offering more healthy options when the target group wants support to eat healthier, can however be seen as autonomy enhancing. Provided that the level of intrusiveness is taken into account, nudging can be seen as a fair and ethical tool to support people in making healthier choices. Similar to nudging, social marketing has the aim to change behaviour. Providing insight in goals and drivers of the target group supports the development of an effective intervention. Solely nudging and social marketing are however not the silver bullet to tackle obesity. It could however contribute to other approaches like reformulation, and governmental (fiscal) rules and regulations.

Based on the main findings we can formulate three recommendations for future nudging research: First, evaluating the long-term effect of nudging strategies is necessary. Second, more research is needed concerning the effect on food choice of the combination of changing the food environment, together with training personal knowledge and skills, like food literacy or implementation intentions (boosting). Third, more insight is needed in the effect of nudging specific target groups. Three recommenda-
tions for policy and practice derived from our intervention are at first sharpening the nudges. Second, the upscaling of this intervention to more worksite cafeterias and third, the development of implementation tools to support this upscaling.

**General conclusions**

A healthy worksite cafeteria with nudging and social marketing strategies is feasible, and partly effective in stimulating healthier food choices of Dutch employees. Besides intensifying some intervention strategies to possibly have more effect on food choices, future research should aim at the long-term effects, the possible combined effect of nudging and increasing the level of personal knowledge and skills, such as (elements of) food literacy and should focus on vulnerable groups, for example those with a lower socioeconomic status. The latter is important to prevent the socioeconomic inequalities in health from increasing further. *The healthy worksite cafeteria* intervention is a valuable contribution to an integrated approach alongside governmental interventions such as taxes and subsidies, with the aim to evoke sufficient changes in the average Dutch eating pattern.