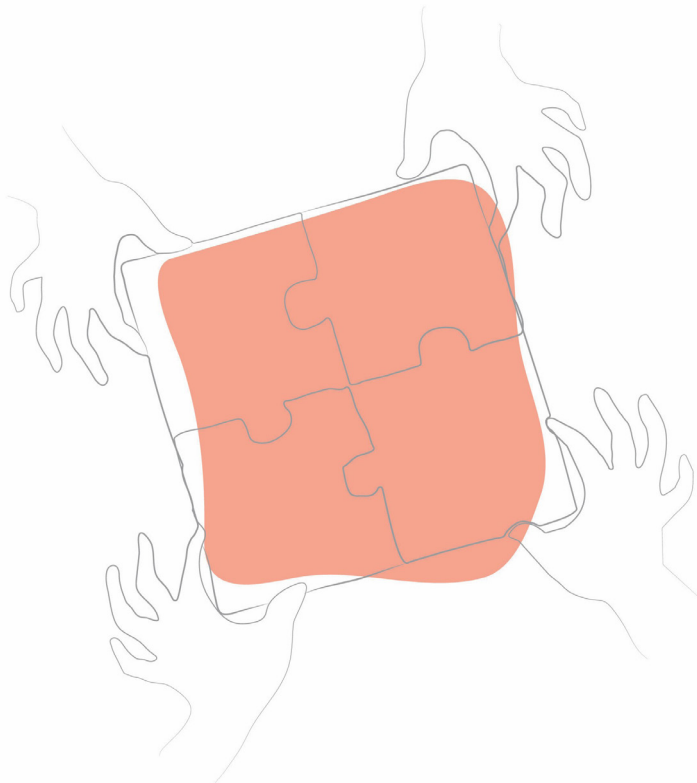


Doctoral Thesis in Technology and Health

Job Crafting: Changing and adapting work as one piece of the puzzle for a sustainable working life

ELLEN JALDESTAD



Job Crafting: Changing and adapting work as one piece of the puzzle for a sustainable working life

ELLEN JALDESTAD

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Till min familj

*To live is to choose.
But to choose well,
you must know who you are
and what you stand for,
where you want to go
and why you want to get there.*

Kofi Annan

Summary

Introduction: This thesis focuses on job crafting as one way to increase work-related well-being and enable people to extend their working lives. The studies included were conducted within two different contexts, namely the manufacturing industry and public healthcare. These two contexts struggle with, for example, challenging working environments and staff shortages, as well as enabling older workers to extend their working lives. Job crafting, an active form of job redesign, can be defined as employees actively changing the physical and cognitive boundaries of work to better suit the person's abilities and desires. These kinds of bottom-up-driven strategies to change and adapt work have been found to increase employee well-being and productivity, as well as reduce staff turnover. According to previous research, job crafting thus has positive effects on both people at work and their organizations. Previous research also shows that organizational structures as well as individual factors can facilitate and enhance employees' job crafting. There is, however, a lack of studies focusing on how to best promote and facilitate employee-driven job crafting in practice.

Aim: This thesis aimed to explore job crafting as one part of a health-promoting and extended working life. Job crafting was analysed in relation to an extended working life among blue-collar workers in one company in the manufacturing industry, and in relation to being able to work and feel well within public healthcare and manufacturing industry.

Methods: Data was collected at one global manufacturing company and different workplaces within Swedish public healthcare. In the manufacturing company, data was collected from 100 blue-collar workers as part of an age management project focusing on factors influencing employees' retirement decisions. The respondents represented older employees in three different countries: Sweden, the Netherlands, and France. These respondents completed a questionnaire and participated in semi-structured interviews. The quantitative data was descriptively analysed and the qualitative data was analysed with content analysis. Within public healthcare, a questionnaire was first administered to 421 healthcare employees at two times (T1-T2), six to eight months apart. A response rate of 59% provided data from 250 respondents. Secondly, semi-structured interviews were conducted with 16 healthcare employees and five managers. The quantitative data from the survey was analysed with SEM analysis, whereas the qualitative data was analysed with reflexive thematic analysis.

Findings: Factors that influenced blue-collar workers' decisions about retirement and an extended working life included perceived health and economic situation, task characteristics, support from colleagues and managers, work autonomy and work setup, and national pension schemes. Job crafting strategies that were perceived as health-promoting among blue-collar workers included adapting work whenever possible, asking colleagues for help to finish work, and changing their way of thinking about work. For

some, these strategies were considered as contributing to being able to extend working life. Among the healthcare employees, health-promoting job crafting strategies included asking for new assignments and opportunities for professional development, organizing work in close cooperation with others, and involving patients in the planning of daily activities. These strategies were derived from different motives, including crafting for their development, crafting for a common good, crafting for manageability, and crafting for meaningfulness in work. Working conditions such as having support from managers and colleagues, and formal autonomy in work, facilitated job crafting among the healthcare employees. The health-promoting crafting strategies were connected to increasing work-related sense of coherence through comprehensibility, manageability, and meaningfulness. Job crafting strategies and motives were said to change over time, for example in relation to work-life balance and work experience, among respondents in both contexts. Within both contexts, it was also indicated that a strong inner drive for personal development sometimes outweighed hindering structural conditions when employees crafted for their development and manageability in work.

Conclusions: Factors that influenced the retirement decisions were found on different levels within the blue-collar workers' work context. Perceived antecedents of health-promoting job crafting among the respondents within both contexts in this thesis were found in organizational structures, workplace conditions, and individual factors. Job crafting motives and strategies were also said to change over time and were influenced by both individual factors and workplace-related conditions. From the findings in this thesis, it is suggested to further explore how to facilitate job crafting on the different work-system levels, as well as to plan job crafting interventions directed to healthcare employees and older blue-collar workers within the manufacturing industry.

Keywords

age management, blue-collar workers, extended working life, public healthcare, health-promoting work, job crafting, manufacturing industry, retirement decisions, sense of coherence, system perspective

Sammanfattning

Introduktion: Denna avhandling fokuserar job crafting som ett sätt att öka arbetsrelaterat välbefinnande och möjliggöra för människor att förlänga sina arbetsliv. Avhandlingen har genomförts inom två olika arbetskontexter: tillverkningsindustrin och sjukvården. Dessa två kontexter kämpar med till exempel krävande arbetsmiljöer och personalbrist, samt med att göra det möjligt för äldre medarbetare att förlänga sina arbetsliv. Job crafting är ett aktivt sätt att omforma arbetsuppgifter och arbetsupplägg, och kan definieras som att anställda själva förändrar de fysiska och kognitiva gränserna för arbetet, för att bättre passa personens förmågor och önskemål. Denna typ av medarbetardrivna strategier för att förändra och anpassa arbetet har visat sig öka anställdas välbefinnande och produktivitet, samt leda till minskad personalomsättning. Enligt tidigare forskning har job crafting alltså en positiv effekt för människor i arbete och för deras arbetsplatser. Tidigare forskning visar även att organisatoriska strukturer likväl som individuella faktorer kan underlätta och öka medarbetares job crafting. Det finns dock få studier som fokuserar på hur medarbetardriven job crafting bäst kan främjas och underlättas i praktiken.

Syfte: Denna avhandling syftade till att utforska job crafting som en del av ett hälsofrämjande och förlängt arbetsliv. Job crafting analyserades i relation till ett förlängt arbetsliv bland verkstadsarbetare i ett företag inom tillverkningsindustrin, och i relation till att kunna arbeta och må bra inom offentlig sjukvård och tillverkningsindustri.

Metod: Data samlades in vid ett globalt företag inom tillverkningsindustrin och vid olika arbetsplatser inom svensk offentlig sjukvård. I industriföretaget samlades data in från 100 verkstadsarbetare som en del av ett age management-projekt med fokus på faktorer som påverkar de anställdas pensionsbeslut. Respondenterna representerade äldre anställda i tre olika länder: Sverige, Nederländerna och Frankrike. Deltagarna fyllde i en enkät och deltog i semistrukturerade intervjuer. Kvantitativ data analyserades deskriptivt och kvalitativ data analyserades med innehållsanalys. Inom sjukvården administrerades en enkät till 421 anställda inom offentlig hälso- och sjukvård vid två tillfällen (T1-T2), med sex till åtta månaders mellanrum. En svarsfrekvens på 59% gav ett urval av 250 respondenter. Därefter genomfördes semistrukturerade intervjuer med 16 anställda och fem chefer inom vården. Kvantitativ data från enkäten analyserades med SEM-analys, medan kvalitativ data analyserades med tematisk analys.

Resultat: Faktorer som påverkade verkstadsarbetarnas beslut om pensionsavgång och ett förlängt arbetsliv inkluderade upplevd hälsa och ekonomisk situation, arbetsuppgifternas karaktär, stöd från kollegor och chefer, autonomi i arbetet och arbetsorganisation samt nationella pensionssystem. Job crafting strategier som uppfattades som hälsofrämjande bland verkstadsarbetarna inkluderade att anpassa arbetet när det var möjligt, be kollegor om hjälp för att avsluta arbetet i tid och ändra sitt sätt att tänka om arbetet. För vissa

ansågs dessa strategier bidra till att kunna förlänga arbetslivet. Bland de anställda inom hälso- och sjukvården inkluderade hälsofrämjande crafting strategier att be om nya arbetsuppgifter och möjligheter till professionell utveckling, att organisera arbetet i nära samarbete med andra och att involvera patienterna i planeringen av det dagliga arbetet. Dessa strategier drevs av olika motiv, vilka inkluderade att crafta för sin egen utveckling, för ett gemensamt bästa, för hanterbarhet och för meningsfullhet i arbetet.

Arbetsförhållanden så som att ha stöd från chefer och kollegor och formell autonomi i arbetet underlättade job crafting bland de vårdanställda. De hälsofrämjande crafting strategierna var kopplade till att öka den arbetsrelaterade känslan av sammanhang genom begriplighet, hanterbarhet och meningsfullhet. Strategier och motiv för job crafting uppgavs förändras över tid, till exempel i relation till balans mellan arbete och fritid och arbetslivserfarenhet, bland respondenter i båda kontexterna. I båda sammanhangen framkom det också att en stark inre drivkraft för personlig utveckling ibland övervann hindrande strukturella förhållanden när anställda craftade för sin egen utveckling och hanterbarhet i arbetet.

Slutsatser: Faktorer som påverkade besluten om pensionsavgång återfanns på olika nivåer inom verkstadsarbetarnas arbetskontext. Faktorer som upplevdes främja hälsofrämjande job crafting bland respondenterna inom båda kontexterna i denna avhandling återfanns i organisatoriska strukturer, arbetsplatsfaktorer och individuella faktorer. Motiven och strategierna för job crafting uppgavs förändras över tid, och influerades av både individfaktorer och arbetsrelaterade faktorer. Utifrån avhandlingens resultat föreslås studier för att ytterligare undersöka hur job crafting kan främjas på olika nivåer i ett arbetssystem, samt att planera job crafting-interventioner riktade till anställda inom sjukvården och äldre verkstadsarbetare inom tillverkningsindustrin.

Nyckelord

förlängt arbetsliv, hälso- och sjukvård, hälsofrämjande arbete, job crafting, känsla av sammanhang, pensionsbeslut, tillverkningsindustri, systemperspektiv, verkstadsarbetare, åldersmedvetet ledarskap

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List of studies

This thesis is based on the following papers. Published papers are reprinted with the kind permission from the copyright owner:

Paper I

Jaldestad, E., Eriksson, A., Blom, P., & Östlund, B. (2021). Factors influencing retirement decisions among blue-collar workers in a global manufacturing company – Implications for age management from a system perspective. *International journal of environmental research and public health*, 18(20), 10945.

Paper II

Jaldestad, E. (2022). Job crafting among older blue-collar workers. Conference paper, presented at the 24th edition of the International Workshop on Teamworking (IWOT), Sept 8-9th 2022, Nijmegen, the Netherlands.

Paper III

Jutengren, G., Jaldestad, E., Dellve, L., & Eriksson, A. (2020). The potential importance of social capital and job crafting for work engagement and job satisfaction among healthcare employees. *International journal of environmental research and public health*, 17(12), 4272.

Paper IV

Jaldestad, E., & Dellve, L. Antecedents for crafting a sense of coherence among healthcare employees. Submitted for publication.

Paper V

Jaldestad, E., Eriksson, A., Jutengren G., & Tjulin, Å. Job crafting motives and strategies to increase work-related well-being among healthcare employees. Submitted for publication.

Abbreviations

CFI	Comparative Fit Index
COPSOQ II	Copenhagen Psychosocial Questionnaire, 2 nd edition
ENWHP	European Network of Work Health Promotion
HFE	Ergonomics and Human Factors
IEA	International Ergonomics Association
HR	Human Resources
JD-R	Job Demand-Resources Model
ML	Maximum Likelihood
NPM	New Public Management
OHS	Occupational Health and Safety
RSMEA	Root Mean Square Error of Approximation
SEM	Structural Equation Modelling
SOC	Sense of Coherence
SWEBO	Scale of Work Engagement and Burnout
WEA	Work Environment Act
WHP	Work Health Promotion

Definitions

Age management	A management approach that takes into account age and age-related factors when planning and organizing work
Extended working life	Prolonging working life by additional years, either until the statutory retirement age or beyond the statutory retirement age
Job crafting	Changing and adapting work tasks, relationships at work, and the way work is viewed in ways that better suit a person's needs, abilities, and preferences
Sense of coherence	A general worldview in which stimuli are perceived, on a continuum, as comprehensible, manageable, and meaningful
Social capital	A positive and innovative learning climate within working groups, characterized by mutual trust and support between colleagues and managers
Health-promoting work	Being able to work in ways that promote well-being and work engagement without depleting personal resources
Work engagement	A positive work-related state of mind, characterized by e.g. absorption, enthusiasm, and mental resilience

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1 INTRODUCTION

Today, we know a lot about both risk factors and health factors in work. Still, working life can be extremely demanding, both mentally and physically, leading to ill health and sick leave in many sectors. In addition, staff shortages are a problem in several industries (e.g. the care sector), and there is a growing need to enable people to stay at work, both to provide skills and to retain key competencies in companies (c.f. Docherty et al., 2008; Ilmarinen, 2006); organizations depend on well-qualified, motivated and healthy employees for their future success (ENWHP, 2007). Employees engage in different strategies to handle demands and challenges in work, which by extension can be reflected in well-being and a willingness to stay in work longer. In this thesis, factors that promote well-being and engagement in work have been studied through the concept of job crafting.

Job crafting is an active form of job redesign, and can be defined as the way employees themselves shape and adapt their jobs to optimize available resources and deal with challenges in work. Employees craft either *task*, *cognitive*, or *relational boundaries* of their work, with altered work meaning and work identity as a result (Wrzesniewski & Dutton, 2001). Task crafting includes adding or changing job tasks, for example, asking for responsibilities outside the traditional job description. Crafting relational boundaries can be exemplified by getting to know colleagues privately and engaging in social activities, or asking for advice from an experienced colleague. When crafting cognitive boundaries an employee can alter the way they consider their work and certain tasks, for example thinking about how work adds meaning to their life (Wrzesniewski & Dutton, 2001). Job crafting strategies can either increase resources in work or reduce perceived demands (Tims & Bakker, 2010). The effects of job crafting are often beneficial, for both employees and employers, and include for example work engagement, job satisfaction, adaptability, and motivation to extend working life (c.f. Lichtenthaler & Fischbach, 2016; Tims & Bakker, 2010; Wrzesniewski & Dutton, 2001). Job crafting is in this thesis considered as part of individuals' health-promoting strategies to increase their well-being at work. This will be framed as health-promoting job crafting later in this thesis.

The research presented in this thesis was conducted within two different contexts: one global manufacturing industrial company (Scania CV AB, with its registered office in Sweden), and Swedish public healthcare. Within the industrial company, employees in Sweden as well as in the Netherlands and France participated in the data collection. These two working sectors both have their challenges in terms of demanding working environments. Within these contexts, it is important to design working conditions that promote employees' work-related health and well-being, and further explore different ways of handling challenges in difficult contexts. Workplace health promotion focuses on improving protection and growth factors rather than reducing risk factors in work (i.e. prevention strategies) (Breucker, 1997, referred to in Eriksson, 2011), and has been defined as "*the combined efforts of employers, employees and society to improve the health and*

well-being of people at work" (ENWHP, 2007, p. 2). The participating industrial company and healthcare departments all had a pronounced focus on health promotion in work. The experiences from these workplaces have thus provided information about successful health-promoting implementations and investments in two different, yet challenging, work contexts, from which it can be valuable to learn.

2 AIM AND RESEARCH QUESTIONS

The overall aim of this thesis was to explore job crafting as part of a health-promoting and extended working life. More specifically, job crafting was analysed in relation to i) an extended working life among blue-collar workers in the manufacturing industry, and ii) being able to work and feel well within the public healthcare and manufacturing industry.

The following research questions were specified:

- A. What factors contribute to retirement and/or to an extended working life among blue-collar workers in the manufacturing industry? How are these factors related to job crafting?
- B. What antecedents of health-promoting job crafting can be identified within the manufacturing industry and public healthcare?
- C. How do blue-collar workers in the manufacturing industry and employees in public healthcare craft their jobs in health-promoting ways?

3 BACKGROUND

3.1 Ergonomics and system perspective

This thesis positions itself within the research field of ergonomics, which focuses on people at work. With an interest in ergonomics, there is also an interest in enabling people to work under good conditions (c.f. Eklund, 2003). Since work still can be demanding for many people and thus not sustainable in the long term, it is important to conduct research in ergonomics on how to design working conditions that promote employees' well-being. Ergonomics and human factors (HFE) is an interdisciplinary area of research that holds a holistic perspective on work and work environment, aiming to find sustainable ways to design, organize, and conduct work without depleting human or structural resources (Docherty et al., 2008; Dul et al., 2012; Holden et al., 2015). International Ergonomics Association (IEA, 2000) defines ergonomics as *"The scientific discipline concerned with the understanding of interactions among humans and other elements of a system, and the profession that applies theory, principles, data and methods to design in order to optimize human well-being and overall system performance."* Further, *"Practitioners of ergonomics and ergonomists contribute to the design and evaluation of tasks, jobs, products, environments, and systems in order to make them compatible with the needs, abilities, and limitations of people."*

This definition implicates a double-sided focus on employee well-being as well as organizational performance and prosperity. This sociotechnical perspective on humans in work includes physical, cognitive, social, and organizational aspects of work (Dul et al., 2012; Eklund, 2003; Holden et al., 2015; Robertson et al., 1993), and the importance of taking into account different factors that contribute to sustainability in a working system. A system perspective on work and work environment enables studies with a holistic approach and macro-perspective on work, by focusing on the interplay between different levels of a sociotechnical work system and society (Bone, 2015; Dellve & Eriksson, 2017; Holden et al., 2015). In this thesis, employee well-being was studied from such a system perspective. This means that individual employees, with their conditions and resources, have been studied within their work contexts. Since working individuals cannot be isolated from their surroundings, it is important to consider not only one level at a time but also the entire system, when exploring reasons for health or ill-health among employees (Dellve & Eriksson, 2017; Docherty et al., 2008). In this thesis, several system levels were therefore included when planning study objectives and data collections, in data analyses, and when presenting the results of the different studies. Factors affecting people at work can be found on several levels; workgroup, workplace, organizational, and societal levels interact with the individual when finding different strategies to feel good at work. The system model in Figure 1 has guided the planning and analysis processes in this thesis, and the different levels in the model are described and concretized below.

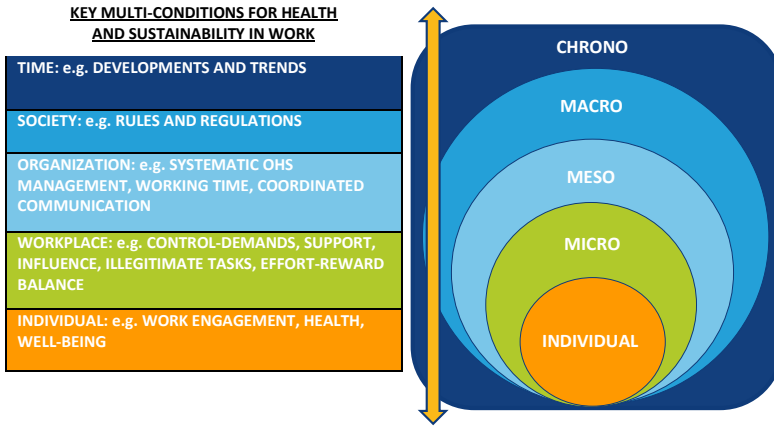


Figure 1: Examples of conditions for health and sustainability in work at the different levels in the system model that has guided the studies in this thesis. The arrow indicates an interplay between the levels (modified from Dellve & Eriksson, 2017)

The *individual level* includes strategies from the employee's point of view and relates to well-being and motivation in work, and job satisfaction, as well as a person's competence and experience, attitudes, capacities, and behaviour (Dellve & Eriksson, 2017). In this thesis, health-promoting job crafting strategies and individual antecedents of such strategies were studied at this level. So too were individual factors that were perceived to influence the decisions about retirement among blue-collar workers in the manufacturing company. Two work-related levels are included in the model: *micro* and *meso*-levels. The *micro-level* covers the direct work context in which employees conduct their work tasks, that is their current workplace (Dellve & Eriksson, 2017). In this thesis, antecedents of job crafting as well as factors influencing the retirement decisions among blue-collar workers have been studied at this level, for example, social relations, support from the closest superior, and demands and resources in work. At the *meso-level*, organizational structures and workplace culture are manifested, for example in terms of management approaches and communication (Dellve & Eriksson, 2017). Similar to the micro-level, factors that were perceived as contributing to either retirement or extended working life, as well as organizational job crafting antecedents, were studied at the meso-level. This includes, for example, management policies and strategies. The *macro-level* is a societal level including, for example, work environment legislations, and pension systems, which organizations must consider and follow (Dellve & Eriksson, 2017). At this level, societal factors, such as attitudes toward an older labour force, and attitudes toward work are also included. Lastly, the *chrono-level* in the system model represents a time factor, for instance, trends in the society that may be of importance for other system levels, such as political decisions, changes of laws and regulations, and demographical changes (Dellve & Eriksson, 2017). Major life events as well as changes in the society that shape a person – positively or negatively – are examples of how the chrono-level can be related to an individual

(Bronfenbrenner, 1986). Within an organization, the time factor applies to for example implementation of interventions, and structures for communication (e.g. time to spread information and implement organizational changes). This thesis discussed the time factor in relation to retirement and extended working life, and how job crafting strategies differ in scope and extent over time within both contexts.

3.2 Presenting the organizational contexts in this thesis

The development of work environment legalizations and management trends within different sectors are other examples of how the chrono-level can be concretized. The development of these areas is briefly presented in this section to introduce the reader to the two research contexts of this thesis.

Sweden has a long tradition of focusing on the working environment and cooperation between employers and employees through trade union representatives. Most work conditions in Sweden have, in general, been improved during the last two decades but the female-dominated sectors of school and healthcare have fallen behind (Dellve et al., 2024). Occupational health and safety management in Sweden has been legalized in comprehensive regulations for more than 100 years. In the late 19th century, inspections of the work environment were initiated and workers started to organize themselves within trade unions to strive for better working conditions. The current Work Environment Act (WEA 1977:1160) aims to prevent accidents and ill health in work, for example by regulations about implementing systematic work environment management (AFS 2001:1), and by focusing on organizational and social aspects of the work environment (AFS 2015:4). Whilst there is a strong tradition of trade union representatives within organizations in the Swedish labour market, works councils play a similar role in terms of informing and consulting employees in the Netherlands^{1,2} and France³.

Within the industrial context, Lean management principles, striving for constant improvements and economic gain (Liker, 2004), have historically been more common than people-oriented leadership approaches. Within the healthcare sector, New Public Management (NPM) was implemented in the 1980s-1990s, with managerial processes from the industrial sector, for example, to measure performance and focus management responsibility, to cut costs and increase quality in care (Pollitt & Bouckaert, 2017). This form of economic governance has however been found to contribute to a worse working environment in terms of more demands and less support and influence, for employees as well as managers (Bejerot et al., 2015). In reaction to NPM, trust-based governance in terms of servant leadership has gained more interest within the healthcare sector in the last couple of years (Gunnarsdóttir et al., 2018). Work-related well-being is important for employee sustainability, financial stability, and competitiveness regardless of context, and

¹ [works-councils-act-jan2023.pdf \(ser.nl\)](#) (accessed 2023-11-17)

² [Works council or staff representation | Business.gov.nl](#) (accessed 2023-11-17)

³ [Representation in the workplace, Work Councils in France \(eversheds-sutherland.com\)](#) (accessed 2023-11-17)

the importance of a more people-oriented leadership approach to contribute to employee well-being in the industry has been argued (Coetzer et al., 2017).

Among European Union member states, Sweden has a more extensive legalization of health-promoting efforts in the workplace than the Netherlands and France (Verra et al., 2019). All three countries have legalizations that include preventive health and safety policies, which include psychosocial aspects of work. However, in terms of workplace health promotion (WHP), Sweden has several visions and guidelines of WHP in general occupational health and safety (OHS) legislation, whereas *“some laws address the design of workplaces, and governmental funding is provided”* in the Netherlands (Verra et al., 2019, p.25), and *“no action to promote healthier lifestyles at work”* is required in France (Verra et al., 2019, p.24). Larger companies are more likely to have health and safety representation within their organization (Linnan et al., 2019; Verra et al., 2019), as well as more comprehensive WHP programs (Linnan et al., 2019). In addition, healthcare workplaces seem more likely to implement comprehensive WHP programs than other industries (Linnan et al., 2019).

The work environment in the manufacturing industry is demanding, in particular for older blue-collar workers, with a high physical workload, repetitive work, and short time cycles on the assembly line. As mentioned in the introduction, Scania has a pronounced focus on WHP and employee safety for both blue-collar and white-collar workers, in Sweden and globally. The company's internal version of Lean production also includes individual health aspects as part of their constant improvements (Holmqvist & Maravelias, 2018). The special focus on older blue-collar workers within the company will be presented and discussed further on in this thesis.

The work environment in public healthcare is also challenging in many ways. Employees face high demands of professionalism and competence in an often high-tech environment. They have to handle their own emotions as well as their patients' in matters of life and death, and they often work under financially challenging circumstances due to organizational savings and cutbacks. The workload can be uneven due to unpredictable events such as accidents, pandemics, and weather conditions (e.g. the occurrence of more falls in winter). In addition, employees need to communicate, coordinate, and collaborate with many different people and departments. It can therefore be difficult to maintain and support a health-promoting work environment at both micro and meso-levels, and there is a need to find more strategies to do so within this sector (Dellve & Eriksson, 2017). Similar to the industrial company, the participating healthcare departments had different ongoing activities to promote employee health, for example, some managers participated in a health-promoting leadership program.

3.3 Health-promoting and sustainable work

The European Network for Workplace Health Promotion (ENWHP) defines health promotion in work on different levels: at the individual level, health-promoting conditions include for example being able to influence your work and perceived well-being in work (e.g. work engagement and job satisfaction). At the workplace level, health-promoting conditions include for example perceived and intended management strategies, work settings (e.g. work autonomy and perceived freedom in work), and social relations (e.g. social support among colleagues and managers) (ENWHP, 2007). Kira et al. (2010, p. 617) defined work as sustainable *“when it promotes the development in employees’ personal resources underlying their sustainable abilities in work”*. Workplace health was defined by Vaandrager and Koelen (2013, p. 77) as *“the ability of the workforce to participate and be productive in a sustainable and meaningful way”*. To achieve this, a health-promoting focus must be applied within the organization. In line with these definitions, work is in this thesis considered health-promoting and sustainable when employees can conduct their work in ways that promote well-being and engagement. This includes being able to make use of available resources and being able to manage and handle challenges and demands productively, without depleting personal resources.

Health-promoting leadership is not considered one specific leadership style. Instead, a salutogenic and holistic approach to health promotion enables managers to move between different people-oriented leadership styles within their current context (Akerjordet et al., 2018). Eriksson (2011) described health-promoting leadership in three different ways: i) to organize health-promoting activities; ii) a supportive leadership style, and iii) to develop a health-promoting workplace. Further, health-promoting leadership was defined as *“creating a culture for health-promoting workplaces and values that inspire and motivate employees to participate in such a development”* (Eriksson, 2011, p. 17). In this thesis, management strategies that aim to enable people to extend their working lives in healthy ways are considered part of health-promoting leadership. This was studied with the intention of enabling older workers to extend their working lives healthy and safely within the industrial company, to either statutory retirement age or beyond. This age-considering management approach is further described in section 3.3.2 below. Management approaches that seek to promote employees’ job crafting strategies are also considered health-promoting in this thesis. This is further described and discussed in section 3.4.

In this thesis, work-related well-being is considered one important aspect of health-promoting work. There is however not one general definition of work-related well-being. Schulte and Vainio (2010) reviewed the literature concerning several factors that affect work-related well-being (i.e. quality of working life) and by extension organizational productivity. Among these factors were individuals’ health and socioeconomic status, as well as work-related factors, such as job security and work-life benefits. Three dimensions of work-related well-being are recurrent in the research literature. These are work

engagement, job satisfaction, and occupational stress (c.f. Soh et al., 2016). Work engagement can be characterized by absorption, dedication, and vigour in work. Work engagement is dependent on the context as well as the employee's work-related state of mind (Bakker, 2011; Schaufeli & Bakker, 2004). Work engagement is connected to both pleasure and activation, whereas job satisfaction is more passively related to pleasure. Satisfied employees have been defined as relaxed, calm, and content, whereas engaged employees have been defined as excited, enthusiastic, and energized (c.f. Bakker & Oerlemans, 2011). Occupational stress can occur through an imbalance between work-related control and resources on the one hand and demands in work on the other hand (c.f. Bakker & Demerouti, 2007). At the micro-level, the workgroup and social relations can be important for work-related well-being. A positive, trustful, and innovative learning environment, further referred to as social capital (Kouvonen et al., 2006), has previously been connected to employees' work engagement and job satisfaction (Strömberg et al., 2016). Work-related well-being is considered in this thesis to be a state in which employees are positively engaged in their work and can manage challenges in different ways.

3.3.1 Work-related sense of coherence

By focusing on what enables people to stay well when put under stress and challenges, a salutogenic health-promoting approach differs from the more traditional pathogenic view of health and disease (Antonovsky, 1987). The question: "*How can this person be helped to move toward greater health?*" can be related to all aspects of a working person in such an approach (Antonovsky, 1996, p. 14). In this thesis, WHP has been framed within the salutogenic theories of sense of coherence (SOC), developed by Antonovsky (1987). People perceive their situation as comprehensible, manageable, and meaningful on a continuum (Antonovsky, 1987), and a strong SOC is a prominent predictor of the subjective state of health (Suominen et al., 2001). In line with previous research, work-related SOC is in this thesis considered the following: In a work context, *comprehensibility* can be exemplified by peoples' understanding of why things are the way they are or why things happen the way they do within the organization. That is, to understand connections and structures of work processes within the organization – how things are manifested in daily activities – and to see their part in these structures (Antonovsky, 1987, 1996; Hanson, 2004; Vaandrager & Koelen, 2013). Structural resources, such as useful tools and materials, contribute to workplace *manageability*. So too do helpful colleagues and a well-functioning organization. For the individual employee, manageability is also to be able to handle your work situation – to the extent possible with resources available in work. Being able to influence working conditions and work pace, and taking initiatives of your own, contributes to control and manageability (Hanson, 2004; Vaandrager & Koelen, 2013). *Meaningfulness* is the motivational component of a sense of coherence, and, according to Antonovsky, the most important component of the three (Antonovsky, 1987, 1996). Without motivation, there is no energy to contribute or achieve any results. In work, colleagues, professional pride, and personal development can contribute to meaningfulness. Further, the core values of the organization add meaning if employees

perceive them as important; organizations that emphasize goals beyond financial values can be more successful since their employees are more engaged when motivated to contribute to the common good (Hanson, 2004). A strong work-related SOC can be important to maintain health and to choose proactive strategies to handle stress in demanding work environments (Betke et al., 2021; Palm & Eriksson, 2018). In this thesis, work-related SOC has been studied in relation to employees' job crafting strategies. Work-related SOC is a strong indicator of well-being at work, and it has been studied further whether job crafting strategies can increase work-related comprehensibility, manageability, and meaningfulness.

3.3.2 Age management

As mentioned above, work-related well-being is important for employee sustainability, financial stability, and competitiveness, regardless of context, and the importance of a more people-oriented leadership approach has been argued for employee well-being (Coetzer et al., 2017). In this thesis, age management is considered one of several people-oriented management approaches. Age management is here defined in line with previous research, as strategies that enable everyone, regardless of age, to work safely and being able to reach both personal and organizational goals by considering age-related factors when planning work organization and daily work management (Nilsson et al., 2011; Walker, 2005). Organizational age management was, in this thesis, studied within the industrial company. Even though the definition can be considered to include working people of all ages, the participating industrial company had a pronounced focus on people aged 55 years and older in their age management strategies.

As life expectancy continues to rise globally, the statutory retirement age is also increasing in many countries (OECD, 2020; WEFORUM, 2020). There is a need to motivate and enable people to extend their working lives to maintain a balance between working and non-working people in society (i.e. dependency ratio); employers must focus on how to enable people to stay in work longer (Ilmarinen, 2006). According to E. Wikström, Professor in Health Governance at the University of Gothenburg (personal communication, March 28th, 2023), both healthcare and industrial sectors already have problems recruiting, and a lack of staff means that employers thus need to retain older employees at work. People however age differently: physical, social, and cognitive aspects of ageing affect people differently (Nilsson, 2016), which indicates a need to organize for 'individualized age management'. Two organizational strategies to handle the situation have been suggested: "*The knowledge level of managers and supervisors in age-related issues needs to be improved*" and "*Better age-adjusted and flexible working life is needed*" (Ilmarinen, 2006, p. 363).

In previous research, several factors have been identified as contributing either to retirement or to an extended working life. These factors can be divided into *push*, *pull*, and *stay factors*. *Push factors* 'push' people out of work in a negative sense. These factors

include a demanding work environment with a high physical workload and work-related stress, and a poor social climate, for instance, no social support and occurrence of ageism. *Pull factors* are factors that positively ‘pull’ people out of work, for instance, a retired spouse and leisure activities. *Stay factors* are on the other hand factors that motivate and enable people to stay in work, for example, development opportunities, social capital, and control and autonomy in work, or factors that keep people in work, such as their economic situation (c.f. Nilsson, 2016; Walker, 2005).

Age management strategies are in this thesis considered in relation to employees’ intention to either extend or ending working life, as part of a health-promoting approach that aims to enable older blue-collar workers to stay in work longer whilst maintaining their health and well-being. For some employees, an extended working life can be to be able to work until statutory retirement age, or as long as they have to – to be able to provide for their basic needs. For others, an extended working life can mean to keep working beyond the statutory retirement age. Although age management has a health-promoting perspective in this thesis, it is considered that extending working life is not only positive. As mentioned above, people are differently affected by ageing (Nilsson, 2016), and work is differently planned and organized for different people. In terms of health equity (e.g. fairness in work conditions that affect employees’ health) it is thus troublesome to neglect that, even with good intentions, an extended working life can have negative consequences for people (Ahonen et al., 2018; Ilmarinen, 2006). This will be further discussed in section 6.3 below.

3.4 Job crafting

This thesis aimed to study job crafting in relation to a health-promoting and extended working life. With this aim, job crafting was studied within the two different contexts presented above. In the study conducted within the manufacturing industry, older blue-collar workers’ job crafting was related to their intentions to prolong their working life. As mentioned above, this can be either working until the statutory retirement age or longer. Within public healthcare, job crafting strategies that were perceived to increase employees’ well-being at work were in focus. Conditions that facilitated and/or promoted job crafting were also focused on within both contexts. Since job crafting has a central role in this thesis, and the studies included, the following section is fairly extensive. It covers the development of the job crafting concept as well as previously identified antecedents, strategies, and outcomes.

3.4.1 Definitions and development of the concept

Job crafting is an active form of employee-driven job redesign, and is here defined as the way employees themselves shape and change their jobs, to optimize available resources and deal with challenges in work (Tims & Bakker, 2010; Wrzesniewski & Dutton, 2001). Job crafting has been studied as employees’ strategies to align their perceived needs and desires with resources and demands in work. People engaging in job crafting – job crafters – do so with intentions to make work better for themselves (c.f. Lyons, 2008), for example,

by increasing meaningfulness in work (c.f. Harbridge et al., 2022). Job crafting itself has an individual perspective on promoting well-being at work and has previously been linked to several positive outcomes for both employees and employers. Job crafters have, for example, reported increased work engagement and job satisfaction (c.f. Bakker & Demerouti, 2017; Berg et al., 2010; Hakanen et al., 2017; Tims & Bakker, 2010). In extension, it can be argued that job crafting strategies that are aligned with employees' strengths (i.e. job crafting towards strengths) contribute more to work performance and organizational targets, compared to crafting strategies derived from a person's interest (i.e. job crafting towards interests) (Zhang et al., 2021). In addition, engaged and satisfied employees tend to stay with their current employer (Tims & Bakker, 2010). There are thus both individual and organizational gains from employees engaging in job crafting.

Job crafting is considered a bottom-up process, often ongoing without the manager's knowledge (c.f. Lyons, 2008), and sometimes even without the job crafter being aware of why they make changes to their current work situation. Employees can be inspired by other job crafters in their department or engage in spontaneous collaborative job crafting within their work group (Tims, Bakker, Derks, et al., 2013). However, job crafting does not necessarily happen by chance. According to Wrzesniewski and Dutton (2001), employees need to be motivated to craft their jobs, for example from a perceived need to take control over work, to overcome some difficulties, or to create meaning in an unanswered occupational call. There must also be perceived opportunities, and 'room' for crafting (Wrzesniewski & Dutton, 2001). Job crafting can be triggered by a perceived misfit between the employee's needs and desires and their job assignments, and facilitated by autonomy in work and task independence. A lower degree of both autonomy and work engagement can thus decrease, or hinder, job crafting activities (Tims & Bakker, 2010). Among older employees, motives of growth and development within work may reduce but, as discussed by Kooij et al. (2015), employees with long work experience are often able to adapt work to better suit their current ambitions and abilities. Thus job crafting strategies may change because of age.

Although mainly connected to work-related well-being, job crafting can have negative consequences: negative experiences of job crafting, such as overload, stress and regrets can for example be generated by constraining contexts with low social support and high pressure, as well as constraining personal factors, such as lack of personal resources (Lazazzara et al., 2020). Even with the best of intentions, job crafters who add more tasks can end up in situations where the work is no longer manageable and where they cannot complete the tasks they have committed to do. To handle a demanding work situation, a person might also craft their way too far out of the work-related boundaries, for example neglecting troublesome tasks or clients, or even ending up doing things that can be potentially harmful to the organizational performance; prioritizing one task over another consequently ends up with something being less prioritized (Berg et al., 2010).

Classic theories on job design and job redesign traditionally hold a top-down approach, in which managers and stakeholders influence the design and characteristics of work without involving the people who conduct the job. This ‘fit the person to the job’ approach can still be seen in some domains, for example in the manufacturing industry where quality is maintained through standards and procedures. In today’s society, however, it can be argued that this approach is an outdated view of people and work. With formal and organized room to customize and adapt their work, employees can instead engage in job design and redesign on their initiative (Oldham & Hackman, 2010). Almost 40 years ago, Kulik et al. (1987) discussed employees’ participation in work redesign. This participative change process would involve those working with specific tasks and domains in the design of work, and even occasionally redesigning their work on their initiative. Theories of employee-driven job redesign thus started to develop, and in 2001, Wrzesniewski and Dutton published their original definition of job crafting as *“the physical and cognitive changes individuals make in the task or relational boundaries of their work”* (Wrzesniewski & Dutton, 2001, p. 179). Three dimensions of crafting were presented: *task crafting*, *relational crafting*, and *cognitive crafting*. *Task crafting* can be exemplified by adding or changing job tasks, such as asking for responsibilities outside the traditional job description; *relational crafting* can be exemplified by getting to know colleagues and engaging in social activities at work; *cognitive crafting* can be exemplified by considering how work adds meaning to life (Wrzesniewski & Dutton, 2001).

Early research on job crafting mainly focused on the role-based perspective by Wrzesniewski and Dutton (2001) in qualitative studies, to further explore *how* employees craft their jobs (Lazazzara et al., 2020). Further on, Tims and Bakker (2010) framed job crafting within the job demand-resources model (JD-R) developed by Bakker and Demerouti (2007). The JD-R model emphasizes a balance between demands and resources in work for employee well-being, and from that Tims and Bakker (2010) identified different and independent job crafting dimensions. These dimensions were: *increasing social job resources*, *increasing structural job resources*, *increasing challenging job demands*, and *decreasing hindering job demands* (see Figure 2). In this resource-based perspective, Tims and Bakker (2010) thus distinguished between challenging and hindering demands. This means that demands that are perceived as challenging can be stimulating for employees, while demands are considered to be hindering when they exceed the individual’s ability to handle them.

A major difference between the two perspectives developed by Wrzesniewski and Dutton (2001), and Tims and Bakker (2010) is that the former conceptualization includes cognitive crafting while the latter does not. The motivation to exclude cognitive crafting strategies was that the authors considered cognitive changes as coping with circumstances rather than actively changing the boundaries of work (Tims & Bakker, 2010). The similarities and differences between crafting and coping are further addressed in section 3.4.3 below.

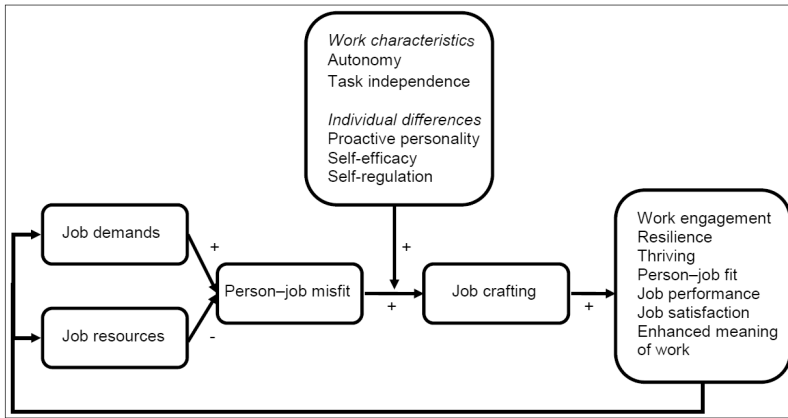


Figure 2: Proposed model of job crafting, framed within the JD-R model, in Tims and Bakker (2010)

Research within the perspective developed by Tims and Bakker (2010) has mainly been quantitative, measuring the occurrence of different job crafting strategies, and identifying their predecessor, outcomes, and consequences, with a major focus on actions taken to handle job demands by crafting more resources (c.f. Lazazzara et al., 2020; Lichtenthaler & Fischbach, 2019; Tims & Bakker, 2010; Tims, Bakker, & Derks, 2013). From the two different perspectives, different types of job crafting have been identified and labelled. Within this thesis, both major perspectives have been included, somewhat differently within the different studies, and the thesis has a broad perspective on job crafting when analysing and discussing the findings of the studies.

Lichtenthaler and Fischbach (2019) included 132 job crafting articles (published between the years 2001-2017) in a meta-analysis and integrated the two job crafting perspectives. *Promotion-focused* crafting was differentiated from *prevention-focused* crafting. The former includes increasing job resources and challenging job demands, as well as expansion-oriented task, relational, and cognitive crafting. The latter refers to decreasing hindering job demands, as well as contraction-oriented task and relational crafting (Lichtenthaler & Fischbach, 2019). *Expansion-oriented* task and relational crafting includes adding tasks and seeking new relationships, whereas *contraction-oriented* task and relational crafting includes strategies of avoiding or decreasing tasks and relationships. Promotion-focused job crafting was found positively related to work engagement and performance, whilst negatively related to burnout. In contrast, prevention-focused job crafting was negatively related to work engagement and performance and positively related to burnout (Lichtenthaler & Fischbach, 2019). Aiming to synthesize the two job crafting perspectives, Zhang and Parker (2019) reviewed 125 job crafting articles and presented a ‘three-level hierarchical structure of job crafting’. At the highest level, the authors distinguished job crafting orientation and differed between

approach-oriented crafting (e.g. altering the scope and nature of tasks, and adding extra tasks) and *avoidance-oriented* crafting (e.g. reducing the number of tasks, responsibilities, and requirements) (see also Lazazzara et al., 2020). At the second level, *behavioural forms* of job crafting (i.e. task and relational crafting) were distinguished from *cognitive forms*. At the third level, job crafting content was distinguished concerning the target of change, that is *job resources* or *job demands* (Zhang & Parker, 2019). Lichtenthaler and Fischbach (2016) examined the potential connection between job crafting and motivation to continue working beyond retirement age among older employees within a police department. According to their analyses, older employees engage more in promotion-focused than prevention-focused job crafting. There was no direct relation between prevention or promotion-focused job crafting and motivation to stay in work after retirement age. However, promotion-focused job crafting was positively related to sense of coherence, which was predictive of burnout, which in turn was predictive of motivation to continue working beyond retirement age. Work-related sense of coherence was found to be relatively high among the older employees in the study, and levels of burnout were low. The motivation to continue working beyond retirement age was high among about a third of the respondents (Lichtenthaler & Fischbach, 2016). Organizations should thus facilitate promotion-focused job crafting among older employees to enable crafting strategies that can increase their sense of coherence and motivation to continue working and reduce the risk of burnout.

3.4.2 Job crafting antecedents

In previous research, several conditions have been found to precede job crafting, further referred to as job crafting antecedents. In this thesis, job crafting antecedents have been identified and studied at the individual, workplace (micro), and organizational (meso) levels. A recurrent antecedent at the individual level is a proactive personality, that is, to engage in proactive behaviour and changes (c.f. Bakker et al., 2012). Several individual characteristics have been found to facilitate job crafting, including energy, work engagement, self-regulatory capacity, happiness, and general satisfaction in life (c.f. Chang et al., 2020; Ghazzawi et al., 2021; Jarden et al., 2020; Roczniowska & Bakker, 2021; Sahay & Dwyer, 2021). Workaholism and burnout have, however, also been related to some dimensions of job crafting, namely increasing structural resources and challenging demands, and decreasing hindering demands (Hakanen et al., 2017). Hakanen et al. (2017) found that job crafting can occur even when work is demanding, and related to the JD-R model, these findings indicate that negative conditions still can contribute to job crafting strategies that can increase well-being in work, and make work more manageable.

Recent studies have found that work experience (i.e. years in the job), and levels of skills and competence can facilitate job crafting; the more work experience, the more job crafting (Harbridge et al., 2022; Mayson & Bardoel, 2021). In the early stages of one's career, an employee may engage in crafting strategies including prioritizing work to enhance career opportunities or stability. Further, work-life balance crafting can instead contain

negotiating strategies so that employees can spend more time and energy on their relationships outside of work (Gascoigne & Kelliher, 2018; Lazazzara et al., 2020; Mayson & Bardoel, 2021). Work-life balance as a job crafting antecedent thus seems to lead to different crafting strategies dependent of the job crafter's current life phase. From a meta-synthesis of qualitative job crafting studies, Lazazzara et al. (2020) developed a model to better understand the processes associated with job crafting. The model highlights motives to craft a job, and how different contexts can influence job crafting behaviour. Motives to craft work were summarized into *proactive motives* (e.g. to reach desirable goals) and *reactive motives* (e.g. to cope with organizational changes). Further, and similar to Zhang and Parker (2019), job crafting forms were summarized into *approach crafting* (e.g. adding tasks, reframing roles) and *avoidance crafting* (e.g. task and relational reduction) in the model. Lastly, job crafting consequences were sorted into *positive experiences* (e.g. meaningfulness and job satisfaction) and *negative experiences* (e.g. regrets and stress) (Lazazzara et al., 2020).

At the micro and meso-levels, a job context with support from colleagues and managers, a people-oriented leadership approach, empowerment, and a supportive job design, have been connected to promotion and approach-oriented job crafting. This means, for example, adding extra tasks and positively reframing roles. As mentioned above, promotion-focused job crafting has been connected to work-related well-being (Audenaert et al., 2020; Esteves & Pereira Lopes, 2017; Jarden et al., 2020; Lazazzara et al., 2020; Lichtenthaler & Fischbach, 2019; Pan et al., 2021). In comparison, a constraining work context, with little resources, can lead to prevention and avoidance-oriented job crafting and contraction-oriented crafting strategies – such as lowering hindering demands by reducing difficult tasks and non-supporting relations – which have been negatively related to work engagement and job performance, and positively related to burnout (Bindl et al., 2019; Lichtenthaler & Fischbach, 2019). The organizational settings that the job crafter acts within can thus either promote or hinder job crafting with positive consequences for the job crafter. In addition, higher-rank employees, with formal autonomy and power, have been found to perceive job crafting challenges as within their expectations of how work should be conducted, whereas lower-rank employees tend to put greater emphasis on their job description, and what others expect from them (Berg et al., 2010). With a higher-rank position, there is more space for prioritizing tasks (Palm & Eriksson, 2018). This adds a power perspective to the job crafting concept, indicating that some professional groups have, or perceive, more opportunities to craft their jobs than others.

3.4.3 Job crafting in relation to coping

As previously mentioned, Tims and Bakker (2010) chose to exclude cognitive crafting from their conceptualization of job crafting. They argued that these kinds of crafting strategies were more related to coping with circumstances, rather than actively changing work boundaries. Different types of job crafting have been differentiated from each other. For example, contraction-oriented crafting and prevention-focused crafting refer to strategies

to decrease hindering demands and to reduce tasks and relations that, for instance, are not perceived as developmental or supporting (Lichtenthaler & Fischbach, 2019; Zhang & Parker, 2019). These job crafting types can be seen as closely connected to proactive coping, that is coping mechanisms that include efforts taken to prevent or modify potential stressors or stressful situations before they even occur (e.g. accumulating resources, recognising potential stressors, making use of feedback from initial coping strategies) (Aspinwall & Taylor, 1997).

There are some identified differences between coping and crafting: for example, coping strategies seem to be triggered by feelings of stress or tension, while there is no similar emotional trigger of job crafting (Lazarus & Folkman, 1984; Wrzesniewski & Dutton, 2001). Coping is in general considered a reaction to something that is perceived as stressful and/or threatening, whereas job crafting strategies are proactively related to resources and demands in work (Aspinwall & Taylor, 1997; Palm & Eriksson, 2018; Tims, Bakker, & Derks, 2013; Wrzesniewski & Dutton, 2001). When reframing the cognitive boundaries of work, employees actively alter the purpose and meaning of their work. In contrast to reactively coping with demands, cognitive crafting can ‘boost’ employee well-being and job satisfaction (Kilic & Kitapci, 2023; Wrzesniewski & Dutton, 2001). It should also be considered that what is perceived as challenging for one person could be demanding for others, and the other way around (Zhang & Parker, 2019). Thus, the very nature of the strategies used (i.e. specific elements) to master different work situations can determine whether these strategies are promotion or prevention-oriented, as discussed by Palm and Eriksson (2018). To master intensive work situations, employees have been found to simultaneously engage in crafting and coping strategies, which further indicates the closeness between the two concepts (Palm & Eriksson, 2018).

3.5 Identifying knowledge gaps

The scope of the job crafting literature is growing. According to a search in the Scopus database, the number of yearly published job crafting studies (with “job crafting” in either title, abstract, or keywords) increased from two in 2001 to 166 twenty years later (2021). The list of countries in which job crafting studies have been conducted is extensive. Most studies have been conducted in Europe and North America, but a growing number of studies are also being published in Asia, South America, and Africa.

During the last couple of years, the job crafting literature has advanced with more theoretical and empirical robustness (Tripathy & Padhi, 2023). As presented in this thesis, more conceptualizations have been developed since Wrzesniewski and Dutton first defined the concept in 2001. Although the list of published studies is extensive, there is still a perceived lack of studies with concrete practical implications about the *why* and *how* of facilitating job crafting in different work settings, for example addressing the questions: *Why do employees engage in job crafting?* And, *How can job crafting be promoted and facilitated in different domains?* As mentioned in the introduction, it is in the interest of

ergonomics research to contribute with knowledge about more sustainable working systems. How can job crafting, which according to research has many positive effects on both people at work and organizations, be promoted and enabled in practice?

This thesis addresses contemporary challenges in working life: to increase work-related well-being and to enable people to extend their working life healthily. Health-promoting aspects of job crafting were explored among employees from a system perspective, where the individual employee has been framed within his or her working context. With such a focus, it is considered that this thesis has an opportunity to increase knowledge about how to facilitate health-promoting job crafting, regardless of working context (e.g. supporting or constraining). The respondents in this thesis have provided information from working with successful work environment implementations and well-functioning daily work even though they are working in contexts that normally struggle with challenges and demands that may exceed their abilities to promote health. Through the studies conducted within this thesis, good examples of ways to promote and facilitate employee-driven job crafting strategies to meet these challenges are presented.

4 METHODS

4.1 Research design

This thesis is a compilation of five sub-studies conducted within two different contexts: one manufacturing industrial company and Swedish public healthcare. In the industrial company, data collection was conducted within an age management project, initiated and partially financed by Scania CV AB, which has its registered office in Sweden. The age management project aimed to enable and motivate the blue-collar workers within the company to extend their working life in one of two ways: i) being able to stay in work until statutory retirement age, and ii) choosing to extend their working life beyond the statutory retirement age. Respondents in Sweden, the Netherlands, and France were included in the age management project. In public healthcare, data was collected within a project aiming to gain a deeper understanding of the importance of learning on different organizational levels for employee well-being and engagement, during organizational development. The project was conducted within Swedish public healthcare and AFA Insurance financed the project (registration number 150336).

In this thesis, a mixed method design provided both quantitative and qualitative data for the analyses. Within the age management project, a survey first provided descriptive and quantitative data about the respondents' perception of different factors related to retirement. Secondly, semi-structured interview questions provided qualitative data on the occurrence and nature of the job crafting motives and strategies described by the older blue-collar workers. The same set of data was used in Papers I and II. Within public healthcare, a survey was first administered to healthcare employees at two times, 6-8 months apart. These questionnaires provided quantitative data to analyse the relation between social capital in the workgroup, job crafting, and employee well-being in Paper III. For Papers IV and V, one data collection provided qualitative data from interviews and observations, which was analysed inductively and deductively for a deeper understanding of the antecedents, motives, and strategies of health-promoting job crafting. Table 1 presents an overview of the aims, respondents, and methods in Papers I-V.

Table 1: Overview of aims, respondents, and methods in Papers I-V

	Paper I	Paper II	Paper III	Paper IV	Paper IV
Aim	The aim of the study was to increase the knowledge of factors influencing the retirement decisions among blue-collar workers in a global manufacturing company.	The aim of the study was to analyse if and how older blue-collar workers describe that they involve in, and see opportunities for, job crafting. It was also analysed if and how the job crafting strategies found were described as contributing to an extended working life.	The general aim in this study was to attain a better understanding of the ways the concepts of work engagement and employee job satisfaction possibly can be promoted by employees' self-imposed behaviours intended to make their job fit better with their interests and motivations (i.e. job crafting) and by a positive psychosocial work climate characterized by mutual trust (i.e. social capital).	The aim of this study was to identify antecedents of health-promoting job crafting among healthcare employees. A further theoretically driven aim was to interpret the inductively analysed antecedents and relate them to a sense of coherence.	The aim of this study was to explore different job crafting strategies healthcare employees engage in to promote well-being in work, and the motives behind these strategies.
Respondents	100 blue-collar workers, aged 55 years and older.		250 healthcare employees (target sample n=421; 59% response rate)	16 healthcare employees 5 healthcare managers	
Data collection	Survey Semi-structured interviews		Two wave longitudinal survey, T1-T2: 6-8 months apart	Semi-structured interviews Observations	
Analysis	Descriptive analysis of quantitative data Deductive content analysis of qualitative data	Abductive content analysis	Deductive/Hypothesis-testing Structural equation modelling (SEM) with manifest variables	Abductive thematic analysis	

4.2 Sampling and data collection

4.2.1 Papers I and II

Due to rising retirement ages in countries where Scania operates, the age management project aimed to find ways to both motivate and enable blue-collar workers to stay in work longer, and to stay healthy whilst extending their working life. As a first step, a mapping of factors contributing to blue-collar workers' retirement decisions was conducted. Production plants in Sweden, the Netherlands, and France were included in the project. The data collected within the age management project was used in both Papers I and II.

A pilot study was first conducted on a smaller scale, which included meetings and interviews with blue-collar workers, trade union and works council representatives, and HR and OHS professionals, to test and adapt questions in the survey and interview guide. All questions were professionally translated from Swedish into Dutch and French. Thereafter, the questions were discussed and adapted within the project groups in each country, to ensure that the content was perceived in the same manner in the three countries. During this phase, some questions were removed from the French version of the survey and interview guide, since these questions were regarded as too difficult to interpret (i.e. about sense of coherence), or too private to ask in a work context. Data that was collected from blue-collar workers during the pilot study was not included in the analyses of the main study.

In the main study, data was collected at five production plants: three in Sweden (SE), one in the Netherlands (NL), and one in France (FR). The respondents included 100 blue-collar workers, aged 55 years and older. The average age of the respondents was 62 years (range: 56-69 years), and the average years of employment at Scania was 29 years (range: 4-51 years). About one-third of the respondents were recruited in each country (SE=29; NL=37; FR=34). The majority of the respondents worked with assembling tasks. Others worked in logistics, painting, engine testing, and final assembling. Most respondents were still working full-time (n=79), whereas some were part-time retired (n=7), and 14 people were already fully retired. Respondents first completed a survey with structured questions, guided by an interviewer. The survey was built on previous research on factors found to influence retirement decisions, either to end working life or to extend working life. These factors included physical and psychosocial work environment, work organization and job task characteristics, personal effort, economic situation, perceived health and personal factors, and attitudes towards an older workforce (c.f. Nilsson, 2016). See Table 3 in Paper I for a full description and references. With the stem question *“Which of the following aspects are crucial when you consider retirement?”* the respondents were asked to take a stand on if, and in what way, the aspects were considered crucial to them: *“Do they contribute to retirement or a prolonged working life?”*. All questions were open for comments.

A semi-structured interview followed the survey, with questions concerning for example the work environment for older workers. These questions included for example: *“What changes would you like to see at your workplace that can contribute to a better work environment for older workers?”*, and *“To what extent are you able to influence or change your work tasks and how to perform your job?”*. The questions were followed by supplementary questions, for example in what way work was changed. All interviews were conducted in the first language of each country, by an interviewer who was trained by the author of this thesis. In Sweden, the author of this thesis conducted the majority of the interviews, which were complemented by some interviews conducted by HR and OHS professionals within the company. In the Netherlands and France, one HR student and one

HR trainee conducted the interviews respectively. The interviews were not recorded. During the interviews, the interviewer noted the answers and comments provided by the respondents. The Dutch and French data were translated to English by representatives within the project groups, and coded by numbers before reported back to the author of this thesis. During the data collection, all the participating production plants were visited. Guided tours in the factories were included in the visits, as well as the opportunity to meet trade union representatives in Sweden, and representatives of the works councils in France and the Netherlands. Company physicians and HR professionals provided more information about the company and the work environment. Experiencing the older production workers' work environment with all senses contributed to a deeper understanding of their work context.

4.2.2 Paper III

In Paper III data was provided through a longitudinal study design with a questionnaire distributed at two points in time (T1 and T2), 6-8 months apart, to all employees at workplaces where managers participated in an ongoing research project about health-promoting leadership. The target sample consisted of 421 employees within Swedish public healthcare. A response rate of 59% provided us with an analytic sample of 250 employees who had responded to any of the study variables at both T1 and T2. Not all questions in the questionnaire were identical at T1 and T2, however, the questions included in this study were the same at both times. The respondents represented 17 workplaces in two different healthcare regions. The workplaces included dental care clinics and care departments in hospitals. The professional roles of the 250 participants (220 women, 30 men) in the analytical sample are presented in Table 2 below.

Table 2. Respondents' professional roles in Paper III

Professional role	No.
Dental nurses	32
Dental hygienists	11
Dentists	15
Assistant nurses	45
Registered nurses	78
Occupational therapists and physiotherapists	21
Psychologists and pedagogues	9
Audiologists	8
Dietician	1
Administrative staff	11
Technician	1
Clinic coordinators/section leaders	2
Had not stated their job title	16
In total	250

The following dimensions from the original survey data were included in this study: social capital, job crafting (task crafting, relational crafting, and cognitive crafting), work engagement, and job satisfaction. In the questionnaire, these variables were measured with validated instruments (see Table 3 for a summary of the measures).

Social capital was captured with five items applied to social capital within the workgroup (Kouvonen et al., 2006). These items were: “People keep each other informed about work-related issues in the work unit”; “People feel understood and accepted by each other”; “Members of the work unit build on each other’s ideas in order to achieve the best possible outcome”; “People in the work unit cooperate in order to help develop and apply new ideas”; and “I can trust my co-workers”. The participants responded on a 5-point Likert-type scale (1 = do not agree, at all to 5 = fully agree).

The three conceptual definitions of *job crafting* – task crafting, relational crafting, and cognitive crafting – were captured in three subscales (Slomp & Vella-Brodrick, 2013), with the stem question “How frequently do you do the following in your job...?”. Participants responded on a 6-point Likert-type scale (1 = almost never, to 6 = very often). *Task crafting* was captured with the following five items: “introduce new approaches to improve your work”; “choose to take on additional tasks at work”; “change the scope or types of tasks that you complete at work”; “introduce new work tasks that better suit your skills or interests”; and “give preference to work tasks that suit your skills or interests”. *Relational crafting* was captured by these four items: “make an effort to get to know people well at work”; “organize or attend work-related social functions”; “organize special events in the workplace”; and “make friends with people at work who have similar skills or interests”. *Cognitive crafting* was captured with the following items: “think about how your job gives your life purpose”; “remind yourself about the significance your work has for the success of the organization”; “remind yourself of the importance of your work for the broader community”; “think about the ways in which your work positively impacts your life”; and “reflect on the role your job has for your overall well-being”.

Work engagement was measured with the Scale of Work Engagement and Burnout (SWEBO), which includes 10 items to cover the concepts of vigour, dedication, and absorption (Hultell & Gustavsson, 2010). The stem question and items were: “How often during the last two weeks have you at work felt...?”, and “energetic”; “persistent”; “active”; “pride”; “dedication”; “inspired”; “fully concentrated”; “attentive”; “nimble-witted”; and “clear-headed”. A 5-point Likert-type scale (1 = not at all, to 5 = all the time) was used.

Job satisfaction was measured with a sub-scale of the Copenhagen Psychosocial Questionnaire (COPSOQ II) (Kristensen et al., 2005). The stem question and items were: “How satisfied are you with...?”, and “your prospects in your work”; “the work environment”; “the way your department is managed”; “the ways your knowledge is

used”; “the challenges and competence demands in your work”; and “your work in total, all aspects included”. Participants responded on a 4-point Likert scale (0 = very unsatisfied, to 100 = very satisfied).

Table 3: Summary of the measures in Paper III

Variable	Items	Likert Scale	Cronbach alpha (T1/T2)
Social capital within workgroups (Kouvonen et al., 2006)	People keep each other informed about work-related issues in the work unit;	1 = Do not agree	0.88/0.86
	People feel understood and accepted by each other;	2 = Hardly agree	
	Members of the work unit build on each other's ideas in order to achieve the best possible outcome;	3 = Neither or	
	People in the work unit cooperate in order to help develop and apply new ideas	4 = Partially agree	
	I can trust my co-workers	5 = Fully agree	
Task crafting (Slomp & Vella-Brodrick, 2013)	How frequently do you do the following in your job:	1 = Almost never	0.71/0.76
	- introduce new approaches to improve your work;	2	
	- choose to take on additional tasks at work;	3	
	- change the scope or types of tasks that you complete at work;	4	
	- introduce new work tasks that better suit your skills or interests;	5	
	- give preference to work tasks that suit your skills or interests	6 = Very often	
Relational crafting (Slomp & Vella-Brodrick, 2013)	How frequently do you do the following in your job:	1 = Almost never	0.72/0.75
	- make an effort to get to know people well at work;	2	
	- organize or attend work-related social functions;	3	
	- organize special events in the workplace;	4	
	- make friends with people at work who have similar skills or interests	5	
		6 = Very often	

Variable	Items	Likert Scale	Cronbach alpha (T1/T2)
Cognitive crafting	How frequently do you do the following in your job:	1 = Almost never	0.86/0.90
(Slemp & Vella-Brodrick, 2013)	<ul style="list-style-type: none"> - think about how your job gives your life purpose; - remind yourself about the significance your work has for the success of the organization; - remind yourself of the importance of your work for the broader community; - think about the ways in which your work positively impacts your life; - reflect on the role your job has for your overall well-being 	2 3 4 5 6 = Very often	
Work Engagement	How often during the last two weeks have you at work felt:	1 = Not at all	0.89/0.89
(SWEBO, Hultell & Gustavsson, 2010)	<ul style="list-style-type: none"> - energetic; - persistent; - active; - pride; - dedication; - inspired; - fully concentrated; - attentive; - nimble-witted; - clear-headed 	2 = Less of the time 3 = A small part of the time 4 = Most of the time 5 = All the time	
Job satisfaction	How satisfied are you with:	0 = very unsatisfied	0.80/0.86
(COPSOQ II, Kristensen et al., 2005)	<ul style="list-style-type: none"> - your prospects in your work; - the work environment; - the way your department is managed; - the ways your knowledge is used; - the challenges and competence demands in your work; - your work in total, all aspects included 	33 = unsatisfied 67 = satisfied 100 = very satisfied	

4.2.3 Papers IV and V

A qualitative study design provided data for Papers IV and V and included individual semi-structured interviews with five healthcare managers and sixteen healthcare employees from different professional groups (see Table 4). The respondents represented five workplaces located in three different healthcare regions. The participating healthcare departments were all known to the research group as being active in developing their work environment, either from participating in previous research projects administered by researchers in the group (e.g. health-promoting leadership) or being recruited from our professional networks. There were departments with daytime activities only (dental clinic, surgery department, and occupational therapy) as well as departments with 24-hour

operations (surgery care department, radiology department) represented in the study. No respondents worked night shifts.

The interviews were all conducted at the respondents' workplaces during working hours, and the respondents were allowed to participate without being disturbed. A master's student who wrote her thesis within the research project conducted the interviews with the occupational therapists. The author of this thesis conducted the remaining interviews. The interview protocols used to guide the interviews included open-ended questions within topic areas (Scanlan, 2020) and were designed to cover the scope of the ongoing research project.

Table 4. Respondents' professional roles in Papers IV and V

Professional role	No.
<i>Employees</i>	
Dental nurse	1
Assistant nurse	4
Registered nurse	5
Occupational therapist	6
<i>Managers</i>	
Section leader	1
Ward manager	3
Clinic manager	1
In total	21

The following areas were included in both Papers IV and V: *background information* (e.g. professional role, work experience); *preconditions and strategies for job crafting* (e.g. perceived opportunity to change and develop within current work settings); *leadership approach* (e.g. perceived, and intended leadership styles); *workgroup context* (e.g. trust, roles, maturity); *learning from challenges and hinders* (e.g. strategies to handle obstacles, outcomes); *perceived resources, and need for resources, in work* (e.g. relational and structural resources). The interview protocols evolved to some extent during the interview process and the questions asked when interviewing the managers and employees differed slightly between the two groups of respondents. The questions also somewhat differed between the two interviewers. Some additional material collected by the author of this thesis included photos taken when visiting the departments, and notes from observations in two departments (dental clinic and surgery care department). This material contributed to a deeper understanding of the working contexts.

4.3 Analyses

4.3.1 Paper I

In the first Paper, the data from the survey was first descriptively organized into percentages of respondents who stated the different aspects and factors as contributing to retirement, extending working life, or if they had no impact on their decision. In unclear situations, for instance, if the respondent had stated an aspect as important but not commented in what direction, interview answers were used to understand in what way the aspect was considered important. Further, answers from the semi-structured interviews and comments in the survey were analysed to gain a deeper understanding and substance to the individual answers. For example, the comment *“Shift work is hard, especially night shifts, and has been so for at least ten years”*, described what the respondent meant when stating that shift work was contributing to their decision to retire. *“The opportunity to work daytime is the main reason for me to be able to continue working”*, described how an individualized work set-up enabled the person to extend their working life.

4.3.2 Paper II

In Paper II, the aim was to identify job crafting among older blue-collar workers and to explore whether the identified strategies were considered to contribute to an extended working life. For this, a framework of content analysis was chosen (Elo & Kyngäs, 2008). An abductive approach allowed movement back and forth between the empirical data and job crafting theories (Graneheim et al., 2017; Karlsen et al., 2021). Job crafting theories that were consulted in the interpretation included both the role-based perspective by Wrzesniewski and Dutton (2001) and the resource-based perspective by Tims and Bakker (2010). Qualitative data from the semi-structured interviews, as well as comments from the survey, were included in the analyses. Thus the same set of data was analysed in Papers I and Paper II. Some were the same, and the analyses from Paper I enriched the analyses in Paper II. Some parts that were not analysed in Paper I were relevant with a different study objective in Paper II. After familiarizing with the data, identified job crafting strategies were sorted into the three original job crafting categories: task crafting, relational crafting, and cognitive crafting (Wrzesniewski & Dutton, 2001). Secondly, the strategies within each category were analysed in terms of increasing or decreasing demands and resources in work (Tims & Bakker, 2010). Thirdly, the identified strategies were analysed in terms of promoting an extended working life or not. The analyses were conducted by the author of this thesis and recurrently discussed with one supervisor. Notes from the original data collection supported the analyses (e.g. from discussions within the research group, and with the other interviewers). Due to availability and convenience, the findings were however not further discussed with any of the representatives from the manufacturing company who were involved in the original data collection.

4.3.3 Paper III

In the third paper, two hypotheses were tested with structural equation modelling (SEM):

- i) *Work-group social capital has a predictive effect on work engagement, job satisfaction, and individual job crafting.*
- ii) *Job crafting mediates the potential predictive effect of social capital on work engagement and job satisfaction.*

Survey data was analysed in SEM models with manifest variables (Muthén & Muthén, 2017; Ullman & Bentler, 2012). The variables were: social capital, work engagement, job satisfaction, and the three types of job crafting: task crafting, relational crafting, and cognitive crafting.

To test the hypotheses, two separate models were designed. First, the influence of social capital over time on work engagement, job satisfaction, and the three types of job crafting (task, relational, and cognitive) was examined using a cross-lagged panel design that included both T1 and T2 while controlling for both concurrent and temporal variance. Second, the indirect influence of social capital on work engagement and job satisfaction via the different aspects of job crafting was examined using a cross-lagged panel model. This model also controlled for temporal variance for all variables and concurrent variance at T1. There were two-way paths included between all possible combinations of variable pairs. At T2, this model controlled for concurrent variance separately for the three variables of social capital, work engagement, and job satisfaction, and separately for the different types of job crafting. All variables were approximately normally distributed, and therefore the maximum likelihood (ML) estimator was used to estimate both models. The model fit was evaluated with the comparative fit index (CFI), and the root mean square error of approximation (RSMEA) (Bentler, 1990; Browne & Cudeck, 1992; McDonald & Marsh, 1990).

4.3.4 Papers IV and V

The data collected for Papers IV and V, including interview transcripts and photos from visiting the departments, were stored, organized, and analysed in NVivo software. Braun and Clarke's (2006, 2021) framework of reflexive thematic analysis was chosen for both papers. The analysis processes followed the six recommended steps to establish trustworthiness, including 1) Familiarizing yourself with the data, 2) Systematic data coding, 3) Generating initial themes, 4) Developing and reviewing themes, 5) Refining, defining and naming themes, and 6) Producing the report (Braun & Clarke, 2006, 2021).

The aims and objectives of the different papers led to two different tracks in the analysis process where different parts of the interviews were relevant and included in each paper. For example, the content issues of the interviews with the managers were excluded in Paper V since this paper focused on employees' perceptions of job crafting. The

supplementary data (notes and pictures from the visits and observations) provided a deeper understanding of the informants' working contexts. The analysis processes were led by the author of this thesis and discussed in two separate groups of co-authors, who provided critical perspectives and developing questions. As these analysis processes took place in parallel, they enriched each other and provided a deeper understanding of the content.

Both Papers IV and V had an abductive approach in the data analyses (Graneheim et al., 2017; Karlsen et al., 2021). This meant that the data firstly was inductively analysed with an open mind and closeness to the data. Braun and Clarke's (2006, 2021) reflexive thematic analysis was chosen in both papers. When choosing this method, it is considered that data cannot be analysed in a theoretical vacuum. Instead, inductive analyses are 'grounded' in the data. When moving further, codes and themes were deductively interpreted from our understanding of the previous research on job crafting, work-related well-being, and health-promoting work, presented in the background section of this thesis. In the analysis processes, meetings and discussions were recurrent within the research groups, in different constellations and with different objectives. The analysis processes were thus iterative and included several revisions of the initial themes.

4.4 The author's preconceptions

With a background in behavioural science and ergonomics, my research interest is mainly focused on individuals in work, and how to increase well-being and sustainability through working life. When starting the data collection, my knowledge and understanding of the two different working contexts were limited. During the data collection, visits and observations were included in the process, to further gain an understanding of the working contexts and the working environment in which the respondents conducted their work. In addition, I was able to meet people working outside the clinical, and manufacturing work, for example, HR personnel, occupational physicians, and representatives from trade unions and the works councils. I was also invited to join staff meetings and joint lunch breaks in some of the participating departments. Experiencing the working environment and daily work with all my senses added to my understanding of the working contexts and the potential challenges within these. My limited prior understanding of the contexts, as well as previous experiences from creating rapport with interviewees, hopefully led to an interview situation where interviewees felt safe to open up, and that my recurrent requests to develop or clarify answers further gained a broader and deeper understanding of the work contexts and strategies to change and adapt work.

4.5 Ethical and methodological considerations

4.5.1 Ethical considerations

The Regional Ethics Review Board in Stockholm approved the studies in this thesis before data collection commenced (reference numbers: Papers I-II, 2017/320-3; Papers III-V, 2014/1883-31/5). In addition, when planning the different studies within this thesis,

ethical considerations were taken, regarding, for example, information, confidentiality, and utilization. The research processes within the studies included in this thesis were guided by the Principles of Good Research Practice by the Swedish Research Council (Vetenskapsrådet, 2017). The European Code of Conduct for Research Integrity (ALLEA, 2023) also supported the ethical and methodological considerations taken within the conducted studies. The considerations have included, for example, information about the research projects beforehand, informed consent from all participants, systematic planning, handling the data with care, and decoding data when publishing research findings. For example, data that could be traced to individual respondents (e.g. quotes from interviews) were decoded before reporting findings in articles and reports. The blue-collar respondents within this thesis participated in a study that was initiated by their employer, and all respondents (except the retired blue-collar workers) in the studies included in this thesis participated during working hours and were invited to participate via their managers or other employers' representatives (e.g. HR). The voluntary participation of respondents was therefore carefully emphasised (Resnik, 2016).

4.5.2 Time for data collection

The data collection within this thesis was conducted during 2017-2019, before the outbreak of the COVID-19 pandemic. The analyses of the data were based on pre-pandemic conditions. More recent data would probably be characterised by this period, which affected the healthcare sector in particular. Job crafting among healthcare employees during this period has, for example, been connected to sense-making in crisis (Sahay & Dwyer, 2021).

4.5.3 Considerations regarding Papers I and II

The age management project was, as described above, conducted in three different countries (Sweden, the Netherlands, and France). Since the study was planned and administered in Sweden, it was the prevailing Swedish research ethics rules that governed the design of the studies. Discussions regarding research ethics (e.g. confidentiality of participants) were held within the research groups in the different countries. One methodological consideration in this study was the translation of the survey and interview questions as well as the translation of interview data. Another consideration was that there were multiple interviewers. To meet the first consideration, all questions in the survey and interview guide were professionally translated from Swedish into Dutch and French. An English version, translated by the Swedish research group, was used in the communication between the different research groups. When visiting the different countries, all questions were thoroughly discussed in terms of content and translation within the research groups. As mentioned above, this led to some re-formulated questions, and two questions were removed from the French version of the interview guide. The interviewers in the Netherlands and France met the author of this thesis together with one representative from their research group, who had participated in the previous discussions. The content of the questions was then further discussed to support the interviewers in, for example,

facing follow-up questions from respondents. The same procedure was conducted with the Swedish interviewers, to ensure that the interview questions were perceived similarly by all interviewers. During the interview phase, the author of this thesis was available for questions from the interviewers, and when interview data was reported back to the Swedish research group clarifying questions could be asked to the interviewers.

When reporting data back to the research group in Sweden, the Dutch interviewer translated the respondents' answers directly into English. In France, the interview data was first stored in French and thereafter translated to English by a person within the French project group. To ensure confidentiality in the age management project, all material was decoded before being reported back to the author of this thesis; numbers only represented the respondents. Regarding the second consideration, some of the content in the interviews could have been lost in the translation process, for example, linguistic nuances, jargon and slang, as discussed by McKenna (2022). When preparing the manuscript for Paper II, a bilingual person with English as their mother tongue was consulted to retain the meaning of metaphors in the Swedish interview quotes. This kind of nuances could however have been lost in the data from the other countries (McKenna, 2022). Data that could not be interpreted due to linguistic ambiguities was excluded from the analyses.

4.5.4 Considerations regarding Paper III

To ascribe confidentiality during the data collection and when presenting the findings, age was excluded from the requested background information in the questionnaire. The respondents received written information about voluntary participation and that they could withdraw participation at any time. The respondents consented by answering the questionnaire.

4.5.5 Considerations regarding Papers IV and V

In the qualitative design of the study where data was collected for Papers IV and V, semi-structured interviews were chosen to provide interview data with both breadth and depth in scope. In addition, observations were conducted, and some material about internal work environment efforts was provided (e.g. photos of visualizing boards etc.). The participating departments were recruited from professional networks in the research group, as part of a larger data collection. The research project in which data was collected had its focus on work health promotion, and several managers in the participating departments were also participating in a health-promoting leadership training program. Even though this sampling strategy can have provided informants that were chosen by the managers to give the 'correct' information, it was considered to provide important information to learn from about job crafting strategies to increase well-being in working contexts that normally struggle with several challenges. When starting the interviews, the informants were asked about their willingness to participate, as well as if there were any ambiguities regarding their participation; respondents were informed verbally and in written text about the study

and their possibility of cancelling an ongoing interview before accepting participation with a signature.

5 FINDINGS

The results from the included papers are presented by answering the research questions of the thesis. This section is structured to answer research questions A, B, and C one by one with references to the respective papers.

A: Factors contributing to retirement and/or to an extended working life, and their relation to job crafting

What factors contribute to retirement and/or to an extended working life among blue-collar workers in the manufacturing industry? How are these factors related to job crafting?

To capture a comprehensive picture of factors influencing retirement decisions among older blue-collar workers, the study design included four different levels: *individual*, *workplace* (micro), *organizational* (meso), and *societal* (macro) levels. The most important findings on each level were the following:

In Paper I, self-experienced physical and mental health, expected future health, and spending more time with family and friends, were the most important factors contributing to retirement at the individual level in all countries. Some respondents talked about having some ‘good years’ after retirement, with their health intact, whereas others said they were healthy enough to stay in work. Thus, perceived health could be considered both a push factor and a stay factor. Spending more time with family and friends was perceived as a pull factor. The economic situation was the most prominent factor in staying and extending working life. In Sweden, a local agreement enabled blue-collar workers with long careers within the company (25-30 years) to retire earlier while maintaining a full pension. It was more common to express worries about the economic situation, for example not being able to provide for their basic needs, in France and the Netherlands compared to Sweden. Nevertheless, the French respondents expressed the least interest or intention to extend their working life beyond retirement age, even though France had the lowest statutory retirement age among blue-collar workers. It was expressed that work is work, and not what gives life meaning.

At the workplace (micro) level, the most common stay factors to extend working life were social support from colleagues and superiors and the social capital in the workplace. This was expressed more in Sweden and the Netherlands compared to France. French respondents said that support from the closest superior was lacking and that the social capital in work had decreased, which then became a push factor concerning their retirement decision. Respondents in all countries who said they were happy at work were more prone to continue working than those who, for example, said they stayed in work only for the money. The most recurrent push factors contributing to retirement in all countries were physical workload, repetitive tasks, and work-related stress.

Setup of working shifts, and work distribution were the most common factors at the organizational (meso) level, however differently perceived; respondents in Sweden and the Netherlands considered shift work, especially night shifts, tough and thus pushed them out of work and contributing to retirement. In France, work was planned differently without night shifts. French respondents were more positive about shift work in general, and it was said to be one way of getting variation in work. Swedish respondents had a more negative attitude towards the organization of the work, compared to the respondents in the other countries, where comments instead were that the work set-up enabled variation and recovery during the day. It was, however, mentioned that organizational changes had decreased room for initiatives and room for adaption of work.

At the societal (macro) level, respondents in Sweden and the Netherlands considered national pension schemes to be tough to a greater extent than French respondents. Nevertheless, respondents in both France and the Netherlands said they needed to keep working to provide for their basic needs. As mentioned above, the local pension system in Sweden enabled some workers to retire earlier.

Respondents in all countries requested more variety and freedom in work (e.g. adapted/tailored jobs) which was considered to both enable and motivate them to work longer, and to stay healthy if working life was extended. In both Papers I and II, it is reported that those who already had some freedom and influence in their current job situation (i.e. those who worked outside the assembly line) were able to craft and adjust their jobs based on their conditions and needs, which was said to enable them to stay in work longer. Among respondents in all countries, it was mentioned that relations at work – with both colleagues and managers – were important to extend working life. Enjoying yourself at work, and seeing your work as a meaningful part of something bigger were other factors that were said to enable an extended working life. The respondents thus expressed task, relational, and cognitive crafting strategies that were said to enable them to extend their working life (see Paper II).

B: Antecedents of health-promoting job crafting

What antecedents of health-promoting job crafting can be identified within the manufacturing industry and public healthcare?

Within both contexts, antecedents of health-promoting job crafting were found at the individual level, the workplace level (micro), and the organizational level (meso). These antecedents were considered to promote or facilitate job crafting strategies that in extension were interpreted to be connected to increasing work-related sense of coherence (comprehensibility, manageability, and meaningfulness) among the healthcare employees (see Papers II and IV).

The first antecedent at the individual level was to be a driven person. Among the respondents within public healthcare, motives for health-promoting job crafting were

connected to their personal development. That is, respondents crafted their jobs because they wanted to develop further within their current profession. These respondents were perceived as or considered themselves, to be driven people who wanted to learn and thrive within their work (see Papers IV and V). Some blue-collar workers talked about being able to develop within work and wanted to keep developing regardless of their age. However, within this group of respondents, this opinion was not in the majority. Instead, most blue-collar workers expressed that they did not see any development opportunities; neither did they express an inner drive to develop further. Some also expressed that they had been more inclined to change their work in the past, but that they hesitated to engage in crafting strategies as they got older (see Paper II).

Focusing on the patients' well-being was another antecedent of job crafting at the individual level. In terms of meaningfulness in work, healthcare employees talked about focusing on the patients and their well-being, and accordingly, they engaged in crafting strategies that were connected to improve the situation for their patients as well as themselves. Crafting strategies were thus aligned with what was considered the best for the patients (see Papers IV and V).

At the workplace (micro) level, social capital was found to precede cognitive and relational job crafting, as well as work engagement and job satisfaction among employees in public healthcare (see Paper III). The results thus identified – and strengthened – social capital in the work group as an antecedent of job crafting and employee well-being at the workplace level. The social culture and relations in the department were discussed when interviewing respondents in both contexts (see Papers II, IV, and V). Both blue-collar workers and healthcare employees described how support from colleagues and managers, and an openness to new ideas contributed to crafting strategies, such as asking for development opportunities and asking colleagues for help and support.

Another antecedent of health-promoting job crafting at the workplace level was to work autonomously. Among the blue-collar workers work settings differed between one group of respondents who worked on the assembly line and others who had more autonomy in work and were able to plan their days to different extent (e.g. working in logistics, painting, testing engines, or final assembling). Respondents who worked on the assembly line expressed fewer opportunities for job crafting. However, within both groups, some said they had no opportunity at all to affect work, and some saw different ways to influence, adapt, and optimize work for themselves (see Paper II).

Among the healthcare employees, working autonomously or in cross-professional teams (i.e. formal multi-professional teams) was considered to enable them to do more than normally expected in a healthcare setting, and accordingly, they engaged in crafting strategies that were considered to make work more manageable, for example, to create templates for patient assessments. This way of working also provided a more

comprehensive view of work in the departments. One concrete example came from one occupational therapist who chose to work close to a physician and sometimes asked to observe surgery to gain more knowledge about their patients (see Papers IV and V).

C: Health-promoting job crafting strategies

How do blue-collar workers in the manufacturing industry and employees in public healthcare craft their jobs in health-promoting ways?

The most common job crafting strategies among the blue-collar workers focused on the physical boundaries of work, in terms of making smaller adjustments or putting forward ideas of improvements to their weekly quality meetings. Respondents working on the assembly line were able to sometimes conduct tasks in a different order and to move tools and parts to simplify assembly. Respondents with more autonomy in work were able to plan the day to better fit their conditions, for example, to plan a longer time to conduct certain tasks and to find time for rest and recovery during the workday. In the end, possibilities to change and adapt work was mentioned as important to maintain well-being in work, and to be able to continue working (see Papers I and II).

Job crafting strategies derived from the healthcare employees' motives of personal development included asking for new assignments and developing opportunities, such as extra responsibilities outside clinical work. Some respondents organized to exchange knowledge with others, sometimes with their colleagues from the same or different professional groups, and sometimes with other hospitals with similar fields. There were also healthcare respondents who even formed their fields of expertise and specialized roles (see Papers IV and V).

Among the healthcare employees, some expressed that they crafted for more manageability in work. Strategies derived from this motive included making work easier for themselves by developing templates or routines that would simplify work in the future, and balancing perceived demands and personal resources by scheduling time to reflect on work between meeting patients (see Paper IV). Developing supportive relationships was considered one important strategy to increase manageability in work for respondents in both contexts. The blue-collar workers asked their colleagues for help to finish work on time, and some respondents expressed that they asked their managers for solutions to reduce the workload, to make work more manageable (see Paper II). Healthcare employees talked about how they actively choose whom to ask for help and support, for example due to work experience or similar life situations. Some healthcare employees worked in more than one department. For them, it was important to make themselves available to others, and to exchange their knowledge with colleagues (see Papers IV and V). There were also examples of relationship building (with managers) for development opportunities within both contexts.

Lastly, the respondents in both contexts talked about meaningfulness and their mind-set at work. Cognitive crafting strategies, such as to consider the importance of one's contribution to the final product, and to be content with one's effort, were mentioned as adding meaning to the job among the blue-collar workers. Due to the rising retirement age in the Netherlands, respondents had found themselves in situations where working life suddenly was prolonged by two years. To handle that, they said they had to stay positive in work (see Papers I and II). Among the healthcare employees, strategies derived from motives of meaningfulness included involving patients in daily planning and assessments. The respondents also prioritized helping patients with more than they are obliged to (e.g. how to navigate the Social security office). These strategies were said to add meaning to work, for example knowing you had done something good for someone else (see Papers IV and V).

There were respondents within both contexts who, for different reasons, did not craft at all, or crafted considerably less than before. Within public healthcare, some said they had crafted more before but were now content with work the way it was; they wanted to maintain their stability in work or focus on the assignments they had instead of developing further. Balancing private life and work was another reason to reduce job crafting when respondents' energy was needed to manage their family situation (see Paper V). Among the blue-collar workers, there were about one-third of the respondents who saw no opportunity at all for job crafting. Most of these respondents worked on the assembly line, and among their assumptions was also that they could have done more when being younger, but the older they got the more they hesitated to engage in crafting strategies (see Paper II).

The job crafting strategies presented above were mostly connected to different health-promoting aspects for the respondents, such as motivation and engagement, learning and development, decreasing hindering demands, and increasing manageability and meaningfulness in work. The crafting strategies described by the blue-collar workers were however sometimes connected to prevention-focused job crafting. The respondents reacted to a demanding and challenging work setting, in which they were more or less forced to stay longer; the strategies described by the blue-collar workers were mostly aimed at making work easier and reducing hindering demands to maintain their well-being. Some blue-collar workers expressed that they planned to extend their working life beyond the statutory retirement age. To most of the blue-collar respondents, the crafting strategies were however considered to enable them to work as long as they had to (see Papers I and II).

6 DISCUSSION

The overall aim of this thesis was to explore job crafting as part of a health-promoting and extended working life. This was analysed in relation to i) an extended working life among blue-collar workers in the manufacturing industry, and ii) being able to work and feel well within the public healthcare and manufacturing industry. The findings indicate that job crafting can be one type of individual health-promoting strategy, both to enable people to feel well at work and to prolong working life within the manufacturing industry. Within the manufacturing industry, the blue-collar workers expressed how their retirement decisions were influenced by different work-related factors (e.g. work environment, social support), as well as personal factors (e.g. private finances, personal health), and factors on the societal level (e.g. national pension schemes). These findings are thoroughly discussed in Paper I, but not to a further extent in this thesis. The indications of job crafting among the blue-collar workers are however included in this discussion section. When framing the findings within the system model presented in the background (see Figure 1), there were factors related to health-promoting job crafting in different ways at all system levels. These are visualized in Figure 3 and summarized and discussed below.

6.1 Job crafting in relation to a sustainable working life

Regarding the chrono-level, it was found that job crafting motives and strategies were perceived to change over time. Respondents within both contexts described how they sometimes crafted more, sometimes less, and in different ways due to different factors. From the literature on ageing at work, Kooij et al. (2015) discuss the importance of job crafting for older employees regardless of industry, in terms of being able to adapt work when factors related to ageing start to affect people. Among the blue-collar workers, it was mentioned that they sometimes adapted work to being able to keep working. Contrasting the findings by Kooij et al. (2015), many of the blue-collar workers in this thesis however chose to not craft at all or saw no opportunities to do so even though most of them had long experience from their current work. This could be because of the perceived lack of job crafting opportunities that was expressed by the blue-collar workers. Associated with both the chrono and macro-levels, attitudes towards work seem to change over time. For example, the tradition of work design has shifted from the traditional top-down approach, to include both employee-influenced redesign and employee-driven job crafting (Kulik et al., 1987; Oldham & Hackman, 2010; Wrzesniewski & Dutton, 2001). Culture, society, and zeitgeist thus seem to influence how people consider work. Within the age management project, respondents in the different countries expressed different opinions about work and retirement (see Papers I and II). As mentioned above, the French respondents were those who expressed the least interest in extending their working life more than they had to and indicated that there are more important things in life than work. It seemed to them that work is not primarily what identifies a person or an area for personal development. There may thus be different views in society regarding employee involvement in job design and work planning.

Within both working contexts in this thesis, there seemed to be an ongoing interaction between conditions at different levels, individual characteristics and crafting motives on the one side, and individuals' crafting strategies on the other side. Antecedents of health-promoting job crafting were found within work; at the micro and meso-levels, as well as at the individual level in both contexts. Both work-related antecedents and individuals' characteristics and motives seem to relate to health-promoting crafting strategies that enable employees to feel well at work, as presented in Figure 3. These findings are further discussed below.

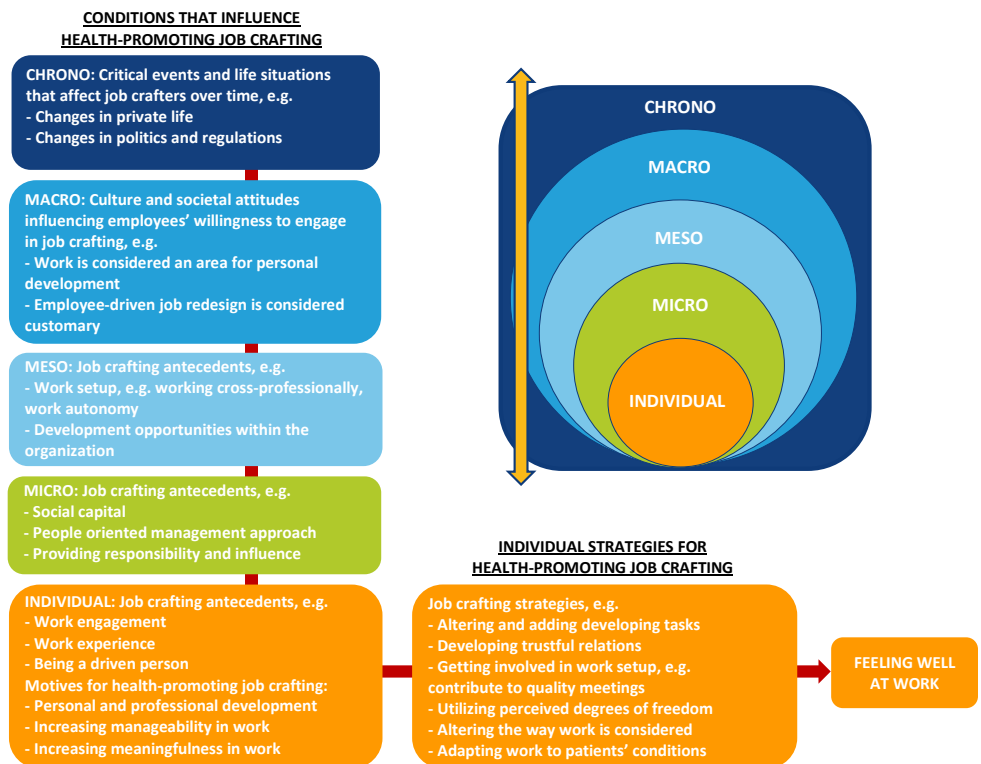


Figure 3: Job crafting in relation to a health-promoting and extended working life: Conditions, strategies, and outcomes of health-promoting job crafting among blue-collar workers and healthcare employees from a system perspective (modified from Dellve & Eriksson, 2017).

6.1.1 Health-promoting job crafting strategies among older blue-collar workers and healthcare employees

Among the blue-collar workers, job crafting strategies included task, relational, and cognitive crafting strategies. These strategies include making work easier and more

manageable for themselves by adapting work whenever possible, as well as asking colleagues for help to finish work in time, and considering work as meaningful to themselves (see Paper II). These identified crafting strategies are in line with previous research including older employees in various contexts (c.f. van Dam et al., 2017; Wong & Tetrick, 2017). Some of the blue-collar workers talked about crafting strategies motivated by an inner drive for development, whereas others expressed that they engaged in job crafting to make work more manageable (e.g. adapting tasks and procedures). A few more said that the crafting strategies were crucial to being able to complete work on time (i.e. asking for help to finish work), thus indicating that they crafted to be able to conduct their current work assignments. To some extent, it was expressed that the identified job crafting strategies could enable the respondents to extend their working life, but not solely in a positive way; some strategies were used to manage the current work situation as long as they had to stay in work, that is up to the statutory retirement age. Many other factors, such as family situation and experienced health, were said to influence retirement decisions as well, and the motivation to work beyond retirement age was low even among those respondents who expressed that they were physically able to work longer (see Paper II). Kooij et al. (2015) discussed the importance of job crafting among older employees, as well as their potential abilities to craft in ways that counteract the ageing processes (e.g. reduced physical and cognitive abilities). Among the blue-collar respondents, this was thus seen to some extent, but some respondents saw no opportunities at all to engage in job crafting (see Papers I and II). This could be explained by both organizational and personal factors, such as working on the assembly line with little perceived room for making adjustments and feeling insecure about engaging in job crafting when getting older – as was expressed by some of the respondents.

Within public healthcare, highly engaged and driven respondents crafted the way their work was conducted, in terms of personal and professional development, which is in line with previous findings within healthcare and other industries (c.f. Hakanen et al., 2017; Tims, Bakker, Derks, et al., 2013). Respondents however also crafted for the common good, meaning that they engaged in strategies that favoured themselves as well as their colleagues and their home department, for example, engaged in cross-professional work and exchanging knowledge with others. The respondents' crafting strategies were sometimes addressed with a focus on the patients, which meant that the respondents crafted in ways that were aligned with both their own and their patients' well-being. In line with previous research, these crafting strategies were also said to increase the perceived meaningfulness of work (c.f. Wrzesniewski & Dutton, 2001). Engaging in promotion-focused crafting strategies to increase meaningfulness and manageability in work also indicates that job crafting can increase work-related SOC (c.f. Hanson, 2004; Lichtenthaler & Fischbach, 2016).

Previous research including healthcare employees indicates that work-life balance as well as work experience (years in the current profession) can alter employees' crafting strategies

over time (Harbridge et al., 2022; Jarden et al., 2020; Mayson & Bardoel, 2021). When the healthcare employees in this thesis crafted for manageability they sometimes crafted in different ways, or considerably less than before, for example after having had development opportunities in work or because of private matters. It could also mean that respondents chose not to craft at all, for example, to increase manageability during intensive periods. In line with previous research, their crafting was thus said to change and vary over time for various reasons.

6.1.2 Job crafting antecedents at the different system levels

At the individual level, many respondents had an inner drive for personal and professional development. This was mainly seen among the respondents within public healthcare, and to a smaller extent within the manufacturing industry. A proactive personality that precedes individuals' job crafting is recurring in the research literature (c.f. Bakker et al., 2012), and in this thesis, the findings indicate that this kind of inner drive could overcome aggravating factors, such as a constraining work context, when it comes to engaging in health-promoting job crafting. This is further discussed below.

The industrial company that participated in this thesis had an active age management regarding their older blue-collar workers. In this, they aimed to enable their older workers to extend their working lives healthily and safely, by planning work based on aspects related to age and ageing, which is supported by previous research (Nilsson, 2016; Nilsson et al., 2011). Within an industrial context, there are challenges, not only for older employees, to conduct work safely, with maintained health and motivation. The work environment is demanding with a high physical workload, shift work, stressful tact time on the assembly line, noise and vibration. In addition, since work often is standardised to reduce slack and keep quality intact, there is little formal room for adjustments and job crafting. Among the blue-collar respondents, some expressed opportunities for job crafting while others saw no opportunities at all. Most respondents however agreed that more autonomy and individualized work were important conditions to enable them to extend their working life in healthy ways. These conditions have previously been found to facilitate job crafting in various contexts (Tims & Bakker, 2010), thus organizing work in ways that enable older employees to engage in job crafting could also possibly enable them to extend their working lives with maintained well-being (Kooij et al., 2022).

At the micro-level, previous research has found that supporting and trustful relations within the workplace facilitate job crafting within healthcare (Esteves & Pereira Lopes, 2017; Jarden et al., 2020) and in general (Lazazzara et al., 2020). In line with this, quantitative data identified social capital in the work group as one antecedent of job crafting and employee well-being among healthcare employees in Paper III; social capital was connected to work engagement, job satisfaction, and relational and cognitive crafting over time, but not to task crafting. These findings were further supported by qualitative data in the interviews with healthcare employees in Papers IV and V, who expressed how

support and mutual trust enabled or encouraged them to engage in different crafting strategies, such as asking for development within and outside their clinical work.

A constraining work context, for example with low social support and little room for employee-driven changes, has so far mostly been connected to avoidance crafting (e.g. reducing the number of tasks and relations) and negative experiences of crafting (e.g. stress, health problems) (Lazazzara et al., 2020). Work settings also affect individuals' job crafting differently, for example, have nurses in surgery been found to craft less than nurses in regular departments (Chang et al., 2020). Both the manufacturing industry and public healthcare contexts can be considered challenging in many ways, as well as constraining, with high physical and cognitive demands, stress, and limited autonomy and room for adjustments due to quality standards and regulations (Bejerot et al., 2015; Liker, 2004). When interviewed, most healthcare respondents however described a supportive work group and management, which, in line with previous research within healthcare and other contexts as well as the findings in Paper III, were said to facilitate their health-promoting job crafting strategies (Audenaert et al., 2020; Esteves & Pereira Lopes, 2017; Jarden et al., 2020; Lazazzara et al., 2020; Pan et al., 2021). There were also healthcare employees who worked in less supportive contexts. Nevertheless, driven people working in these contexts still crafted in health-promoting ways. A proactive personality and characteristics connected to an inner drive is, as mentioned above, one recurrent and general job crafting antecedent on the individual level (Bakker et al., 2012). Among the blue-collar workers, there were only a few respondents who expressed themselves or were interpreted, as driven people. In addition, they all worked in a more or less constraining work context, and it was mentioned that their closest managers were somewhat unavailable, as well as young and inexperienced, without an understanding of the challenges faced by older workers (see Papers I and II). Some blue-collar respondents expressed how their personal characteristics still enabled them to engage in crafting strategies that increased their well-being, for example by growing trustful relations with their managers. On an individual level, being a driven person is an antecedent that thus seems to facilitate and enable health-promoting job crafting regardless of the working context. As mentioned above, a person's inner drive thus seems to overcome work-related conditions when it comes to optimizing work for themselves and their well-being.

Similar to the blue-collar workers, perceived freedom in work was said to facilitate job crafting among the healthcare employees. As previously mentioned, autonomy in work is a strong job crafting antecedent in general (Tims & Bakker, 2010). While some healthcare employees described how working cross-professionally enabled them to engage in job crafting strategies beyond their formal working boundaries, others explained how the autonomy in their professional role enabled them to engage in health-promoting job crafting strategies. Some perceived autonomy in work from their own work experience; with more experience came more perceived opportunities to craft and optimize work for themselves. This way of utilizing formal or perceived degrees of freedom in work further

indicates an ongoing interaction between job crafting antecedents at the micro and meso-levels, and motives on the individual level.

Crafting strategies were said to change over time among the respondents. Some healthcare employees mentioned that they had engaged in more job crafting strategies before, but that they now were content with work the way it was, or that they saw no need for further development. This was true for the blue-collar workers as well. Some of the blue-collar workers expressed an inner drive for further development despite their age, whereas most of them however felt limited in terms of engaging in job crafting strategies, or expressed how they had been more engaged in work when they were younger. It was expressed that there was no room for making changes or adjustments to optimize work and that organizational changes had reduced the possibilities to make adaptations in work. Still, the way they described how they handled work, as well as how they built relations with colleagues to ask for help and support indicated that job crafting was ongoing, however, the job crafters were not always aware of it. As discussed by Tims, Bakker, Derks, et al. (2013), job crafters can influence each other. Team members that craft together have been found to craft individually as well. The blue-collar workers in this thesis did not specifically express that they engaged in job crafting strategies, but they worked closely together in teams, and possibly there were crafting strategies within the work teams that were also adapted on the individual level. At the chrono-level, it is thus manifested that job crafting can change over time, in scope and expression, as well as in incentives and attitudes regarding individuals' involvement in job crafting. Employees' job crafting within this thesis, seems to be influenced by changes at the societal macro-level, as well as at the organizational meso-level and from individual conditions (Bronfenbrenner, 1986): the Swedish laws and regulations regarding WHP is one example of how job crafting may be promoted in organizations. In addition, management principles such as Lean and NPM can be considered to hinder employee-driven job redesign, whereas a trust-based leadership approach can do the opposite. As mentioned above, personal circumstances were found to either increase or decrease job crafting initiatives. Older employees have in general been found to be less restrictive towards engaging in job crafting (c.f. Kooij et al., 2015). In this thesis, there was a difference between the respondents in the two contexts. As mentioned, older blue-collar workers were more restrictive in adapting their work, while older healthcare employees did not express the same hesitation in making adjustments at work, although they expressed that these types of strategies had decreased over time. Job crafting is not an on-off phenomenon. Instead, adapting work as well as possible through job crafting is an ongoing activity, where the job crafter may find different motivators and strategies to make changes in work over and over again (Wrzesniewski & Dutton, 2001).

6.2 Job crafting strategies within the two different working contexts

Within public healthcare, the employees could craft for their well-being in many different ways when caring for patients. For example, there seemed to be almost endless opportunities for those employees who wanted to develop further in terms of assignments,

responsibilities, and specializations; there was always something else to learn or to develop further. At least with supporting organizational structures. Among the healthcare employees, some crafted their roles to something beyond the formal boundaries of their work, when forming specialist roles and planning for exchanges with other hospitals. The motives behind this were connected to their own personal and professional development, but also to a perceived need for more specialized competence within their department and/or hospital. Thus, their intentions were divided between crafting for personal development and for the common good (e.g. better working flow and quality in care within departments) (see Papers IV and V). Those who chose to craft their jobs beyond the work boundaries in this thesis however involved their managers in the process. Although initiated by themselves, the employees further engaged in negotiating and collaborative job crafting strategies that included discussions with their managers to improve work for both themselves and others (i.e. for their development as well as the common good) (c.f. Kira et al., 2010). Building trusting relationships with their managers was said to enable the respondents to form specialized roles and other solutions for themselves, but without jeopardizing the quality of care or stability in work by crafting solely on their own, as discussed by Berg et al. (2010). Instead, they presented an identified need for themselves (i.e. a desire to develop further) as well as their home departments (i.e. need for more specialized competence) that motivated their crafting strategies.

In contrast, the blue-collar workers expressed how they reached an end in terms of crafting for professional development. Respondents working outside of the assembly line saw more opportunities than their colleagues working on the assembly line did, but they were still perceived to be more limited than the healthcare employees in terms of engaging in job crafting strategies. While an assistant nurse can develop a speciality within healthcare, an industrial assembler or other blue-collar workers within the manufacturing industry work with a predetermined final product. The vehicle (or other product), needs to reach certain quality standards, and cannot be produced in various ways. Compared to the healthcare employee, the industrial worker may need to change their professional role or career or move their crafting strategies somewhere else (i.e. crafting in other domains) if their personal goal is to develop further, as discussed in previous research (Berg et al., 2010; Lazazzara et al., 2020; Wrzesniewski & Dutton, 2001). The blue-collar workers who participated in this thesis were all aged 55 years or older, and the survey and interview questions focused mainly on ageing in work and decisions regarding retirement. Thus, their mind-set was not firstly on strategies to adapt and optimize work for themselves. Nevertheless, job crafting occurred among these respondents, but there was a difference in how they talked about their development opportunities, both current and past, compared to the healthcare employees. As mentioned above, crafting strategies among the blue-collar workers was sometimes expressed in terms of enabling them to keep working until retirement age, thus making work more manageable. Their perceived opportunities for crafting, as well as their motives, differed from what the healthcare employees expressed, as well as from previous findings of job crafting among older employees (Kooij et al., 2015;

Lichtenthaler & Fischbach, 2016). In general, the healthcare employees seemed to have more opportunities at different levels, such as managers who promoted job crafting, colleagues who supported new ideas and exchanged knowledge, and organizational structures that enabled the healthcare employees to perceive more autonomy in work than within the manufacturing industry.

6.3 Job crafting and extended working life in relation to health equity

Having a job often contributes to better health; people with an employment rate their health higher than unemployed people do. To work has a positive impact on self-esteem and social recognition, and provides structures and social interactions, as well as a purpose, and money to provide for basic needs (Harnois & Gabriel, 2000; Jahoda, 1982). Work is however complex to put in a health equity context: even though having employment can be rewarding, work can also be stressful and physically demanding, thus having a more negative impact on a person's health. Different work settings and conditions thus affect employees' health differently (Ahonen et al., 2018). Due to the current work settings and top-heavy management strategies within the manufacturing industry and the healthcare sector (e.g. Lean and NPM), there can be less room for employee-driven redesign, such as job crafting.

Blue-collar workers, assistant nurses, and dental nurses represent a group in the labour market that may need to keep working longer to provide for their basic needs due to lower income. In addition, people with lower education have been found to rate their health lower than higher educated people, and their health declines faster. These conditions, combined with the fact that the jobs of people with lower education also tend to be automated and digitalized, can more or less push older people in these kinds of work out of the labour market (Nilsson, 2016). Blue-collar workers and certain healthcare employees may face different challenges in their work environment, such as poor physical conditions, stress, and limited development opportunities. This group may struggle to reach a full health potential more than people working in other domains do. This group can thus be in particular need of being included in WHP programs (Ahonen et al., 2018).

It could be beneficial that the company and departments within this thesis already had a pronounced focus on employee health. However, it must be considered that there can be another side to this kind of good intentions. According to Holmqvist and Maravelias (2018), WHP can be two-sided. On the one hand, employers can care about their employees and endeavour to prevent accidents and illnesses and support their employees in making healthier life choices. On the other hand, Holmqvist and Maravelias (2018) introduce WHP as 'neo-paternalistic' when WHP can include explicit or implicit expectations on employees to participate in activities outside of work to stay healthy and thus attractive to their employer, for example, regarding eating habits and physical exercise. In this regard, it is of great importance to involve the employees in organizational health promotion (Eriksson, 2011). Among the blue-collar respondents, there were many

ideas about how to make work more manageable for older employees. For example, they suggested more autonomy in work, as well as more individualized work. The respondents thus requested work settings that have been found to facilitate job crafting strategies. Job crafting has previously shown positive effects in terms of increased well-being for older employees in particular, as well as a positive impact on their motivation to extend their working life (Kooij et al., 2015, 2022; Lichtenthaler & Fischbach, 2016). Promoting and organizing for job crafting can therefore be one, albeit not the main strategy to promote health and well-being at work. Working conditions must be improved in different ways, for example, by reducing physical and cognitive workload.

The Swedish Work Environment Act (WEA 1977:1160) covers the physical aspects of work as well as the organizational and social work environment. This legislation, in combination with a comprehensive system of health policies and legislations (e.g. the Swedish state is responsible for providing public healthcare; employees are covered by state-financed insurance), is in comparison to many other countries (e.g. in Europe and North America) largely favouring and protecting the employee. As mentioned before, there is also a long tradition of cooperation between employers and employees through union representatives. Nevertheless, as discussed by Dellve et al. (2022, p. 212): *“Despite acts and regulations, there are distinct gender and social class differences related to ill-health and capability to work among older workers in Sweden”*. According to Dellve et al. (2022), as many as 70% of older employees with low education in Sweden, hold the assumption that they need to stay in work to provide for their future needs. The older blue-collar workers who participated in this thesis shared this perception; their private financial situation was often said to be the main reason for continuing to work. These matters were not discussed with the respondents within public healthcare, but it must be considered that some professional groups within the healthcare sector, such as assistant nurses and dental nurses, may hold the same perception about their financial situation. Among the Swedish blue-collar workers, there were respondents with an immigrant background, who expressed a lack of personal savings, sometimes because they were unable to work for several years due to their immigration process, sometimes because they had a restrictive family situation (e.g. still providing for their children, or having an unemployed spouse). These conditions, in combination with a demanding work situation, worsen the situation for an already disadvantaged group. It is reasonable to assume that there were respondents with immigrant backgrounds in the other countries as well. Due to the time that elapsed between data collection and the current analyses in Paper II, it was however not possible to find out if that was the case. Addressing health and well-being among disadvantaged groups can be argued as an important key to organizational sustainability (Dellve et al., 2022) and a matter of inclusion and work health equity (Ahonen et al., 2018). Engaging in health-promoting job crafting may enable people to work without consuming their resources in work, such as motivation and energy, thus contributing to a more sustainable working life over time. Thus, job crafting could be one strategy to increase well-being at

work. It is however important to have a holistic view of the individual employee's current situation and working context.

6.4 Practical implications: Organizing for health-promoting job crafting

An increasing number of studies focusing on job crafting antecedents and job crafting interventions indicates a growing interest in understanding how organizations can promote and facilitate job crafting among their employees. By organizing for job crafting, this kind of behaviour can be promoted and facilitated without being imposed or controlled; top-down initiated job crafting is not job crafting but something else. When organizing for job crafting, employees can be provided with a mandate and room for making appropriate adjustments and changes in daily work.

According to Roczniewska et al. (2023), previous reviews of job crafting interventions focus on the question of *whether* an intervention led to increased job crafting behaviour, but not to answer *why*, *when*, and for *whom* they worked. For example, Devotto and Wechsler (2019) reviewed eight job crafting interventions conducted in various sectors, including the healthcare sector, and with different job crafting measures that included both the role-based and the resource-based job crafting perspectives. All of these interventions included one to three job crafting training sessions as well as self-chosen job crafting plans with individual job crafting goals and were differently successful in increasing job crafting behaviours, employee well-being, and job performance. Differences in the results were discussed in terms of the focus of job crafting goals, for example, reducing hindering demands versus increasing challenging demands (Devotto & Wechsler, 2019). A systematic review to answer the *why*, *when*, and *whom* questions is yet to come (Roczniewska et al., 2023). Until then, and since there seems to be a lack of job crafting intervention studies focusing on either industrial blue-collar workers or older employees, the following suggestions to facilitate job crafting among employees within the manufacturing industry and public healthcare are presented from previous research and the findings in this thesis:

Recurrent among the respondents in this thesis, and in line with previous research, more autonomy in work whenever possible seemed to increase the perceived opportunities to engage in job crafting. The autonomy among the respondents was, as mentioned above, however, achieved differently. The blue-collar workers talked about having autonomy in work or not, depending on whether they worked on the assembly line or with other tasks. Those working outside the assembly line (e.g. in logistics, painting, and final assembling) perceived much more freedom in work due to their formal autonomy. Accordingly, they described more job crafting strategies than their colleagues who worked on the assembly line. To increase the perceived autonomy in work within the manufacturing industry, it is suggested to enable individualized work settings whenever possible. Not least to address the fact that, as mentioned above, people age differently and are affected differently by age-related aspects such as physical and cognitive decline (Nilsson, 2016). Some blue-collar

respondents for example wanted to avoid shift work, as well as work on the assembly line after a certain age; whereas others said shift work positively increased the variety in work.

Within public healthcare, freedom in work was achieved either from formal autonomy within the professional role, from working in cross-professional teams, or from work experience. When work was organized with formal autonomy, an 'organizational mandate' to craft followed. Working in cross-professional teams was also said to reduce traditional hierarchies in work, and to increase knowledge exchange and learning between and together with team members. It is here suggested to organize work in cross-professional teams whenever possible, not only to facilitate job crafting on individual and team levels (Tims, Bakker, Derks, et al., 2013) but also to provide employees with a more comprehensive picture of the work conducted (Nilsson et al., 2012). Understanding the connections between different parts of a patient's care chain can increase the perceived meaning of work (Berg et al., 2008; Wrzesniewski & Dutton, 2001), as well as manageability and comprehensibility (Antonovsky, 1987, 1996; Hanson, 2004; Vaandrager & Koelen, 2013).

To enable implementations close to practice when organizing for health-promoting job crafting, it is also suggested to educate first and second-line managers in job crafting and people-oriented and health-promoting leadership approaches (Coetzer et al., 2017; Randel et al., 2018), as well as to engage key stakeholders in the process (von Thiele Schwarz et al., 2021). However, formal training for managers could have limited learning outcomes if participating in programs does not have any effect on organizational levels (Dellve & Eriksson, 2017; Eriksson & Dellve, 2020; Norman, 2009). Managers should thus be given proper management support to handle their tasks and challenges, and it is suggested to align interventions with already existing activities and organizational objectives (von Thiele Schwarz et al., 2021). Lastly, to motivate employees to engage in job crafting, without imposing it on them, it is suggested to regularly discuss the current work situation, personal goals, and what opportunities the employees perceive to make adjustments and influence work (Kooij et al., 2022; Tims & Bakker, 2010).

6.5 Methodological considerations – strengths and limitations of the study designs

In Paper I, the quantitative findings were in line with previous research, indicating the generalisability of the findings, and the qualitative data enriched and deepened the understanding of the quantitative data. As mentioned above, there were multiple interviewers, and these interviewers were differently familiar with the job crafting concept as well as the other areas included in the survey and interview questions. Because of this, different interpretations of the content of the questions may have occurred during the data collection. To counteract this, the questions were thoroughly discussed within the project teams in the different countries to ensure that they were interpreted similarly. During the interview phase, the author of this thesis also had recurrent contact with both interviewers

and company representatives within the manufacturing company, to clarify potential uncertainties. In addition, the findings in Paper I were discussed within the Swedish research group and with a company representative before publishing. As mentioned above, the translation of the survey questions and research data back and forth from Swedish, Dutch, and French, to English may have reduced content details and nuances in the qualitative data in Papers I and II (McKenna, 2022). As suggested by McKenna (2022), this could have been counteracted by recruiting bilingual translators, with knowledge of the cultures of the different countries. Within the manufacturing company, the healthy worker effect was considered (Li & Sung, 1999); when recruiting blue-collar workers aged 55 years and older, these people may represent a healthier sample than in society on average. These respondents were however those considered to provide as relevant information as possible to the study. One group of respondents sought to counteract the healthy worker effect were people who had left the company or being redeployed before the age of 55. No respondent within this group was however found.

Given the relatively small sample size in Paper III, it is not possible to rule out type II errors. Consequently, there might have been associations that were not revealed as statistically significant in our analyses. As described in the Methods section, age was excluded from the data collection to ascribe confidentiality. The study did thus not statistically control for age. Previous research has identified differences in crafting activity due to age (e.g. more incentives and fewer restrictions regarding job crafting) (c.f. Kooij et al., 2015). These relations were thus not considered in these analyses. In addition, the choice of job crafting scale could have limited the findings, since the scale chosen (Slemp & Vella-Brodrick, 2013) included the role-based crafting strategies defined by Wrzesniewski and Dutton (2001), but not the resource-based job crafting strategies developed by Tims and Bakker (2010). Nevertheless, the use of validated scales in all measures and the thorough design of the SEM analyses (e.g. longitudinal and prospective data, using a panel design) to test its robustness, contribute to the validity and reliability of the findings.

In the study conducted to collect data for Papers IV and V, all researchers in the project group were involved in the construction of the interview protocol, as well as in the analysis processes. The author of this thesis conducted the preliminary analyses. All authors were thereafter involved in the final analysis as well as in the conceptualization of the themes. The study design presented above, as well as involving multiple researchers in the processes, from planning the study to collecting and analysing data is considered to increase the quality and trustworthiness of the studies, in terms of criteria such as credibility, dependability, confirmability, and transferability (Graneheim et al., 2017; Stenfors et al., 2020). Different analysis methods were discussed before choosing the reflexive thematic analysis framework by Braun and Clarke (2006, 2021) in both papers. This method was considered to best suit the collected data, and the strengths of the method include the abductive approach that allows for an inductive analysis ‘grounded in’ the data through theoretical lenses and preconceptions.

Participation was voluntary in all studies included in this thesis and the respondents were all informed about their possibility to stop the interviews without any consequences. Nevertheless, because managers were involved in the recruitment of respondents, there could have been respondents who were afraid to say no when asked to participate or to be completely honest when answering questions about their workplaces. Whether participating or not may have been perceived to affect respondents positively or negatively in the end. In the studies included in this thesis, all material handled by the employers was decoded to the greatest extent possible, when reported back and forth to the research groups. It was also informed that participation would not affect an employee's status or benefits, as discussed by Resnik (2016).

The papers included in this thesis were all conducted within larger research projects with broader aims. The data therefore provided both breadth and depth to the analyses. However, at times, it was considered that more specified research aims could have slimmed and focused the data collection, and thus made the analyses a bit less extensive and more focused on the research target. In addition, the sample sizes in the quantitative studies were relatively small, which may have hampered the generalisability of the findings in Papers I and III. This calls for further research with larger samples. Taken together, the multiple sources in the data collection, as well as the multiple researchers involved in the processes within this thesis can however be argued to increase the trustworthiness and rigour of the analyses and findings.

7 CONCLUSIONS AND FUTURE RESEARCH

This thesis has focused on job crafting in relation to an extended working life and employee well-being within the manufacturing industry and public healthcare. The findings were discussed from a system perspective. This means that individual employees, with their conditions and resources, have been studied within the framework of their workplace contexts, and that the interaction between different system levels has been taken into account in analyses and discussions of results. Health-promoting job crafting is here seen as individuals' strategies to increase their perceived well-being at work, thus strategies that can increase aspects of work that motivate and enable people to work with a maintained or increased sense of work-related well-being. According to the findings in this thesis, older blue-collar workers and healthcare employees who engage in health-promoting job crafting strategies seem to gain increased motivation and engagement in work, make work more manageable, and increase meaningfulness and job satisfaction. From the findings presented and discussed throughout this thesis, the following conclusions were drawn:

- Factors that influence blue-collar workers' decisions regarding retirement and an extended working life were found at different system levels (individual, micro, meso, and macro), and affected respondents in different ways.
- Antecedents of health-promoting job crafting were found at different levels within both the manufacturing industry and public healthcare. In particular, social capital as one job crafting antecedent at the micro-level was supported by both quantitative and qualitative data within public healthcare.
- An inner drive for development seems to contribute to engaging in health-promoting job crafting strategies despite poor contextual working conditions. However, job crafting strategies can be facilitated by organizational structures and culture, such as autonomy in work, a formal mandate to craft, supporting management, and social capital.
- Health-promoting job crafting strategies were perceived to lead to work-related well-being, as well as increased manageability and meaningfulness in work among the respondents in this thesis.

From these conclusions, it is suggested to further explore the interaction between different system levels, to further increase the knowledge about how to best support and promote health-promoting job crafting within different work contexts. It is also suggested to implement job crafting interventions in the manufacturing industry and public healthcare, including older blue-collar workers and healthcare employees, who can experience limited opportunities to engage in health-promoting job crafting. To my knowledge, there are yet

no intervention studies focusing on job crafting among older blue-collar employees in the manufacturing industry, which in particular calls for such studies.

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