Putting self-determination theory into practice: Autonomy-supportive training for supervisors in low-skilled jobs

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Amy Yong Pei Chuin

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ABSTRACT

According to self-determination theory (SDT), supervisors' autonomy support (SAS) is one of the main factors that contributes to employees' well-being and other positive outcomes. Wider studies on the outcomes of autonomy support have been conducted in sectors such as education, healthcare, sports and financial institutions and with occupational groups such as teachers, upper managers and coaches. While all of these studies demonstrate the importance of autonomy support in facilitating positive outcomes, the importance of SAS in enhancing the well-being of employees in low-skilled occupations is often neglected, despite the continued contribution of this sector to the economy and total workforce in New Zealand. Furthermore, limited studies within the workplace have also shown that (upper) management can be trained to be more autonomy-supportive. To date, however, this training has not been designed for supervisors in low-skilled occupations, who have different learning needs than those in higher-skilled occupations. Similarly, the effect of autonomy-supportive training on employees has been established in higher-skilled occupations, but not with employees in low-skilled occupations. Finally, according to Grossman and Salas (2011), various organisational factors can weaken the effect of training, which, in turn, undermines the long-term benefit of SAS. Nevertheless, this aspect of maintaining SAS after the training has often also been neglected in autonomy-supportive training studies.

To address these issues, this thesis aims to: (1) develop the autonomy-supportive training (AST) and conduct a preliminary evaluation of the AST with supervisors in low-skilled occupations; (2) establish the perceived effect of SAS on employees in low-skilled occupations; (3) evaluate the outcomes of AST on

supervisors and employees; and, (4) explore the factors affecting the maintenance of SAS with supervisors. To achieve these aims, a mixed-method approach was employed to collect data from supervisors and employees; these data were then presented as three separate research articles. The articles were submitted to peer-reviewed journals; all three articles have been published.

Study 1 reports on the development and preliminary evaluation of the AST for supervisors in low-skilled occupations. Drawing on and integrating both SDT and adult learning principles, the resultant training module is one of the first training modules in SDT designed to suit the learning needs of supervisors in low-skilled occupations. The study reports on the development of the training material as well as the preliminary evaluation of the AST using reaction evaluation. In general, supervisors found the AST relevant, easy to understand, and applicable to their work setting.

Study 2 examined the effect of employees' perceived SAS on employees' well-being and job performance. This study included analyses of need satisfaction and need frustration as mediators. Using mediation analyses, the results showed employees' perceived SAS predicted well-being and job performance through need satisfaction but not through need frustration. The findings were the first to demonstrate the importance of employees' perceived SAS on their well-being and job performance through need satisfaction in low-skilled occupations.

Study 3 used a two-stage mixed-method approach. First, the quantitative phase employed a quasi-experimental approach with AST as the manipulated variable and a longitudinal survey completed by both employees and supervisors. The second phase, the qualitative phase, employed both focus groups and interview with supervisors as its data gathering methods. The quantitative phase

demonstrated an initial change in supervisory style after the training, although this effect was not perceived by employees in the longitudinal analysis. The qualitative phase unravelled factors affecting the maintenance of SAS. This study found that, although AST can increase SAS, the effects were diluted when upper-management autonomy support, and essential resources to complete tasks, are lacking.

Overall, this thesis expands the organisational and SDT literature by including an understudied occupational group: low-skilled employees and their supervisors. The findings of this thesis emphasise not only the benefits of AST and SAS for employees and supervisors, but also highlight the importance of senior managerial autonomy support and organisational support in leading low-skilled occupations.

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The LORD is my strength and my shield; my heart trusts in him, and he helps me. My heart leaps for joy, and with my song I praise him.

Psalm 28:7 (The Bible)

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TABLE OF CONTENTS

LIST OF TABLES AND FIGURES (for chapters 1, 2, and 6)

CHAPTER 1

INTRODUCTION AND OVERVIEW

Overall Contribution and Rationale of the Thesis

The International Labour Organization (ILO) recently called for organisations and policymakers to focus their policies and practices around people and the work they do to achieve equity, growth, and sustainability (International Labour Organization, 2019). This approach includes implementing various measures ranging from the protection of employment rights to ensuring the physical and psychological well-being of employees. However, Eurofound and the International Labour Organization (2019) demonstrated that, globally, employees in low-skilled occupations continuously reported experiencing poorer well-being than did those in higher-skilled occupations. This finding indicates that employees in low-skilled occupations are in particular need of interventions to improve and protect their well-being.

Although analysis has suggested that those in lower-skilled occupations compared to those in higher-skilled occupations are at higher risk of having their tasks automated (Arntz, Gregory, & Zierahn, 2016), employees in low-skilled occupations still make up a significant percentage of the total workforce in many countries. For example, in the European Union countries, 17% of the total workforce is employed in the manufacturing industries where jobs are often considered low-skilled (Eurofound, 2017), while, in New Zealand, employees in low-skilled occupations accounted for 36.7% of the total workforce as of June 2018 (Ministry of Business Innovation & Employment, 2018). Additionally, some industries which traditionally consist of a larger percentage of low-skilled occupations such as retail and accommodation and manufacturing have 88.2% (in

retail and accommodation) and over 90% (in manufacturing) of their employees respectively on permanent full-time contracts (Statistics New Zealand, 2017). Despite the fact that employees in low-skilled occupations represent a substantial percentage of the total workforce and that they hold permanent jobs, their well-being is often neglected due to lack of organisational interest and the cost required to implement measures for their well-being (Busch, Staar, Åborg, Roscher, & Ducki, 2010).

One of the reasons why employees in low-skilled occupations may experience poorer well-being is related to their work conditions. Their work conditions are characterised as low in control and high in demand, conditions which are known to result in negative outcomes (Karasek & Theorell, 1990). With lower control over their work, they are prone to mental ill-health and this results in issues such as higher suicide rates compared to the rates for those in higher-skilled occupations (Butterworth et al., 2011; Marmot, 2005; Roberts, Jaremin, & Lloyd, 2013). The suicide and attempted suicide cases in the Foxconn factory in China, a major iPhone manufacturer, have highlighted the plight of employees who are often subjected to regimental work conditions and abusive supervision (Barboza, 2010; Chigne, 2018).

Those in lower-skilled occupations also tend to experience higher job strain (MacDonald, Karasek, Punnett, & Scharf, 2001), increased risk of health issues such as lower back pain (Xu, Bach, & Ørhede, 1996), and poorer psychological health, lower sense of purpose and achievements, lesser social contact, and less desirable time structure and work activity (Batinic, Selenko, Stiglbauer, & Paul, 2010) compared to those employed in higher-skilled occupations. These studies suggest a significant physical and psychological health

gap between those employed in lower- and higher-skilled occupations. While adjustments and changes to physical parameters of the job can help to address the physical health gap (Gerr et al., 2014), studies on how psychologically-focused interventions can help to improve the psychological well-being of employees in low-skilled occupations are scant.

To respond to such a need, this thesis turns to self-determination theory (SDT) which posits that one of the key factors in well-being is supervisors' autonomy support (SAS). This issue is discussed in the next section under the heading "Overview of SDT". In the workplace, SAS consists of a cluster of behaviours demonstrated by supervisors; it is these behaviours which convey the message of support for employees' basic psychological needs of autonomy, competence, and relatedness (Deci, Olafsen, & Ryan, 2017). Employees' basic psychological needs, in turn, contribute to positive outcomes such as well-being, better job performance, and work engagement (Baard, Deci, & Ryan, 2004; Deci & Ryan, 2000). Therefore, autonomy support, also known as SAS in this thesis, is a contributing factor to employees' well-being (refer to Figure 1, page 13 for a summary of the relationships discussed above).

Studies have shown managers can learn to be autonomy-supportive when provided with autonomy-supportive training (AST) (Deci, Connell, & Ryan, 1989; Hardré & Reeve, 2009). Autonomy-supportive training was also found to increase autonomy-supportive behaviours among: (1) teachers (Reeve & Cheon, 2014), (2) health practitioners (Lonsdale et al., 2017), and (3) coaches (Langan, Blake, Toner, & Lonsdale, 2015) who attended the training. The increase of autonomy-supportive behaviours also led to: (1) an increase in need satisfaction, engagement, and higher academic achievements among students, (2) a decrease in

the level of amotivation among patients, and (3) prevention of burnout among players.

Although, as outlined above, autonomy-supportive training is beneficial, it has not been designed specifically for supervisors in low-skilled occupations who have different training needs than those of the professionals mentioned above (Illeris, 2006). There is also a general lack of training opportunity for those in lower-skilled occupations (Hughes, Connell, & Williams, 2004; Ramos, Rey-Maquieira, & Tugores, 2004) which, in turn, negatively impacts their role as supervisors (Silvennoinen & Nori, 2017). Therefore, there is a need for AST to be tailored to suit the learning needs of supervisors in low-skilled occupations in order for them to be effective in their role. Making the AST accessible as a supervisory skills development programme will help to advance SAS in low-skilled occupations. Therefore, the first research question in this thesis is: How can AST be adapted for supervisors of low-skilled occupations?

Another issue requires investigation, specifically with regard to those employed in low-skilled occupations. While previous evidence suggests that SAS provides an environment where employees' well-being can be enhanced (Baard et al., 2004; Gillet, Colombat, Michinov, Pronost, & Fouquereau, 2013; Oostlander, Güntert, & Wehner, 2014), the effect of SAS has not been studied with employees in low-skilled occupations; this gap led to the second research question: What is the perceived effect of SAS on employees in low-skilled occupations?

Additionally, Winkler, Busch, Clasen, and Vowinkel (2015) suggest that the lack of training which focuses on improving supervisors' behaviours leaves a critical gap in understanding and supporting employees' well-being, as the supervisors' role is central in this. Consequently, an answer is needed to the

question: What is the effect of the AST on supervisors and employees in low-skilled occupations?

Finally, the maintenance of autonomy-supportive behaviours is imperative for employees in terms of experiencing the long-term benefit of SAS after the AST. For instance, Baldwin, Ford, and Blume (2017) reiterated the need to understand the trainees' context to enable the long-term application of the skills learned in the training session. However, the focus of autonomy-supportive training studies is often on how to conduct effective autonomy-supportive training, albeit not within low-skilled occupations (Su & Reeve, 2011), rather than on maintaining autonomy-supportive behaviours after the training. While Reeve (2009) discussed the various sources of pressure that could affect autonomy-supportive behaviours in the education sector, this issue has not been systematically explored in the workplace nor specifically within the low-skilled occupations. Therefore, to sustain the benefit of such training, it is crucial to ask the question: What can affect the maintenance of SAS among supervisors in low-skilled occupations?

The remainder of this chapter first outlines the research objectives of this thesis. Secondly, it defines those employed in low-skilled occupations and discusses the well-being of these employees. In so doing, this thesis acknowledges that the application of autonomy-supportive behaviours for employees in low-skilled occupations who work in a highly routine and low control environment may be very different from those used, by comparison, with those in the higher-skilled occupations, for example, managers, teachers, coaches, and health practitioners, i.e., occupations in which autonomy-supportive behaviours have commonly been investigated. Next, SDT, which is the theoretical underpinning of

this thesis, is reviewed. Lastly, this chapter concludes with a summary of the organisation of the thesis and overview of its remaining chapters.

Research Objectives and Questions

The rationale for conducting the study along with the research questions outlined above can be summarised as follows:

1. How can AST be adapted for supervisors of low-skilled occupations?
2. What is the perceived effect of SAS on employees in low-skilled occupations?
3. What is the effect of the AST on supervisors and employees?
4. What can affect the maintenance of SAS among supervisors in low-skilled occupations?

These research questions give rise to the objectives of this research; these are to: (1) develop the AST and conduct a preliminary evaluation of the AST with supervisors in low-skilled occupations, (2) establish the perceived effect of SAS on employees in low-skilled occupations, (3) evaluate the outcomes of AST on supervisors and employees, and (4) explore the factors affecting the maintenance of SAS with supervisors.

Defining Employees in Low-skilled Occupations

Occupations have traditionally been categorised based on skill. In New Zealand, occupations are assigned to five different skill levels by the Australian and New Zealand Standard Classification of Occupations (ANZSCO). Skill levels are measured by the amount of formal education required to perform the task, previous related experience, and on-the-job training necessary to complete the tasks in the occupation (Australian Bureau of Statistics, 2013).

In general, a greater range and higher complexity of tasks will require a higher level of skill. The occupations requiring higher education and/or at least 5 years of relevant work experience are typical of occupations in Skill Level 1, while occupations that require lesser or no formal educational training and work experiences, and shorter or no on-the-job training are typical of occupations in Skill Level 5 (Statistics New Zealand, 2012). The following table shows the skills level assigned to predominant occupations and industries in New Zealand.

Table 1

List of Skill Levels to Predominant Occupations and Industries

Skill level	Occupation and industry
1 – Highly skilled	Managerial and professional roles mainly in these industries: education and training (teachers); professional and technical services; health and social assistance; and agriculture (farmers and farm managers).
2	Managerial roles in the accommodation and retail industries, and support workers in the health and social assistance industry.
3 – Skilled	Technicians and trade workers in the construction, manufacturing, and other services industry.
4	Carers and receptionists in the health industry; road and rail drivers in the transport industry; and clerks, operators, drivers, store people, process workers in the manufacturing industry.

5 – Lower skilled	Sales workers in the retail industry; factory process workers in the manufacturing industry; accommodation, farm, forestry, and garden workers in agriculture; and cleaners and laundry workers in administration.

From "Skill levels of New Zealand jobs" by Statistics New Zealand (2013). Reprinted with permission.

The ANZSCO defined low-skilled occupations as occupations found in the category of Skill Level 4 and 5 (Australian Bureau of Statistics, 2013). The occupations in Skill Level 4 require skills that are comparable with having up to Level 3 of the New Zealand Qualification Framework, which is equivalent to completing the UK General Certificate of Education Advanced level/Scottish Advanced Higher Standard or Senior Secondary Certificate of Education in Australia (New Zealand Qualifications Authority, n.d.). Sometimes, formal education can be substituted with at least a year of relevant experience. On the other hand, Skill Level 5 occupations require having skills comparable with completion of compulsory secondary education qualifications or a short period of on-the-job training. In some instance, no formal qualification or on-the-job training is needed.

As this study is conducted in New Zealand, low-skilled occupations are defined as the occupations found in the category of Skill Levels 4 and 5 as per the New Zealand definition. These jobs include occupations such as factory assembly line operators, front-line service (hospitality and retail) staff, construction labourers, and others which require similar skills. Employees in these occupations are the focus of this thesis. Defining low-skilled occupations provides the context

in which the study of their training needs, well-being, and the maintenance of autonomy-supportive behaviours are to be considered.

The well-being of employees in low-skilled occupations

Low-skilled occupations typically involve highly repetitive tasks and can be physically and psychologically demanding. The manufacturing industry is frequently described as labour-intensive, with a prevalence of musculoskeletal disease, and as an industry sector in which employees have limited control over their schedule (Dugan et al., 2016; Gerr et al., 2014). On the other hand, in the hospitality industry, employees tend to experience both a high level of interpersonal tension with coworkers and guests and work overload resulting from system or facility failure (O'Neill & Davis, 2011).

From the work environment perspective, those such as assemblers and machine operators who perform physically and psychologically demanding roles are found to have low decision latitude and low social support, (Karasek & Theorell, 1990), while the front-line hospitality occupations are also found to be low in autonomy and high in terms of their demands (Walters & Raybould, 2007). The prolonged physical demand of the job can contribute to psychological stress for those employed in low-skilled occupations (Karasek & Theorell, 1990). Occupations that are highly demanding both physically and psychologically tend to evidence adverse outcomes such as health and mental health complaints, fatigue, and low job satisfaction (de Jonge, Bosma, Peter, & Siegrist, 2000; Pelfrene et al., 2002). In summary, research suggests the work environment is detrimental to the well-being of employees in low-skilled occupations which are high in terms of their physical and psychological demands.

To counter such demands, scholars suggest employees' well-being can be improved by increasing their autonomy (Hackman & Oldham, 1976). This form of autonomy is usually concerned with job and schedule autonomy, that is, having the freedom or independence to exercise discretion over one's work schedule and the manner in which work can be accomplished (Hackman & Oldham, 1976). However, these "categories" of autonomy are lower among employees in low-skilled occupations than they are for those in higher-skilled occupations (Morgeson & Humphrey, 2006; Wheatley, 2017) because of the strong Taylorism influence, as outlined below.

According to Taylor (1911), jobs should be designed around simple and specialised work processes so as to maximise efficiency. Therefore, work processes are frequently planned down to the last detail, leaving little room for variation. Current manufacturing systems such as the lean system are not very different from those in the Taylorism era in terms of limited autonomy (Hasle, Bojesen, Langaa Jensen, & Bramming, 2012). Hasle et al. (2012) added that the lean system is found to lower job autonomy and increase work intensity, hence contributing to poorer psychological health.

Studies with employees in low-skilled occupations who lack job and schedule autonomy have, however, established the benefit of supervisors' support, in terms of social support on the well-being of these employees (Ariza-Montes, Arjona-Fuentes, Han, & Law, 2018; Winkler et al., 2015). Other studies have also shown that employees who work in high demand jobs benefit from supervisors' social support, as the support tends to buffer the effect of job strain (e. g., dissatisfaction and ill-being) in employees (Bakker & Demerouti, 2007; García-

Herrero, Mariscal, Gutiérrez, & Ritzel, 2013; Sargent & Terry, 2000). Clearly, supervisors' social support is an important contributor to employees' well-being.

As employees in low-skilled occupations struggle with low job and schedule autonomy, a key issue is how development in supervisors' support facilitates well-being and how that development offers another path to support their well-being. That is, while supervisors' social support remains broad, it encompasses a wide array of behaviours ranging from communicating constructive feedback and providing help to deal with problems at work to attitudes such as respecting and appreciating the employees (Ariza-Montes et al., 2018; Bakker & Demerouti, 2007; Winkler et al., 2015). Such a wide array of behaviours and attitudes, however, presents a challenge in identifying specific behaviours which contribute to employees' well-being. Without the knowledge of which specific behaviours support employees' well-being, it is challenging to apply the broad range of behaviours and attitudes to workplaces.

On the other hand, SAS, as proposed by SDT, provides a specific type of support consisting of behaviours which have been identified as facilitating employees' well-being. SAS is, therefore, distinct from supervisors' social support, as it invokes a specific psychological process which leads to employees' well-being. This process is outlined further below.

Overview of SDT

SDT is one of the few theories of well-being which emphasises the importance of the social contexts that lead to the facilitation or hindering of an individual's basic psychological needs and, ultimately, to the individual's well-being (Ryan & Deci, 2017). Acknowledgement of the role of social contexts in supporting or undermining an individual's well-being and growth is not new, as it

was proposed by an early psychologist, Dewey (1922). Both Dewey and SDT theorists hold that people are oriented towards psychological growth and well-being. Such an assumption is foundational in investigating the well-being of employees in low-skilled occupations, as it indicates that people, regardless of their status or occupations, often seek out opportunities to facilitate their well-being.

While there are similarities between SDT and Dewey's view, the main differences are that SDT specifies the social context, i.e., autonomy support, as the context that facilitates the satisfaction of the individual's basic psychological needs (Deci et al., 2001). Moreover, SDT clearly states that the path to psychological growth and well-being is through the satisfaction of our basic psychological needs (This issue is discussed in the section on basic psychological needs). Thus, SDT not only defines the social context, but also determines the specific path to well-being which provides the framework for the study of employees' psychological well-being.

SDT was chosen as a lens through which to study the psychological well-being of employees in low-skilled occupations in this thesis for three main reasons. First, the theory focuses on the social context and its effect on employees' well-being. Such a focus is crucial, because Hitt, Beamish, Jackson, and Mathieu (2007) argued that, in order to gain a better understanding of employees' behaviour and psychological processes, organisational research needs to consider the social contexts within organisations. Secondly, SDT focuses on interventions, specifically autonomy-supportive training, aimed at increasing autonomy-supportive behaviours which lead to employees' psychological well-being. This SDT focus responds specifically to the call by Winkler et al. (2015) to

train supervisors on positive leadership behaviours so as to improve the psychological well-being of employees in low-skilled occupations. Autonomy-supportive behaviours are not just positive leadership behaviours; rather, they provide a context to enable the fulfilment of employees' basic psychological needs and, thus, lead to their well-being (Baard et al., 2004). Finally, as SDT is applicable across various cultures (Chen et al., 2015), it offers a fitting approach through which to study the psychological well-being of employees in low-skilled occupations in New Zealand.

Consequently, this thesis draws on SDT for the following reasons: first, because the social context, which can consist of autonomy-supportive or controlling behaviours, is key to the satisfaction or frustration of autonomy, competence, and relatedness needs (Deci et al., 2017) and, secondly, because studying the satisfaction and frustration of basic psychological needs is crucial, as the satisfaction of needs sets the path to well-being, while the frustration of needs sets the path to ill-being (Vansteenkiste & Ryan, 2013). Figure 1 below demonstrates the relationships described above.

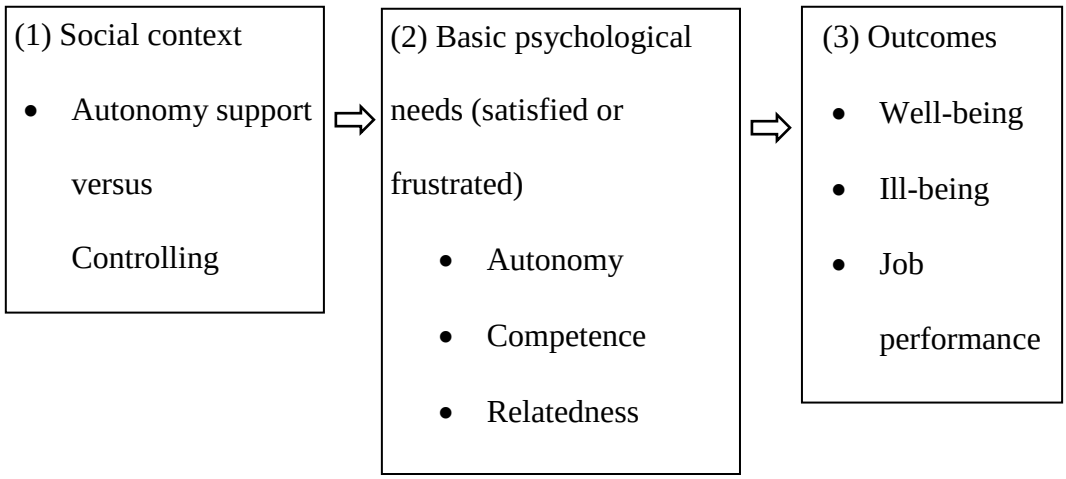

Figure 1. Summary of relationships leading to outcomes at work.

Following the order of the relationships presented, this section will first discuss the social context, with that discussion focusing mainly on the autonomy-supportive behaviours that facilitate need satisfaction and well-being.

Development of autonomy-supportive behaviours

Studies in SDT often focus on the benefits of a set of specific behaviours, known as autonomy-supportive behaviours, which have frequently been applied in different sectors such as education, healthcare, and sports through the training of autonomy-supportive behaviours. Autonomy-supportive behaviours are a cluster of specific behaviours demonstrated by supervisors (hence, the term supervisors' autonomy support i.e., SAS). SAS aims to enhance employees' sense of volition and ultimately to support the satisfaction of employees' autonomy, competence, and relatedness needs (Slemp, Kern, Patrick, & Ryan, 2018).

In contrast, controlling behaviours refer to supervisors' exerting behavioural and psychological pressure with the intent to cause a change to the way an employee behaves, feels or thinks. Behaviours that are seen to convey such a message involve using incentives and rewards as a form of control (do this or, if you don't do this then…), using pressing language (you must, you have to), using intimidation and criticism to suppress, monitoring intrusively, setting strict and rigid rules, giving instructions without providing rationales or opportunity for discussion, and being impatient while requiring prompt and unconditional compliance with instructions (Reeve, 2015; Slemp et al., 2018). The distinction between autonomy-supportive behaviours and controlling behaviours lies in how supervisors communicate guidelines, feedback, and instruction, and how they use reward to induce a change in employees' behaviours.

Initially, an early study by Koestner, Ryan, Bernieri, and Holt (1984) with children from a public school in the U.S. identified autonomy-supportive behaviours. Through their experimental study, elements of autonomy-supportive behaviours such as minimising directive or controlling phrases of "must" and "have to" and reflecting on the possible contrary feelings were established. Subsequently, Deci, Eghrari, Patrick, and Leone (1994) confirmed three elements of autonomy support through an experiment with students taking an introductory psychology course. The first three autonomy support elements were: (1) providing meaningful rationale when assigning a task, (2) communicating in informational rather than controlling language while making a request, and (3) acknowledging the person's perspective when asked to perform less preferred tasks.

"Offering choices" was added to autonomy-supportive behaviours by Williams, Cox, Kouides, and Deci (1999) after their study with high school students on how to discourage smoking behaviour. They found students exposed to the choice condition (i.e., indicating that smoking is a choice and providing information about how their sense of choice would be diminished with smoking) reported higher motivation to not engage in smoking behaviours than did students who were exposed to the no-choice condition (e.g., insisting that students should not start smoking and providing information on the grave consequences of smoking). However, later studies have found offering choice alone does not always support the well-being of the individual (Katz & Assor, 2007; Reeve, Nix, & Hamm, 2003). Rather, these studies found the provision of choice in the context of autonomy-supportive behaviours (e.g., providing meaningful rationale when assigning a task, using informational language, and acknowledging the person's perspective) was a path to well-being. In view of such findings, offering choices,

although positively related to perceived autonomy (Deci et al., 1994), is considered as a supplementary rather than a primary autonomy-supportive behaviour in this thesis.

Finally, on the basis of their experimental study with high school teachers in the U.S., Reeve, Jang, Carrell, Jeon, and Barch (2004) further argued that "nurturing inner motivation" was important in the context of autonomy-supportive behaviours. They found that students were more engaged when teachers nurtured their inner motivation. Nurturing a person's inner motivation refers to identifying and creating an environment which supports a person's needs, interest, and preferences to engage in the activity. Reeve and Cheon (2014) suggest one of the ways nurturing inner motivation can be practised by teachers is to plan a learning activity that is designed to enable students' personal and skill development and to encourage their personal growth. Nurturing inner motivation has been confirmed in subsequent autonomy-supportive studies as one of the autonomy-supportive behaviours (Hardré & Reeve, 2009; Su & Reeve, 2011).

To summarise, autonomy-supportive behaviours can be demonstrated by supervisors through: (1) providing meaningful rationales such as explaining the significance of the task when assigning it to employees, (2) acknowledging negative feelings such as validating the effort required to complete certain tasks which may seem undesirable, (3) using noncontrolling language, for instance, discussing a performance issue and inviting input rather than forcing a change of behaviour, and (4) nurturing employees' inner motivation by, for example, planning and providing for personal and professional development rather than using an incentive or punishment to encourage work engagement.

This set of autonomy-supportive behaviours has been contextualised and applied in various forms of autonomy-supportive training to increase the autonomy-supportive behaviours of those in teaching, coaching, management, and caring roles. Some of these contexts and applications are discussed below.

Autonomy-supportive training studies

The first longitudinal organisational autonomy-supportive training study was conducted by Deci et al. (1989). Field managers in a large office machine corporation were given training which focused on three autonomy-supportive behaviours (i.e., providing an opportunity for employees to take the initiative, using informational feedback, and accepting employees' needs and feelings). The results suggested that supervisors' autonomy-supportive behaviours were related to technicians' trust and satisfaction in the organisation. The second focus of the study concluded it is possible to make a significant change to supervisors' style by training supervisors in the use of autonomy-supportive behaviours.

Another successful intervention with managers in a large, multinational Fortune 500 company was conducted by Hardré and Reeve (2009); they found managers demonstrated greater use of autonomy-supportive behaviours with the company's employees after the autonomy-supportive training. Furthermore, employees reported being more engaged when working with managers who had received autonomy-supportive training; this finding suggests that the subsequent change in the employees resulted from the autonomy-supportive training given to their managers.

Autonomy-supportive training studies have gained momentum in other sectors such as education. When autonomy-supportive training was provided to teachers, they demonstrated more autonomy-supportive behaviours with their

students (Reeve, 1998; Reeve & Jang, 2006). The change in their teachers' behaviours, in turn, resulted in students' reporting higher need satisfaction, lower need frustration, higher classroom engagement, and greater academic achievement (Reeve & Cheon, 2014).

In healthcare, autonomy-supportive training was adapted for physiotherapists. After the training, the physiotherapists demonstrated greater communication that was supportive of patients' basic psychological needs (Murray et al., 2015). Furthermore, Lonsdale et al. (2017) also found this training resulted in greater adherence on the part of patients to their physiotherapists' recommendations.

In the sports sector, Cheon, Reeve, Lee, and Lee (2015) conducted autonomy-supportive training with coaches of Paralympic athletes. This training resulted in athletes' maintaining their motivation, engagement, and performance levels. Alternately, athletes whose coaches did not participate in autonomy-supportive training saw a decrease in athletes' motivation, engagement, and performance. An adapted autonomy-supportive training conducted with football coaches of youth Gaelic athletes also resulted in the prevention of burnout in the athletes (Langan et al., 2015).

In order to determine if autonomy-supportive training studies were successful and to ascertain the factors which contributed to the success of the training, Su and Reeve (2011) conducted a meta-analysis of 19 autonomy-supportive training programmes with teachers, parents, healthcare practitioners, and managers. They found that autonomy-supportive training was generally successful in increasing autonomy-supportive behaviours with an effect size of 0.63 (Cohen's rubric), suggesting a moderately large effect. They also offered

suggestions on how to conduct autonomy-supportive training effectively (This issue will be discussed in the "Development of the AST" section).

The studies above implied that autonomy-supportive training is effective in increasing the autonomy-supportive behaviours of those who attended the training. Additionally, the findings also demonstrated various consequent positive effects on employees, students, patients and athletes after their managers, teachers, health practitioners, and coaches attended the autonomy-supportive training. As studies on the benefits and training of autonomy-supportive behaviours grow, one aspect of this area that has clearly been neglected is studies involving those in low-skilled occupations. The following section will discuss this issue in greater detail.

SAS in low-skilled occupations

While the benefits of autonomy-supportive behaviours and training are widely recognised, autonomy-supportive behaviours are not commonly practised by supervisors (Reeve, 2015). Rigby and Ryan (2018) found that organisations tend to use more controlling behaviours than autonomy-supportive behaviours. Controlling behaviours tended to be preferred, as they are often associated with orderliness, while autonomy-supportive behaviours are often perceived by others as lacking direction or instruction (Reeve, 2009). In the context of low-skilled occupations, supervisors tend to determine every detail of their supervisees' work in order to maintain order and efficiency. Therefore, supervisors might misrepresent autonomy-supportive behaviours as permissive or as offering lesser work instruction and, hence, as not applicable in their work context.

However, Jang, Reeve, and Deci (2010) in their study found that teachers could maintain orderliness through setting rules and guidelines whilst

simultaneously communicating feedback on the tasks in an autonomy-supportive way. This approach resulted in an environment of order and support where students were also more engaged in classroom activities. Therefore, autonomy support is not directionless and permissive supervision, but, rather, maintains order through providing direction, guidelines, and feedback to employees in an autonomy-supportive way, thus, suggesting the applicability of autonomy support in highly routinised occupations.

Conceptually, autonomy support is applicable to supervisors in low-skilled occupations and recently Slemp et al. (2018) called for training to be provided to encourage more autonomy-supportive behaviours from supervisors in order to support employees' well-being. Nevertheless, autonomy-supportive training studies have been conducted mainly with those in higher-skilled occupations, for example, managers, teachers, and coaches, but not with supervisors in low-skilled occupations.

Relatedly, autonomy-supportive training studies for the higher-skilled occupations such as teachers are designed on the basis of a theoretical teaching of SDT, presentation of the empirical benefit of autonomy-supportive behaviours, and delivering specific strategies of autonomy-supportive behaviours (Reeve & Cheon, 2014). In contrast, those in low-skilled occupations appreciate sharing their experiences to facilitate learning and being able to relate the skills they learn to their actual workplace (Illeris, 2006), suggesting a vastly different training approach. Essentially, most autonomy-supportive training studies use a formal classroom instructional method, while supervisors in low-skilled occupations prefer experiential learning. Therefore, there is a need to design AST which is

more responsive to the learning needs of these supervisors. This issue is discussed in the section below.

Development of the AST

To develop the AST for supervisors in low-skilled occupations, this thesis draws on the guidance provided by other autonomy-supportive training studies (Hardré & Reeve, 2009; Reeve, 2009; Su & Reeve, 2011) and the principles of adult learning, also known as andragogical principles, developed by Knowles, Holton, and Swanson (2012).

Su and Reeve's (2011) meta-analysis study offered suggestions on how to conduct effective autonomy-supportive training. The recommendations are: (1) to include autonomy-supportive behaviours of acknowledging and accepting employees' points of view, providing meaningful reasoning, using informational language, and nurturing the inner motivational resources, (2) to offer training in one or a few sessions within a moderate timeframe (1 to 3 hours), (3) to offer follow-up activities (e.g., booklet, follow-up session), (4) to use a combination of instructional booklet and electronic media, and (5) to focus on enhancing skills rather than knowledge of autonomy support.

Hardré and Reeve (2009) and Reeve (2009), who have conducted autonomy-supportive training with managers and teachers, also recommended that future autonomy-supportive training should consider: (1) conducting the training in an autonomy-supportive language (Hardré & Reeve, 2009), (2) acknowledging and accepting the negative feeling of the supervisors (e.g., admitting the supervisory role can be difficult and supervisors may be held responsible for the mistakes employees make) (Hardré & Reeve, 2009), (3) helping the supervisors to be aware of the causes and consequences of controlling behaviours (Hardré &

Reeve, 2009; Reeve, 2009), (4) helping the supervisors to understand the benefit of autonomy-supportive behaviours (Reeve, 2009), and (5) providing them with the information on what exactly autonomy-supportive behaviours are (Reeve, 2009).

The guidelines above provide general information on how to conduct effective training. However, recent examples of autonomy-supportive training design tend to adopt a formal and theoretical classroom instructional session on SDT and the autonomy-supportive behaviours (Reeve & Cheon, 2014). This approach, however, may often not appeal to the learning needs of supervisors in low-skilled occupations (Illeris, 2006). As such, there is a need to look to another approach to support the development of the AST; here, the adult learning principles provide a useful guide.

Knowles et al. (2012) provided six guiding principles of how adults learn best. These principles are that adults: (1) learn best when they understand the reason for their learning, (2) need to be respected as self-directed learners, (3) have accumulated experiences which serve as a rich resource to tap into during learning, (4) learn best when they are ready to learn, (5) focus their learning, which helps them deal with their tasks and problem, and (6) respond to internally motivating factors (e.g., greater job satisfaction) better than to externally motivation factors (e.g., pay rise) to learning.

Jeffrey, Hide, and Legg (2010) found the adult learning principles matched the learning needs of small business managers in industries such as construction, road transport, and motor trading. Similar to supervisors in low-skilled occupations, these business managers left formal education at the age of 16 and are less in touch with formal training and education, which suggests that the adult

learning principles match the learning needs of supervisors in low-skilled occupations. By systematically integrating the practice of other autonomy-supportive training studies and principles of adult learning, the AST can be designed to suit the learning needs of supervisors in low-skilled occupations.

Clearly, the AST is key to the much needed, yet overlooked, supervisory skills development for those in low-skilled occupations (Lawrence, 2013). Further, Ingvaldsen and Benders (2016) found for organisations to continuously make improvements, supervisors' behaviour matters, because of its importance in ensuring that the working system can be effectively implemented. AST which focuses on positive supervisors' behaviours can strengthen supervisors' capacity to manage employees for continuous improvement, while also contributing to employees' well-being (Winkler et al., 2015). Therefore, it is crucial to first develop and evaluate the AST on a preliminary level to ensure it caters to the learning needs of supervisors in low-skilled occupations. Thus, one of the aims of this thesis is to develop the AST and conduct a preliminary evaluation of the AST with supervisors in low-skilled occupations (see chapter 3).

The primary purpose of the AST is to introduce and encourage the use of autonomy-supportive behaviours in supervisor-employee interaction. As shown in Figure 1, autonomy support should lead to the satisfaction of basic psychological needs and, ultimately, to well-being. The following section will focus on basic psychological needs as mediators between SAS and outcomes such as well-being.

Basic psychological needs

SDT maintains that psychological needs are universal. When satisfied, they will lead to well-being, but when frustrated, they will lead to ill-being (Ryan & Deci, 2000b). In SDT, three basic psychological needs are proposed:

competence (engaging in optimal challenges and mastery in both the physical and social world), autonomy (self-organising and regulating one's own behaviour and achieving inner coherence with external demands and goals), and relatedness (seeking of attachment and desiring the feelings of security, belongingness, and intimacy with others) (Deci & Ryan, 2000).

Questions may arise as to why SDT proposes these three particular psychological needs. In order to answer such questions, it is essential to first consider what criteria should be fulfilled for an element to qualify as a basic psychological need. As the word "need" itself suggests, psychological needs are essential for human growth and are different from desires or wants (Deci & Ryan, 2000). Thus, a need is not a "nice to have" but a "must have". For this reason, Ryan and Deci (2017) posit that there should be functional positive consequences which reflect the satisfaction or fulfilment of needs and dysfunctional negative outcomes which reflect the frustration or deprivation of needs. Ryan (1995) also added that the benefit of need satisfaction should also be generalisable across various cultures and contexts. The satisfaction of these criteria as a means to establish autonomy, competence, and relatedness as basic psychological needs is discussed next.

First, the satisfaction of the three basic psychological needs is known to contribute to well-being across different cultures, as demonstrated through cross-cultural studies (Brien et al., 2012; Chen et al., 2015), and in different contexts such as education (Tian, Chen, & Huebner, 2014), the workplace (Van den Broeck, Ferris, Chang, & Rosen, 2016), sports (Mahoney, Gucciardi, Ntoumanis, & Mallet, 2014), the family unit (Davids, Ryan, Yassin, Hendrickse, & Roman, 2016), and healthcare (Ng, Ntoumanis, Thøgersen-Ntoumani, Stott, & Hindle,

2013). These studies indicate that satisfaction of the three needs results in positive outcomes across various cultures and contexts.

Secondly, Deci and Ryan (2000) posit there should be functional positive outcomes under the condition which allows for the satisfaction of the three basic psychological needs. Discussing organisational research in SDT specifically, the satisfaction of all three basic psychological needs results in positive outcomes in the workplace in areas such as increased work performance (Baard et al., 2004), reduced symptoms of poor mental health (Deci et al., 2001; Ilardi, Leone, Kasser, & Ryan, 1993), greater acceptance of change in the organisation (Gagné, Koestner, & Zuckerman, 2000), higher job satisfaction (Ilardi et al., 1993), increased organisational citizenship behaviour (Roche & Haar, 2013), more creativity and proactive behaviours (Rosen, Ferris, Brown, Chen, & Yan, 2014), increased state mindfulness leading to well-being, higher goal attainment, and lower burnout (Olafsen, 2017), an autonomous motivation leading to well-being (Güntert, 2015; Oostlander et al., 2014), and better job performance and work engagement (Trépanier, Forest, Fernet, & Austin, 2015).

Traditionally, need satisfaction has been the focal point of research, but, as Ryan and Deci (2017) suggested, an element can only be considered as a need if there are dysfunctional negative outcomes resulting from the frustration of that need. The frustration of needs refers to the state in which an individual feels their basic psychological needs are actively undermined by others (Bartholomew, Ntoumanis, Ryan, & Thøpersen-Ntoumani, 2011). While need satisfaction enhances well-being and leads to various positive outcomes, the active or constant frustration of needs often leads to dire negative outcomes such as anxiety,

depressive symptoms, and other maladaptive coping strategies (Deci & Ryan, 2000).

When basic psychological needs are frustrated, employees experience negative outcomes. These include low affective commitment, high cynicism, and turnover intentions (Gillet, Forest, Benabou, & Bentein, 2015), feeling obligated to perform the job, which leads to high psychological distress and psychosomatic complaints, low work engagement and job performance (Trépanier et al., 2015), reduced work satisfaction, happiness, and self-realisation (Gillet, Fouquereau, Forest, Brunault, & Colombat, 2012), high level of burnout, turnover intentions, and absenteeism (Schultz, Ryan, Niemiec, Legate, & Williams, 2015), workaholism (Gillet, Morin, Cougot, & Gagné, 2017), and high levels of stress, somatic symptoms, and emotional exhaustion (Olafsen, Niemiec, Halvari, Deci, & Williams, 2017).

These studies demonstrated the positive outcomes resulting from the fulfilment of the three needs and the negative outcomes resulting from the frustration of the three needs across various cultures and contexts. Thus, they established the essential role of autonomy, competence, and relatedness as basic psychological needs. The studies above also demonstrated that the path to well-being, regardless of context or culture, is connected to the fulfilment of the individual's basic psychological needs. Each of these needs will be discussed in the following section.

Competence

The need for competence was derived from the work by White (1959). Competence refers to an individual's constant and persistent need to be effective in the environment or tasks, to make continuous attempts for mastery, and to feel

the sense of efficacy while performing it (White, 1959). The need to feel competent is driven by the desire to deal effectively with the environment; hence, a person will continually seek situations which will provide a reasonable challenge, allowing the optimal use of their abilities (Deci, 1975). Competence as a psychological need is functionally significant. It is the need for competence that results in people's being motivated to learn and expand skills and capacities (Deci & Ryan, 2000).

The satisfaction of competence need leads to various positive outcomes such as greater daily well-being (Sheldon, Ryan, & Reis, 1996), higher perceived performance (Reeve & Sickenius, 1994), evaluating their environment as more in their control and the goals within their reach (Tong et al., 2009), and experiencing positive emotion and greater intention to engage in an activity (Di Battista et al., 2019).

On the other hand, competence need frustration leads to various negative outcomes in people such as experiencing the feeling of fear (Tong et al., 2009), having pervasive negative thoughts and feelings about themselves (Weigelt, Syrek, Schmitt, & Urbach, 2019), and being disengaged from an activity (Radel, Pelletier, & Sarrazin, 2013).

In summary, the satisfaction of competence need is crucial in motivating employees to engage and master an activity at work for development. If competence need is actively frustrated, employees may lack the motivation to learn new skills or try new tasks; hence, need frustration may results in stagnation of knowledge and skills development in the organisation.

Autonomy

Autonomy need in SDT refers to the need individuals have to make decisions and to act willingly according to their interests and values while being mindful of the expectations, demands, and constraints from their social circle (Chirkov, 2011). However, autonomy need is often misunderstood as the need to be independent, to have choice and control (Iyengar & Lepper, 1999). This latter view of autonomy need can be problematic for those employed in low-skilled occupations, as it might seem that their autonomy need will constantly be undermined due to the lack of control and options available in their workplace. Nevertheless, Ryan and Deci (2006) argued the need for autonomy is not merely the need to have options, but rather a sense that one embraces the choice, even when only one option is given or available. Essentially, the need for autonomy is the need to fully endorse the option or to feel a sense of volition in endorsing the action even when a limited option is available.

As a basic psychological need, the satisfaction of autonomy need leads to various positive outcomes such as taking greater initiative at work, which, in turn, results in increased job performance for employees (Grant, Nurmohamed, Ashford, & Dekas, 2011), higher intention to adhere to good practices in the organisation (Nolan & Highhouse, 2014), more positive affect and satisfaction with life and lesser negative affect (Yu, Levesque-Bristol, & Maeda, 2018), constantly looking for experiences which promote personal growth and, frequently, the use of constructive conflict resolution strategies (Legault, Ray, Hudgins, Pelosi, & Shannon, 2017), perceiving an assigned activity as more interesting and useful for them (Patall, Dent, Oyer, & Wynn, 2013), and

displaying greater congruence between their true versus expressed thoughts, feelings, and behaviours (Weinstein et al., 2012).

On the other hand, when autonomy need is frustrated, people tend to repeatedly focus on negative emotions (Legault et al., 2017) and exhibit workaholic behaviours (Andreassen, Hetland, & Pallesen, 2010). However, in the event of both autonomy and competence deprivation, people tend to depend passively on others for help to accomplished an activity (Radel et al., 2013). Such dependent behaviour is passive in that they attempt to obtain the quickest and easiest solution to the problem. Finally, people tend to adapt cognitively to compensate for the deprivation of autonomy need. They tend to shift their focus to external activities such as overt striving to achieve extrinsic goals in an attempt to satisfy their deprived autonomy need (Radel, Pelletier, Sarrazin, & Milyavskaya, 2011).

Conclusively, the satisfaction of autonomy need is crucial for employees to feel a sense of volition even when choice is limited. Autonomy need satisfaction enables employees to actively look for a growth opportunity and to adopt positive strategies in solving a work problem. In contrast, the result of autonomy need frustration is a poor state of being and counterproductive behaviours at work such as finding a quick but not necessarily well-deliberated solution to the work problem.

Relatedness

Developing from the work of Baumeister and Leary (1995), relatedness is the need to form and maintain long-term caring and positive interpersonal attachments with others, whether with individuals or groups. Relatedness has also been explored in many settings and specific groups such as among senior

executives who viewed relatedness as the need to have long-term, continuous interaction with people who shared a common goal or purpose with them (Mueller & Lovell, 2015). Apart from SDT which recognises the need for relatedness as an important intrinsic need (Deci & Ryan, 2000), Bowlby (1969), another prominent human development theorist, also recognises relating to others as a basic and inherent human need.

The satisfaction of relatedness need leads to positive outcomes such as well-being and positive emotions (Jiang, Zeng, Zhang, & Wang, 2018; Reis, Sheldon, Gable, Roscoe, & Ryan, 2000), job satisfaction (Spehar, Forest, & Stenseng, 2016), and feelings of gratitude and prosocial behaviours (Shiraki & Igarashi, 2018). Aside from the positive emotions derived from being connected to others, relatedness need is also theorised as a way in which people adapt and survive through associating and cooperating with those possessing similar characteristics to themselves (Sheldon, Sheldon, & Osbaldiston, 2000).

In contrast, when people's relatedness is thwarted, they tend to be less engaged in prosocial behaviour (Twenge, Baumeister, Dewall, Ciarocco, & Bartels, 2007) and to act more aggressively (Twenge, Baumeister, Tice, & Stucke, 2001). When relatedness need is thwarted, it drives people to try harder to be accepted socially as a reaction to the unfulfilled need (Dewall, Baumeister, & Vohs, 2008). In the digital era, people turn to overuse of mobile phones and social networking sites such as Facebook to compensate for real-life unmet relatedness need. This compensatory behaviour results in obsession over these tools or sites, social disconnection, and poor communication skills (Hong et al., 2019; Sheldon, Abad, & Hinsch, 2011).

In addition to demonstrating the connection between relatedness and well-being, these studies showed that the outcome of relatedness need satisfaction and frustration are often related to the individual's social functioning and behaviours. Therefore, the satisfaction of relatedness need is not only crucial for employees' well-being, but also contributes to positive social behaviours and functioning.

The antecedent and outcomes of need satisfaction and frustration

As discussed above, while each of the three fundamental needs is unique in its functional importance, all three needs are crucial for an individual to experience sustained growth, integrity, and health from both the psychological and physical perspective (Ryan & Deci, 2000a). A meta-analysis of needs satisfaction at work conducted by Van den Broeck et al. (2016) supported Ryan and Deci's view that the satisfaction of each individual need is uniquely related to various positive outcomes at work, and that the satisfaction of all three needs is important for employees' well-being.

To reiterate the relationships demonstrated in Figure 1 (see page 13), SAS has frequently been investigated as providing the context in which need satisfaction can be facilitated and thus lead to various positive outcomes at work such as better job performance (Baard et al., 2004), well-being at work (Gillet et al., 2012), greater job satisfaction and better job performance (Gillet et al., 2013), and higher organisational commitment and positive affect (Gillet et al., 2015). Though previous studies demonstrated the benefit of SAS on need satisfaction and positive outcomes at work, not much is known about the effect of SAS on need satisfaction and its outcomes specifically with employees in low-skilled occupations.

Furthermore, less is known of the relationship between SAS and need frustration. Only a few studies have investigated such an effect (Gillet et al., 2012; Schultz et al., 2015), and they did not focus on employees in low-skilled occupations. Given that it is evident that SAS, which is such an important positive resource in terms of employees' well-being, has been neglected in organisational and SDT studies, this thesis aims to establish the perceived effect of SAS on employees in low skilled occupations (see chapter 4).

Putting SDT into practice

Employees whose jobs are monotonous and which are low in autonomy, task identity, and task significance often reported lower need satisfaction (Van Hooff & Van Hooft, 2017). One of the ways to address this issue is to establish a more need-satisfying work environment for employees in these kinds of occupations by training supervisors in using more autonomy-supportive behaviours. As yet, autonomy-supportive training has not been conducted with supervisors in low-skilled occupations. This thesis addresses this gap by evaluating the effect of the AST on supervisors and employees in low-skilled occupations (see chapter 5).

Furthermore, another practical area which is neglected in many autonomy-supportive training studies concerns the long-term application of SAS which can contribute to employees' well-being for a longer period. An effective autonomy-supportive training is the first step to experiencing the benefit of SAS. For employees to experience the long-term benefit of autonomy support, autonomy-supportive behaviours require continuous practice after the training. The long-term application of the skills learned has often been a desirable outcome of training (Deloitte, 2019; Grossman & Salas, 2011). However, training alone does

not guarantee a long-term application of the skills (Blume, Ford, Baldwin, & Huang, 2010). Indeed, Grossman and Salas (2011) suggest a work environment which discourages the application of new training skills can significantly influence trainees' ability to fully and consistently apply the skills learned, hence threatening the effect of training. Thus, there is a need to identify specific work factors that may increase or detract from the maintenance of SAS. This issue is reviewed below.

Maintenance of SAS

As discussed above, one key area that is lacking in autonomy-supportive studies is the study of the factors which support or detract from the maintenance of SAS. This section draws from Reeve (2009) and Stenling and Tafvelin's (2016) work concerning the effects of pressure and an organisational autonomy-supportive environment on SAS to discuss these factors in detail.

In a study with leaders of Swedish sports clubs, Stenling and Tafvelin (2016) found that an organisational autonomy-supportive environment was the key to long-term application of leadership skills learned after the training. In addition to the study by Stenling and Tafvelin (2016), Blume et al. (2010) and Chiaburu, Van Dam, and Hutchins (2010) have found that managerial support is crucial in enhancing trainees' self-efficacy and motivation to apply the skills learned after the training.

Deci, Speigel, and Ryan (1982) also found that teachers became more controlling with their students when they perceived their own superior as controlling. If supervisors operate under controlling managerial behaviours, which are contrary to autonomy-supportive behaviours, the behaviour of managers can easily discourage supervisors from maintaining SAS, as there is a discrepancy

between what they learn in the training and the actual work environment (Gilpin-Jackson & Bushe, 2007). Therefore, managerial autonomy support is vital in the maintenance of SAS and managerial controlling behaviours will discourage supervisors from maintaining SAS. In this thesis, the term manager refers to someone to whom the supervisors report.

Reeve (2009) further conceptualised various sources of pressures leading to teachers' adopting more controlling behaviours in place of autonomy-supportive behaviours. Pressures are categorised into three main areas: pressure from above, pressure from below, and pressure from within. Pressure from above represents pressure that comes from their superior, government standards or culture shaped by common beliefs held within the profession. For teachers, pressure from above includes the expectations to be responsible for students' performance, the pressure to conform to the teaching styles commonly used by fellow colleagues, and having minimal control over their job (Pelletier, Séguin-Lévesque, & Legault, 2002). On the other hand, pressure from below represents student's passive behaviours such as lack of engagement in class, while pressure from within represents teachers' beliefs, values, and personality disposition. Various sources of pressure as conceptualised by Reeve (2009) provide information on the factors which can detract from supervisors' maintaining SAS.

While managerial autonomy support can facilitate the maintenance of SAS, controlling behaviours and pressure from various sources such as from managers, employees, and the supervisor's own belief system can negatively influence the maintenance of SAS. When supervisors (and teachers) are more autonomy-supportive, employees (and students) also perceived them as more autonomy-supportive; hence, this perception resulted in benefits such as greater

need satisfaction which leads to well-being (Cheon, Moon, & Reeve, 2012; Ryan & Deci, 2017). Therefore, the maintenance of SAS is crucial for employees to experience the positive effect of SAS.

Moreover, organisational factors consisting of managerial behaviours and various sources of pressure, suggested to affect autonomy-supportive behaviours are within the organisation's "actionable" areas (Colquitt & George, 2011). Simply put, upon identifying these factors, organisations can provide targeted posttraining support to supervisors to maintain autonomy-supportive behaviours, thus, highlighting the practical use of such knowledge. Therefore, the final aim of this thesis is to explore factors that could affect the maintenance of SAS with supervisors in low-skilled occupations (see chapter 5).

This chapter now turns to discussing the organisation of the thesis and the content covered in each chapter.

Organisation of the Thesis

Chapter 1 provides an introduction and indicates the overall contribution of the thesis. The next chapter discusses the study's overall design and methodology. The following three chapters then present three separate but related studies. The first of these studies outlines the process of designing the AST and presents the outcome of a preliminary evaluation conducted with supervisors using the AST. The second study focuses on SAS as a predictor to work-related outcomes (job performance, well-being, and stress) using need satisfaction and frustration as mediators. The final study deals with the conducting and evaluation of the AST with supervisors and employees using a quasi-experimental approach Following the training evaluation process, qualitative focus groups and interview were conducted to explore the factors that could affect the maintenance of SAS.

Finally, this thesis concludes with a general discussion of the study outcome.

Table 2 outlines the thesis and describes the content covered.

Table 2

Overview of the Chapters and the Content Covered

Chapter	Title	Content covered
Chapter 1	Introduction and overview	This chapter discusses the research objectives and problems and presents a review of relevant literature and the research rationale.
Chapter 2	Study design and methodology	This chapter discusses the overall study design, outlines the phases of the study and the general methodology involved. The outline of the three research articles which includes rationale, design and sample and, the contribution is also provided.
Chapter 3	Article 1 – "Supervisory skills training for the neglected supervisors: Development and preliminary evaluation of an autonomy-	This paper demonstrates the systematic integration of SDT and adult learning principles in the design of the autonomy-supportive training (AST) and the preliminary evaluation of the AST by using reaction evaluation (Kirkpatrick & Kirkpatrick, 2007) with supervisors in low-skilled occupations. This paper has been published.

	supportive programme.”	
Chapter 4	Article 2 – “Psychological autonomy and well-being of employees in low-skilled occupations.”	This paper investigates the relationship between SAS and job performance, well-being and stress with need satisfaction and frustration as mediators using cross-sectional data collected from employees’ survey (Time 1 employees’ survey). This paper has been published.
Chapter 5	Article 3 – “Training and maintaining autonomy-supportive supervisory style in low-skilled occupations.”	This paper examines the effect of the AST on supervisors in terms of supervisory style, and employees in terms of perceived SAS, need satisfaction, and frustration using three-wave pre and postintervention surveys. The qualitative phase explores the factors affecting the maintenance of SAS using focus groups data from supervisors. This paper has been published.
Chapter 6	General discussion	This chapter outlines and summarises the three articles’ along with the theoretical and practical implications of the study. Limitations and recommendations for future research are also included in this chapter.

CHAPTER 2

STUDY DESIGN AND METHODOLOGY

The first chapter outlined the research contribution, rationale, questions, related literature on employees in low-skilled occupations, and literature on SDT related to this study. This chapter will first describe the general methodology and then set out the study's general procedure in terms of the measures, the sample, and the analyses strategies used in it. Finally, an overview of the three research articles will be provided.

General Methodology

This thesis took both quantitative and qualitative approaches to answering the research questions. One of the reasons for using a mixed-method approach is the need to use different methods—quantitative and qualitative—to understand the different components of the study (Greene, Caracelli, & Graham, 1989). In this thesis, the mixed-method was used to study different aspects of SAS and employees' well-being. The rationale is explained below.

The first study—presented in the thesis as chapter 3—was a qualitative study. It discussed the development of AST and provided a preliminary evaluation of the AST using open-ended questions. This study answered the first research question (How can AST be adapted for supervisors of low-skilled occupations?). The second research question (What is the perceived effect of SAS on employees in low-skilled occupations?) was answered through a quantitative survey using employees' Time 1 questionnaire data. This second research article constitutes chapter 4.

The third research question (What is the effect of the AST on supervisors and employees?) was answered through a quantitative study using a three-wave

longitudinal survey and a quasi-experimental with intervention and wait list control group approach. Finally, a qualitative study using focus groups and an interview approach was conducted with supervisors to answer the fourth research question (What can affect the maintenance of SAS among supervisors in low-skilled occupations?). The third article (presented as chapter 5) answers research questions three and four.

The following section describes the general procedure, measures, sample and analyses strategies of the different research stages.

General Procedure, Measures, Sample Description, and Analyses Strategies

This section will describe the general procedure in three stages, followed by measures used with the supervisors and employees, description of supervisors' and employees' sample, and analyses strategies used to answer the research questions.

The overall procedure involved developing and pilot testing the AST; evaluating the effect of the AST on both supervisors and employees; and, conducting qualitative focus groups and interviews with the supervisors. Each stage is described below.

Procedure

Development and pilot testing of the AST

Literature relating to SDT, adult learning principles, and previous learning experience of those employed in low-skilled occupations was identified and reviewed. An in-depth study was undertaken to analyse the assumption of adult learning principles and SDT to ensure the consistency of their assumptions about learners. Next, the guide provided by previous autonomy-supportive training studies and adult learning principles was systematically integrated using the

whole-part-whole (WPW) model suggested by Knowles et al. (2012) in order to develop the AST. Training materials such as PowerPoint slides and a training booklet were created to deliver the content of the AST. The language and delivery method were adapted to suit the learning preference of those employed in low-skilled occupations.

After the AST had been developed, business directory sites such as NZ Kompass, Finda, and Manufacturing NZ were used to identify and select suitable organisations in which to conduct pilot training for the AST. Job search sites such as Trademe Jobs and SEEK NZ were also used to identify organisations which were employing people in positions such as factory processing workers or operators, front-line hospitality service workers, cleaners, and housekeepers. Initial contact with the organisation's human resource manager or a key member of the management team was made via phone to invite these organisations to participate in the pilot training for the AST.

Two of the targeted organisations, a manufacturer and a cleaning service company, agreed to participate in the pilot training for the AST. The training was conducted with the supervisors at each organisation separately. Supervisors were given an overview of the study process. They were also informed that their feedback on the training material and design would be collected at the end of the training. The questionnaire was distributed and collected in after the training (see Appendix 1 for the questionnaire).

Evaluation of the AST with supervisors and employees

A similar search process to the one used to identify organisations for the pilot training was followed to recruit participants for the next phase of the research, i.e., contacts were made and interested organisations were invited to

participate in the main study of this thesis. The main study employed a three-wave longitudinal survey using a quasi-experimental intervention and wait list control group study; this was conducted to evaluate the AST with supervisors and employees. Four organisations responded to the invitation. Initial meetings were held with the human resource personnel or factory manager to provide them with an overview of the study process.

With the support of three participating organisations, all supervisors and employees were invited to a meeting. A separate meeting was held in each of the three organisations. In the meeting, the purpose and study process were explained to all supervisors and employees. They were invited to participate in the study by completing questionnaire surveys. Additionally, supervisors were invited to attend the training session. Next, the participants were provided with a consent form on which they could indicate their willingness to participate in the study, and an information sheet describing the study was attached to the survey form. In one organisation, the study was explained to the participants individually at their workstations because of operational challenges in organising a meeting involving all supervisors and employees.

Supervisors were given their survey forms in the meeting, as their purpose was to establish the supervisors' baseline supervisory style (Time 1 survey). The survey forms that were given to the employees in the meeting, were designed to (1) establish the perceived effect of SAS on employees, and (2) to establish the baseline of employees' perceived SAS, need satisfaction and frustration (Time 1 survey). The consent form, information sheet, and survey for supervisors and employees used in this study are attached as Appendices 2-5.

Supervisors' survey forms were labelled according to the identification code assigned to them and I distributed the survey form to each supervisor individually. At the same time, employees were asked for their supervisor's name and were given the survey form which matched their supervisors' code. This procedure was employed for two reasons: first, so that the employees' survey form could in each case be linked to their supervisor, and secondly, so that employees whose supervisor was in the intervention or wait list control group could easily be distinguished. I also provided on-site literacy support by reading out the content of the survey form to employees and supervisors who required literacy support. The survey forms were either collected again after the meeting or posted in survey boxes. The survey boxes were located in the organisation's café and in the employees' clock-in area.

Supervisors were assigned to intervention and wait list control groups after discussion with the human resource manager or factory manager in order to accommodate to supervisors' work schedules. The AST was conducted with supervisors who were assigned to the intervention group a week after the Time 1 survey had been administered. The training sessions for the supervisors were conducted across the four organisations separately. The training lasted for 3 hours, and 2 weeks later a 1-hour follow-up session was conducted. As participating organisations viewed the training as a supervisory development exercise, the time the supervisors spent on the training was treated as paid working hours.

Two weeks after the AST was conducted with supervisors in the intervention group, the first posttraining survey (Time 2) with supervisors and employees (both the intervention and the wait list control groups) was collected. The procedure outlined above was again followed; survey forms labelled with

supervisors' code were distributed to the supervisors, while employees were given survey forms labelled with their supervisor's code in a meeting. Similar on-site literacy support was also provided to employees and supervisors. The survey forms were collected at the end of the meeting or via survey boxes placed at the clock-in area or café.

The final posttraining survey (Time 3) was distributed to supervisors and employees in the intervention and wait list control groups 8 weeks after the AST was completed with supervisors in the intervention group. As with the earlier survey distribution and collection method, supervisors were given survey forms labelled with their code, and employees were given survey forms labelled with their supervisor's code. On-site literacy support was provided to employees and supervisors. The survey forms were collected at the end of the meeting or via survey boxes placed at the clock-in area or café.

Finally, the AST was conducted with supervisors in the wait list control group. They received the same training as the supervisors in the intervention group and the training sessions were held at each participating organisation. This process was followed to ensure the ethical and equal treatment of all participating supervisors.

Qualitative focus groups and interview with supervisors

This was the final stage of the study. It used a qualitative focus group and interview approach in order to examine how supervisors maintain SAS or otherwise, post AST training. The focus here was on the organisational factors discussed in the section entitled "Maintenance of SAS". This phase commenced after all the participants in the participating organisations had completed the evaluation of the AST stage.

An email invitation outlining the purpose of the focus group was first extended to the human resource personnel or factory manager of the four participating organisations. Three organisations responded to the invitation and extended the invitation to the supervisors. Following the invitation, a meeting was set with the supervisors of the three organisations. The interview option was also made available to supervisors who were unable to attend the focus group due to scheduling issues. One supervisor expressed interest in an interview as the focus group meeting time was to take place outside of working hours. During the meeting, the purpose of the focus group was explained and the invitation to participate was again extended to the supervisors. Supervisors who were still interested in participating in the focus group stayed on after the meeting. Supervisors provided their consent for the audio recording of the focus group and interview. The information sheet and consent form are available in Appendices 6 and 7.

Measures

Development and pilot testing of the AST

The open-ended questionnaire used to evaluate the AST was modelled after Kirkpatrick and Kirkpatrick's (2007) reaction evaluation. The questionnaire (see Appendix 1 for the full questionnaire) evaluated the AST based on relevance to the workplace, ease of understanding, delivery method, topic arrangement, and its effectiveness in motivating supervisors to use the skills. For example, one question asks: *At the end of the workshop, do you think that the content makes you think about how to practise supportive supervisory style? Why?*

Evaluation of the AST with supervisors and employees

This stage used different measures for supervisors and employees. The measures used for supervisors will be described first, followed by the measures used for employees.

Supervisors

The three-wave longitudinal survey used identical measures. The survey for the supervisors—problems at work (PAW) —aimed to measure their supervisory style. Additionally, supervisors' demographic details including gender, ethnicity, age, length of service in the organisation, and length of service as a supervisor were also measured (see Appendix 3 for the full questionnaire).

The PAW consisted of eight vignettes with each describing the typical problems work supervisors will encounter with a subordinate. Each of the vignettes contains four possible responses to the problem. Each response represents a varying degree of supervisors' autonomy supportiveness such as *For some time Jack's down times have been at a steady, average level. You suspect, however, that he could do better. For each item, choose one of the responses below to indicate what you think is the most appropriate thing to do*. Supervisors rate the appropriateness of the responses on items such as *Encourage Jack to talk about his performance and whether there are ways to improve* and *Stress to Jack that he should do better, and that he won't get ahead if he continues at his current level.* A 7-point scale ranging from 7 *Highly appropriate* to 1 *Highly inappropriate* was used. The scale was validated by Deci et al. (1989) with $\alpha = .70$ and $\alpha = .75$ and test-retest reliability of .80.

Employees

The survey for employees measured (1) perceived SAS, using a work climate questionnaire (WCQ), (2) need satisfaction and frustration, using the basic psychological need satisfaction and frustration–work domain scale (BPNSF-W), (3) well-being using the WHO-5 well-being scale (WHO-5), (4) stress using the 4-item perceived stress scale (PSS-4), and (5) job performance, by adapting Abramis' (1994) job performance scale, which will be discussed below. Additionally, demographic details of age, gender, ethnicity, length of service in the organisation, length of service with current supervisor, absenteeism, and type of employment contract were also measured. Two unique identifiers were included in the employees' survey to track the survey of the participants across time. The identifiers were their date of birth and the last four digits of their phone number (see Appendix 5 for the full questionnaire).

As described in the "Procedure" section, the Time 1 survey form for the employees was distributed to: (1) establish the perceived effect of SAS on employees; and, (2) establish the baseline of employees' perceived SAS, need satisfaction, and need frustration. Therefore, all the measures described were used to achieve the first objective, while the three-wave longitudinal survey used only the WCQ and BPNSF-W scale.

The 15-item WCQ scale was adapted by Baard et al. (2004) to measure employees' perceived SAS. That scale was, in turn, adapted from Williams and Deci (1996) ($\alpha = .96$) who measured students' perceived autonomy support of their college instructors and from Williams, Grow, Freedman, Ryan, and Deci (1996) ($\alpha = .92$) who measured patients' perceived autonomy support of their health care providers. The questionnaire consists of items such as *My manager*

tries to understand how I see things before suggesting a new way to do things, and participants rated their perception on a scale ranging from 7 *Strongly agree* to 1 *Strongly disagree*.

The BPNSF-W, a 24-item questionnaire, was designed to measure the satisfaction and frustration of competence, relatedness, and autonomy needs at work. The scale was originally developed by Chen et al. (2015). Schultz et al. (2015) later adapted the scale to the work domain, an adaption which generated reliability of $\alpha = 0.90$ for need satisfaction and $\alpha = 0.88$ for need frustration. Participants responded to a series of items on needs satisfaction such as *At work, I feel a sense of choice and freedom in the things I undertake* and on need frustration such as *I feel excluded from the group I want to belong to at work* on a 7-point scale ranging from 7 *Strongly agree* to 1 *Strongly disagree*.

The World Health Organization's (WHO) 5-item scale was derived from the WHO-10 scale (Bech, Gudex, & Staehr Johansen, 1996). It measures well-being with items such as *I have felt cheerful and in good spirits at work* ranging from 5 *All of the time* to 0 *At no time*. The scale has been widely used in the clinical setting and in the workplace with $\alpha = .89$ for public sector employees and $\alpha = .90$ for private-sector employees in Denmark (Bech, Lindberg, & Moeller, 2018).

The 4-item perceived stress scale (PSS-4) originated from the 14-item scale and was used as a brief measure to assess perceived stress by Cohen, Kamarck, and Mermelstein (1983). The PSS-4 scale Cronbach's alpha was .72. Participants responded to items such as *In the last month, how often have you felt that things were going your way.* Their responses were measured on a scale ranging from 4 *very often* to 0 *never*.

The self-rated job performance scale was adapted from Abramis (1994), which characterised job performance into technical ($\alpha = 0.83$), social performance ($\alpha = 0.76$), absenteeism, and tardiness. In this thesis, the technical and social performance elements were used as a measure of job performance. Participants responded to items such as *In the last four weeks you worked, how well did you handle the responsibilities and daily demands of your work* on a scale from 5 *exceptionally well* to 1 *very poorly*.

Qualitative focus groups and interview with supervisors

The focus group interview used a series of prompt questions to generate discussion among supervisors who participated in the study. The prompt questions were designed to understand factors which could affect the maintenance of SAS. Based on the literature discussed in "Maintenance of SAS" in chapter 1, the prompt questions asked about (1) supervisors' relationship with their managers and employees and (2) the pressure and the effect of pressure on their role as supervisors. The prompt questions include *Tell me about the relationship you have with your own managers/bosses?* The full set of prompt questions asked are included in Appendix 6.

Sample description

The sample will now be described in line with the stages outlined in the procedure. However, the employees' sample for the Time 1 survey collected in the evaluation of the AST stage will be described separately, as the data collected formed a different study in this thesis.

Development and pilot testing of the AST

A total of 11 supervisors, 3 from the manufacturing sector and 8 from the cleaning service industry participated in the pilot study. As the number of

participants was limited, demographic information was not collected so as to assure the anonymity of the participants.

Employees' Time 1 survey

A total of 171 employees' surveys were collected at Time 1. The employee participants were mainly male (66.7%); 28.7% were female and the remainder did not specify their gender. The mean age of the participants was 39.6 years (SD = 13.2). In terms of ethnicity, 28.1% of the participants identified as Maori, 19.3% identified as European New Zealander, 14.6% identified as New Zealander, and the others identified themselves as Asian, Pacific Islanders, and other ethnicities. Most of the participants were factory operators (74.9%), while 25.1% were from various services in the hotel industry (e.g., housekeeping, food and beverage servicing, and receptionist). A total of 54.5% of the employees have served in their organisation for up to 5 years; 42% had worked for their organisation for more than 5 years, and 3.5% did not specify their length of service. In terms of their work status, 67.7% of the employees were on a permanent full-time contract; 19.8% of the employees were on a permanent part-time contract; 8.2% were on a fixed-term contract, and 4.3% did not specify the terms of employment.

Evaluation of the AST with supervisors and employees

This section will first describe the supervisors' sample and then the employees' sample for those who participated in the three-wave longitudinal survey.

Supervisors

A total of 44 supervisors participated in all three rounds of data collection. Among the 44 supervisors, 75.0% were male, 22.7% were female, and 2.3% did

not specify their gender. In terms of age, 52.3% of the supervisors were 40 years old or below, while the remainder were above 40 years of age. The majority of the supervisors identified as European New Zealander (43.1%), 22.8 % identified as New Zealander, 18.2% identified as Maori, 9.1% identified as Asian, 4.6% identified as Pacific Islanders, and the remainder did not state their ethnicity. On average, the supervisors had been employed in their organisations for 10.0 years (SD = 8.3) and in their role as supervisors for 5.7 years (SD = 6.4).

Employees

A total of 240 employees completed the survey during the three-wave process. The mean age of the employee participants was 37.7 years (SD = 13.3). Of the 240 employees, 64.6% were male, 28.8% were female, and the remainder did not specify their gender. In terms of ethnicity, 30% of the participants identified as Maori, 18.8% identified as European New Zealander, 15.4% identified as New Zealander, and the others identified themselves as Asian, Pacific Islanders, and other ethnicities. Most of the participants were factory operators (72.9%), while 27.1% were from various services in the hotel industry (i.e., housekeeping, food and beverage, receptionist, etc.). A total of 55.8% of the employees had served in their organisation for between less than 1 up to 5 years; 39.1% had been with the organisation for more than 5 years, and 5% did not specify their length of service. In terms of their contractual status, 63.3% of the employees were on a permanent full-time contract, 20.8% were on a permanent part-time contract, 8.3% were on a fixed-term contract, and 7.6% did not specify the terms of employment.

Qualitative focus groups and interview with supervisors

Three focus groups and an interview were conducted with 15 supervisors. Of the 15 supervisors, 3 were female and 12 were male. Focus group 1 consisted of three supervisors from a factory; group 2 consisted of four supervisors from a hotel, and group 3 consisted of seven participants from a factory. An interview was conducted with a factory supervisor who works on the night shift. The interview lasted about 40 minutes and the three focus groups lasted from 45 to 75 minutes.

Analyses strategies

This section will describe the analyses strategies used to answer the research questions, following the research stages described in the "Procedure" section. However, the analysis strategy for employees' Time 1 survey will be described separately, as it formed a different study in this thesis.

Development and pilot testing of the AST

The open-ended questionnaire data collected from supervisors were analysed using a structured approach to thematic analysis (Braun, Clarke, Hayfield, & Terry, 2019). Based on the questions asked in the questionnaire, codes and themes were categorised broadly into: (1) relevance of the training to their workplace, (2) the delivery method, (3) motivation for supervisors to use the skills, and (4) training content and topic arrangements. The presentation and discussion of the results were also based on the themes described.

Employees' Time 1 survey

Employees' Time 1 survey data were analysed using multiple mediation analysis, as multiple mediators (need satisfaction and frustration) were hypothesised to mediate between perceived SAS and the outcome variables. The

analyses were conducted using Statistical Package for Social Science (SPSS) version 24, Process version 3.0 in accordance with my university's institutional licence. Negatively worded items were reversed. Factor analysis and reliability tests were conducted to determine the reliability and validity of the scale with the employees' sample. Perceived SAS was the predictor, need satisfaction and frustration were the mediators, and job performance, well-being, and stress were the outcome variables in this study.

Evaluation of the AST with supervisors and employees

Supervisors

The three-wave longitudinal data with supervisors were analysed using repeated-measures ANOVA. All the data were loaded and analysed using SPSS, version 24. Factor analysis and reliability tests were conducted to establish the validity and reliability of the scale. The PAW scale can be averaged into a single composite to demonstrate the overall supervisory style or evaluated as four separate styles. In this thesis, supervisors' styles were evaluated separately in order to test the effect of the training on each supervisory style.

Employees

The three-wave longitudinal employees' survey data were analysed using growth curve modelling. The analyses were conducted using SPSS version 24. A growth curve modelling was chosen as it can accommodate for missing data and is able to analyse change within and between individuals (Twisk, 2006). The linear trend was modelled using maximum likelihood estimation as the base model. Time was the predictor, while SAS, need satisfaction and frustration were the dependent variables.

Qualitative focus groups and interview with supervisors

The focus group data were analysed using thematic analysis following the steps proposed by Braun and Clarke (2006). Data (audio recordings) were first transcribed and familiarised through reading and re-reading of the transcribed data. Thereafter, initial codes were generated from the data and these were collated to form possible themes. An initial mind map was formed after the generation of codes as a way to represent the possible themes. The themes were reviewed to ensure that the different, ordered themes were connected. Finally, each theme was given a clear name and definition to represent its content.

Overview of Research Articles and Rationale

This section outlines the three research articles written to fulfil the study's aims to (1) develop the AST and conduct a preliminary evaluation of the AST with supervisors in low-skilled occupations; (2) establish the perceived effect of SAS on employees in low-skilled occupations; (3) evaluate the outcomes of AST on supervisors and employees; and, (4) explore the factors affecting the maintenance of SAS with supervisors.

Study One (chapter 3): Supervisory skills training for the neglected supervisors: Development and preliminary evaluation of an autonomy-supportive programme.

This study accomplished a dual purpose by first discussing the systematic integration of SDT and adult learning principles and then conducting a preliminary evaluation of the training material developed. The development and pilot testing of the AST were necessary prior to further data collection to ensure the following research phases could be implemented smoothly. The following section provides an overview of the study's rationale, design and sample,

contribution to literature, and concludes with a statement of the publication status of the study.

Rationale. Supervisors in low-skilled occupations are often neglected in leadership skills development (Teague & Roche, 2012). As front-line leaders, developing such skills is essential to their role in motivating employees to perform. The autonomy-supportive training as proposed by SDT provides such a supervisory development opportunity and has also been shown to also benefit employees (Slemp et al., 2018). However, most autonomy-supportive training studies have been conducted with those in higher-skilled occupations such as teachers, coaches, and managers (Su & Reeve, 2011). Such training has yet to be tailored for those employed in low-skilled occupations. Therefore, this study aimed to design an autonomy-supportive training for supervisors in low-skilled occupations and to conduct a preliminary evaluation of the training design and material.

Design and sample. This study demonstrated the systematic integration of autonomy-supportive training of SDT and Knowles et al.'s (2012) principles of adult learning in designing a training tailored to the needs of supervisors in low-skilled occupations. A preliminary evaluation of the training design and material was conducted with 11 supervisors from two participating organisations using open-ended questions modelled after Kirkpatrick and Kirkpatrick's (2006) Level 1-evaluation of trainees' reaction.

Contribution to literature. This study made two major contributions. First, this study discussed the process of designing and conducting a training module for supervisors in low-skilled occupations, an area which is rarely the focus of organisational studies. Secondly, the autonomy-supportive training module

designed for supervisors in low-skilled occupations is, to my knowledge, a first in the SDT literature. Future studies can use the autonomy-supportive training module to investigate the effect of autonomy-supportive training on those employed in low-skilled occupations.

Publication status. Yong, A., Roche, M., & Sutton, A. (2019). Supervisory skills training for the neglected supervisors: Development and preliminary evaluation of an autonomy-supportive programme. *Industrial and Commercial Training, 51*(5), 315-326. DOI: 10.1108/ICT-01-2019-0013. [Impact Factor: 1.03; ABDC List Ranked C].

Study Two (chapter 4): Psychological autonomy and well-being of employees in low-skilled occupations.

This study investigated the mediation relationship between supervisors' autonomy-support (SAS) and employees' job performance, well-being, and stress through need satisfaction and frustration. The following section provides an overview of the study's rationale, design and sample, contribution to literature, and conclude with the publication status of the study.

Rationale. Supervisors' support for psychological autonomy, also known as SAS, has been found to contribute to employees' well-being and job performance, mediated by need satisfaction and frustration (Baard et al., 2004; Gillet et al., 2015). However, such a relationship has yet to be established for those employed in low-skilled occupations; hence, the role of a crucial predictor to employees' well-being has been overlooked in organisational and SDT studies. This study, therefore, aims to investigate the role of SAS, through need satisfaction and frustration, on outcomes such as job performance, well-being, and stress in terms of employees in low-skilled occupations.

Design and sample. This study used cross-sectional employees' data collected in the Time 1 survey. A total of 171 employees from four organisations participated in the study. Reliability tests, descriptive statistics, and main effect analyses were conducted using SPSS version 24. The relationship between SAS and individual need satisfaction and frustration was first tested, followed by the relationship between SAS and the outcome variables. After these relationships had been established, the mediation hypotheses were tested using SPSS version 24, Process 3.0.

Contribution to literature. The study provides an overview of the relationship between SAS and outcome variables through need satisfaction and frustration. Such a study, which includes both need satisfaction and frustration, had not, to my best knowledge, already been conducted with those employed in low-skilled occupations. Thus, this study contributes to SDT literature and well-being studies involving employees in low-skilled occupations. This study demonstrated the importance of SAS and future studies can consider cultivating SAS by providing autonomy-supportive training for supervisors to improve employees' well-being.

Publication status. Yong, A. P. C., Roche, M., & Sutton, A. (2019). Psychological autonomy and well-being of employees in low-skilled occupations. *New Zealand Journal of Employment Relations*, *44*(1), 37-58. [ABDC List Ranked B].

Study Three (chapter 5): Training and maintaining autonomy-supportive supervisory style in low-skilled occupations.

This study used a mixed-method approach whereby the first aim (using quantitative method) was to evaluate the effect of autonomy-supportive training

with supervisors and employees; its second aim (using qualitative method) was to explore factors influencing the maintenance of SAS. The following section provides an overview of the study's rationale, design and sample, contribution to literature, and concludes with the publication status of the study.

Rationale. As reviewed in the section "Autonomy-supportive training" (chapter 1), studies have shown autonomy-supportive training yields positive benefit to managers and employees; studies of autonomy-supportive training have also been conducted with teachers, coaches, and health care professionals. However, autonomy-supportive training has not been conducted with supervisors in low-skilled occupations whose employees' can benefit through better well-being upon receiving such support from their supervisors. Additionally, Stenling and Tafvelin (2016) and Reeve (2009) discussed factors such as organisational autonomy support (or lack of) and various sources of pressure that may influence autonomy-supportive behaviours among teachers and sports' club leaders; however, this area has yet to be systematically explored in an organisational context, particularly in low-skilled occupations. As maintaining SAS can potentially result in employees' experiencing the long-term benefit of SAS, understanding such factors can help organisations to provide targeted posttraining support for supervisors. For that reason, this study evaluated the effect of the AST on supervisors and employees in low-skilled occupations and explored factors affecting the maintenance of SAS in order to facilitate the long-term application of autonomy-supportive behaviours.

Design and sample. This article used a mixed-method approach beginning with a quantitative phase using a quasi-experimental with intervention and wait list control group method to evaluate the outcome of the AST. A quasi-

experimental approach was taken, as training time needed to accommodate to the supervisors' work schedule; hence, supervisors were assigned to intervention and control groups after discussion with human resource personnel or a factory manager.

A total of 44 supervisors and 240 employees from four organisations in New Zealand participated in the quantitative phase of the study. This article used a Time 1 survey (both supervisors and employees) as a preintervention measure and Time 2 and Time 3 surveys (with both supervisors and employees) as postintervention measures. The changes in supervisory style were analysed using repeated-measures ANOVA with SPSS version 24. Changes in employees were analysed using growth curve modelling (SPSS version 24) with inter-individual change as Level 2 and intra-individual change as Level 1.

For the qualitative phase, focus group and interview were the methods used to explore factors affecting the maintenance of SAS. The focus group method was used as the primary data collection method to generate discussion and observe similarities or differences in views among supervisors in the same organisation. Additionally, an interview option was made available to supervisors who were unable to attend the focus group session. The qualitative phase used focus groups and interview method with 15 supervisors to gather data. These were analysed using thematic analysis according to the procedure outlined by Braun and Clarke (2006).

Contribution to literature. This study demonstrated the malleability of supervisory style even among those in low-skilled occupations. To the best of my knowledge, this is the first study to have been conducted in a highly routinised and low control work environment. Its findings indicated that autonomy-

supportive behaviours can be cultivated among supervisors in such a work environment through AST. However, employees whose supervisors attended the training did not demonstrate the expected change to their perceived SAS in terms of need satisfaction and frustration. The factors influencing the maintenance of SAS, a first as regards its exploration in low-skilled occupations, indicated the negative impact that controlling managerial behaviours, pressures from various sources, and lack of resources have on SAS, on employees' perception of SAS, and on employees' well-being. While SDT literature has often focused on how to conduct effective training, this study shifted the focus to explore factors affecting the long-term application of skills which will benefit employees and supervisors for a longer period. Therefore, future studies can consider these factors in their training design for successful long-term application of skills among supervisors in low-skilled occupations. Finally, the findings highlight the areas of support organisations can provide to supervisors in maintaining an autonomy-supportive interaction with employees.

Publication status. Yong, A., Roche, M., & Sutton, A. (2019). Training and maintaining autonomy-supportive supervisory style in low-skilled occupations. *Journal of Management & Organization.* Advance online publication. DOI: 10.1017/jmo.2019.67. [Impact Factor: 1.021; ABDC List Ranked B].

CHAPTER 3

STUDY ONE

Paper Title

Supervisory skills training for the neglected supervisors: Development and preliminary evaluation of an autonomy-supportive programme.

Declaration

I developed the training material for the paper. I took the whole responsibility for conducting the training and completing the data collection. I was also responsible for the qualitative analysis of the data. I wrote the first full draft of the paper. The theoretical contributions are my own. My two supervisors (co-authors) provided feedback on the paper and editing. In general, I contributed 80% to this paper, and my two supervisors equally contributed 20% to it.

Publication Status

Yong, A., Roche, M., & Sutton, A. (2019). Supervisory skills training for the neglected supervisors: Development and preliminary evaluation of an autonomy-supportive programme. *Industrial and Commercial Training*, *51*(5), 315-326. DOI: 10.1108/ICT-01-2019-0013. [Impact Factor: 1.03; ABDC List Ranked C].

The following paper follows the layout, referencing and language required by the journal editors.

Abstract

Purpose – Previous studies have demonstrated that an autonomy-supportive supervision style is associated with improved well-being and positive behaviours for supervisees. However, autonomy-supportive training (AST) has yet to be tailored to suit supervisors in low-skilled occupations for whom traditional pedagogical approaches may be inappropriate. This article describes the development and preliminary evaluation of AST for these supervisors, using self-determination theory (SDT) and andragogical principles of adult learning.

Design/methodology/approach – SDT and andragogical principles were systematically integrated to develop (a three-hour) AST programme. The training sessions were trialled with 11 first-line supervisors in New Zealand as a preliminary evaluation of AST. The evaluation used open-ended questions following Kirkpatrick's evaluation model and incorporated the trainer's reflections.

Findings – Supervisors found AST relevant, easy to understand, and suited to their approach to learning. Trainer's reflections also provided insight into the challenges in conducting such training for supervisors in low-skilled occupations and the article makes suggestions to address these challenges.

Research implications/limitations – AST can be successfully tailored to first-line supervisors, indicating that an autonomy-supportive style of leadership is relevant for those employed in low-skilled occupations. This initial evaluation provides a foundation for future studies to conduct higher-level assessment of AST.

Practical implications – AST can be utilised to provide first-line supervisors with access to improved leadership development opportunities. Challenges of conducting this kind of training programme in a context of low-skilled occupations are addressed and recommendations made for organizations and trainers.

Originality/value – This study is novel as it demonstrates the development of AST, a leadership skills training, tailored to suit the needs of an understudied group, supervisors in low-skilled occupations.

Keywords: Leadership skills training, Autonomy-supportive style, Andragogy, Low-skilled occupations

Supervisory skills training for the neglected supervisors: Development and preliminary evaluation of an autonomy-supportive programme.

Introduction

Formal workplace training is one of the components of lifelong learning and skill development. For employees in low-skilled occupations, learning is often perceived as formal learning activity such as attending a training session (Kyndt et al., 2013). However, opportunities for such training are not equal for all employees and those in low-skilled occupations especially may be excluded, as the nature of these jobs requires minimal education and sometimes does not provide a conducive environment for learning (Payne, 2006). As employees in low-skilled occupations move up the ranks and take on supervisory roles, attaining leadership skills becomes important, yet nearly half of businesses promote supervisors based on their task performance rather than leadership or people management skills (Lawrence, 2013). Supervisors require leadership skills in order to contribute to better organisational performance (Pederson et al., 2013, Purcell and Hutchinson, 2006) but are rarely given formal training and feedback (Teague and Roche, 2012). A survey of the manufacturing sector indicated that this lack of people management skills is a particular problem in New Zealand, which was ranked only 14 out of the 17 countries (Green et al., 2011). The survey also indicated that manufacturing industries in New Zealand fare particularly badly with issues such as addressing poor performance, retaining high performers and promoting high performers. This further highlights the need for leadership skills training for supervisors.

According to self-determination theory (SDT), an autonomy-supportive supervisory style could result in better work performance, and it does so by

satisfying the basic needs of autonomy, competence and relatedness of employees (Deci et al., 2017). A recent meta-analysis by Slemp et al. (2018) has found that autonomy-supportive supervision contributes to employees' well-being and positive behaviours at work. Autonomy-supportive supervisory style not only benefits the recipients (employees) but also those who practise it (supervisors) by satisfying their basic psychological needs as well (Reeve and Cheon, 2014).

Autonomy-supportive supervisory style encompasses skills such as providing meaningful reasoning for a task, taking employees' perspective, minimising controlling language such as "should" or "must" and supporting employees to be self-determining (Su and Reeve, 2011). Organizational studies have shown that supervisors can be trained to adopt these skills (Deci et al., 1989, Hardré and Reeve, 2009), but autonomy-supportive training has not been tailored to the learning needs of supervisors in low-skilled occupations. In fact, based on the review of a leadership programme by Garavan et al. (2015), most leadership programmes have not yet been tailored to the needs of supervisors in low-skilled occupations in terms of length and delivery method.

This article will describe the process of designing a programme for supervisors in low-skilled occupations to develop their supervisory skills. It first reviews the learning experience and opportunity of those in low-skilled occupations: understanding their learning experience and opportunities is beneficial for working towards the "how-to" of training for low-skilled occupations. It will then outline the development of the training programme and materials, demonstrating their basis in theoretical and andragogical models. Finally, preliminary evaluation of the training is reported on, through conducting pilot training for supervisors in low-skilled occupations.

Learning experience and opportunity

The term "low-skilled" generally refers to occupations with entry requirements of high school education or less and a year of working experience or less (Maxwell, 2006). In New Zealand, employees in low-skilled occupations can be defined as those in Skill level 4 and 5, which generally requires the completion of secondary education, though in some cases formal education can be compensated by on-the-job training (Australian Bureau of Statistics, 2013). As most low-skilled occupations require minimal education and work experience, they are frequently populated by those who are in a transitionary period of attaining higher education or have stopped high school although; there are also some who do not complete high school (Kluve et al., 2012, Maxwell, 2006). On the other hand, the role of supervisors is commonly taken up by those who have moved up the ranks from shop floor to supervisory role (Lowe, 1993, Hales, 2005). Supervisors in low-skilled occupations can be said to have similar educational experience and attainment as employees in low-skilled occupations based on the proposition by Hales (2005) and Lowe (1993) about supervisors being promoted from shop floor position. Therefore, training materials developed for the supervisors will need to cater to their educational level and experience.

One of the main considerations for supervisors in low-skilled occupations is the way they perceive training. Many in low-skilled occupations are hesitant to undertake education or training either consciously or unconsciously as the idea of returning to a similar situation which reminds them of their past experience of fear and rejection (Maxwell, 2006, Illeris, 2006). While recognising their struggles, many in low-skilled occupations also acknowledged the importance of upskilling for job security (Illeris, 2006) and personal and professional improvement (Colin,

2012). Hence, there is a sense of needing and wanting training but also conscious or unconscious reluctance to engage in training due to past experiences. Their previous struggle with formal education also means that training programmes for supervisors in low-skilled occupations need to consider designing the content and using methods beyond theoretical and classroom teaching to encourage participation in training.

In addition, supervisors face the challenge of lack of time to participate in training during work hours (Colin, 2012). The expectations of managing machines that are constantly running and providing ongoing service mean that supervisors are expected to be present at their work station during working hours (Rainbird, 2000), hence limiting their opportunity for training that occurs during this time. It is challenging for those in low-skilled occupations to engage in continuous learning if it is not supported by organizations, due to training fees and time cost (Colin, 2012). Organizations tend to be more motivated in offering leadership skills training if they are able to see the value of the training. Therefore, training programmes based on SDT, which has demonstrated the value of autonomy-supportive supervisory style, provides the theoretical foundation for the training programme for supervisors in low-skilled occupations.

Apart from the teaching of skills, autonomy-supportive supervisory style training also involves an examination of supervisors' beliefs and the principles of employee motivation (Reeve, 2006). Therefore, training content needs to incorporate strategies for supervisors to examine the beliefs and principles of their supervisory style. SDT research on autonomy-supportive training, as well as Knowles et al. (2012) principles of adult learning, can be applied to the training programme to facilitate learning and application of an autonomy-supportive

supervisory style. The section below reviews both theories in the context of developing an autonomy-supportive training programme for supervisors in low-skilled occupations.

Continuous learning for supervisors in low-skilled occupations

SDT and autonomy-supportive style training

According to SDT, an autonomy-supportive style is not just beneficial as a supervisory style but it can also facilitate self-determined learners through the fulfilment of basic psychological needs (Ryan and Deci, 2017). Self-determined learners or autonomous learners are those who initiate, regulate and approve their own actions based on the awareness of their needs, values and goals and do not feel compel to learn based on external pressures such as from trainers or managers (Reeve et al., 2003). When learners are self-determined, they are more engaged in learning, which then results in higher achievement of learning outcomes (Froiland and Worrell, 2016). Therefore, autonomy-supportive training could aim to create an autonomy-supportive training environment, which will facilitate self-determined learners who would gain from the training.

The first autonomy-supportive training at work was conducted with managers of a large office machine corporation mainly through demonstrations, discussion and activities around three autonomy-supportive themes: (1) providing work-related choices to employees, (2) using non-controlling language to provide feedback, and (3) accepting and recognising employees' needs and feelings (Deci et al., 1989). Following that, another workplace autonomy-supportive training study was conducted with managers in a multinational organization (Hardré and Reeve, 2009). This training used a combination of lectures, discussions and take-home guides as the method of delivery and focused on four autonomy-supportive

themes: (1) nurturing employees' inner motivational resources, (2) relying on non-controlling language in communicating work standards and feedback, (3) providing rationales to communicate values of activities or procedures deemed uninteresting, and (4) acknowledging and accepting employees' negative affect when asked to perform difficult or unappealing tasks. Both the trainings resulted in managers using more autonomy-supportive skills and an increase in employees' trust and engagement in the organization.

The opposite of an autonomy-supportive style is the controlling supervisory style. The controlling supervisory style demands that employees adopt the supervisors' perspective, interrupts employees' thoughts, feelings or actions and puts pressure on employees to think, feel and behave in certain ways. Such practice of control and command is not uncommon in the lower-skilled occupations, especially in manufacturing industries (Ingvaldsen & Benders 2016), hence presenting a need to address the controlling supervisory style in the training. Hardré and Reeve (2009) recommended incorporating an awareness of the widespread nature of this controlling style into future autonomy-supportive training, encouraging learner to (1) become less controlling by being mindful of the reason they adopt a more controlling style and its consequences, (2) desire an autonomy-supportive supervisory style by helping them appreciate the benefit of it, and (3) learn how to practice autonomy-supportive practices.

Su and Reeve (2011) provided an additional guide on the design of autonomy-supportive training, by suggesting that trainers should: (1) conduct the training in only one or a few sessions for a moderate amount of time (i.e., within one to three hours), (2) offer follow-up activities or materials, (3) use a combination of instructional booklets and electronic media, (4) address pre-

training beliefs about perceived effectiveness of the controlling style, especially with learners who are experienced in their field of work, and (5) focus on learning the four autonomy-supportive behaviours, which are acknowledging negative affect, minimising the use of controlling language, providing a meaningful rationale, and nurturing inner motivational resources of employees.

Most of the recently reported autonomy-supportive trainings were conducted with higher-skilled occupations such as teachers or clinicians, and included theoretical teaching of autonomy-supportive and controlling styles. Although Su and Reeve (2011) mentioned that effective autonomy-supportive trainings focus on skills-based activities, many of these studies begin with an information session, where the instructor provides information about the theoretical background and strategy to autonomy-supportive behaviours. Discussions were normally incorporated into the training after the information session. This theoretical teaching of autonomy-supportive behaviour is unlikely to be appropriate for supervisors in low-skilled occupations. However, less is known about how to deliver the content to supervisors in low-skilled occupations in a way and in language they could relate to. Evidently, designing autonomy-supportive training for supervisors in low-skilled occupations requires support from other theoretical approaches such as andragogical principles to better cater to their training needs.

Andragogy principles

Knowles et al. (2012) suggest a few principles around adult learning which are crucial in understanding how adults learn best. These principles are: (1) adults need to understand the reason behind their learning: (2) adults need to be respected as self-directed individual learners; (3) adults accumulate experiences

which are rich learning resources to tap into, and these should be given due attention; (4) adults learn when they are ready to learn; (5) there should be a focus on learning which helps adults to deal with tasks and problems; and (6) adults respond to internal motivation (i.e., increased job satisfaction and self-esteem) better than external motivation (i.e., pay rise, promotion) in learning. These principles of adult learning form the andragogical model, which is the process in which learners obtain skills and knowledge through procedures and resources provided by the instructor throughout the learning process.

In the andragogical model, a programme is designed by involving the learners and other relevant parties. Designing a programme based on a specific theoretical approach might sound counterintuitive to the andragogy principles, as it is likely not possible to involve a learner unfamiliar with the topic in the planning process of the training material. However, Knowles et al. (2012) assert that the effective application of andragogical principles requires balancing and adaptation of the principles depending on the situation and learners' characteristics. In a training programme based on a theoretical approach, there is a certain degree of content being determined by the facilitator, as learners might not be familiar with the topic yet. But ultimately, the aim of teaching should be directed towards developing learners' autonomy where learners engage in setting goals and aim to achieve their learning standards. This is in line with SDT's aim to facilitate self-determination in learning. Therefore, the programme design should use a more self-directed training approach once the learners are familiar with the concept.

Though there are examples of andragogical principles being applied in management education (McCauley et al., 2017), such examples seem to be

lacking in organizational training, especially for low-skilled occupations. Knowles et al. (2012) provided a case example of a workplace literacy programme for those lacking in basic literacy skills, though they do not give detail of how andragogical principles were applied to the design of the programme. Nevertheless, researchers such as Forrest III and Peterson (2006) frequently call for the application of andragogy as opposed to pedagogy (a more teacher-directed approach to training) in management education. Therefore, this study answers the call by applying andragogical principles to design a supervisory skills development training program for supervisors in low-skilled occupations.

The core of andragogical principles is the view of adult learners as self-directed learners, and this principle is in line with the autonomy-supportive approach to training. According to Ryan and Deci (2017), autonomy-supportive teachers act based on the principle that training should support development from within and not focus on merely providing information to the learners. Since both approaches have a similar assumption about the self-directedness of adult learners, integration of the andragogical approach in autonomy-supportive training means that the programme design will largely comprise the use of supervisors' experience and reflective training activities as compared to the traditional pedagogical approach of "teach and tell." As SDT forms the content of autonomy-supportive training, both SDT and andragogical principles can be applied to facilitate learning for adult learners. The following section will describe this integrated process of developing autonomy-supportive training for supervisors in low-skilled occupations.

Design

Development of the autonomy-supportive training

Autonomy-supportive training (AST) for supervisors in low-skilled occupations was designed based on SDT and andragogical principles. While the andragogical principles are consistent with SDT, the integration of andragogical principles into autonomy-supportive training requires planning that is beyond intuitive incorporation of the principles. Knowles et al. (2012) proposed using the whole-part-whole (WPW) model to systematically design a training programme. In this model, a training programme is firstly introduced as a unifying concept through clarification of the objectives, purpose and rationale of learning that learners can relate to. It is also about preparing the learners through motivating them to learn the concepts and skills that will be introduced. This process represents the first "whole." The "part" represents the specific skills to be taught in the programme, and finally the programme design concludes with integrating the individual skills learned within the overall theme of the programme. Following the integration, the programme will aim to help learners transfer such skills to their workplace. The integration of individual skills learned and the transfer of skills to the workplace represent the final "whole" of this model. Table 1 outlines the parallel concepts within the SDT and andragogical model along with the integration of both approaches into the design of our AST.

---Insert Table 1 here ---

As other ASTs, such as those conducted with teachers, used language and style that the teachers were familiar with, this programme has also been contextualized by using language and style suitable for low-skilled occupations in New Zealand. Workplaces in New Zealand are less formal than in much of the

developed world (New Zealand Immigration, 2018). Therefore, AST uses colloquial language so that supervisors can relate to the training content and material. The programme design relies on discussion and use of relevant examples to facilitate learning, as such a method encourages learners to voice their perspective and learn from their experience. It is in line with both SDT and andragogical principles. The content is outlined below, in the order that AST is presented: preparing the learners, introducing autonomy-supportive skills, goal setting and peer support, and follow-up session.

Preparing the learners

The training programme begins by preparing the learners to learn about autonomy-supportive skills. According to the WPW model, this functions as the first part of the "whole" where the objectives, purpose and concept of the training is introduced to the learners. The andragogical principles also assert that adults need to first understand the reason for their learning, and they learn when they are ready to learn. Similarly, Reeve (2009) proposed that prior to learning autonomy-supportive skills, learners need to understand why they use the controlling approach, the consequences of it and appreciate the benefit of the autonomy-supportive style. In order to achieve this aim, participants were asked to reflect on the characteristics and consequences of having a good and bad boss to help them understand the consequences of having a bad boss and appreciate the benefit of having a good boss. The words "good boss" and "bad boss" were used to describe their managers, as participants were likely to be more familiar with the term good and bad instead of controlling and autonomy-supportive. The exercise is then used to bridge their experience with the learning objectives of AST. This helps learners

to understand the reason for their learning, which will heighten their awareness of the need to learn autonomy-supportive skills.

Introducing autonomy-supportive skills

Autonomy-supportive trainings which begin with an information session, tend to explain the theory behind autonomy-supportive skills, present the empirical benefit for autonomy-supportive teaching and finally explain autonomy-supportive strategies (Reeve and Cheon, 2014). This style of training is often associated with classroom learning in schools. As Illeris (2006) mentioned, school-like teaching would not be ideal for the low-skilled occupations due to their potentially estranged experience with school.

In this AST, the theoretical teaching was replaced by a presentation of relevant concrete examples of the four autonomy-supportive skills. The delivery of autonomy-supportive skills represents the "part" in the WPW model, where each autonomy-supportive skill along with examples of it was presented separately to the supervisors. The use of examples to demonstrate autonomy-supportive and controlling styles also means that supervisors can relate it to their real work experience, making it more relevant and less theoretical. Besides this, the examples demonstrated how autonomy-supportive skills can be practiced in their workplace.

For each autonomy-supportive skill, supervisors are given a short description of a scenario, followed by a continuum of responses through which they could approach the situation ranging from controlling to autonomy-supportive ways of handling the situation. Supervisors are encouraged to evaluate the responses and select what they perceive as autonomy-supportive and the reason they perceive the responses as autonomy-supportive. The reflection is

followed by a group discussion that allows the supervisors to evaluate their beliefs in terms of which supervisory style they found effective and why. Reeve (2009) found that identifying the reason supervisors use a controlling or autonomy-supportive style helps them to be mindful of their supervisory style and become less controlling.

Following the reflection and discussion of examples, supervisors were asked to consider what they might find difficult about using the autonomy-supportive approach so they can discuss strategies to adapt the skills to their workplace. Other autonomy-supportive trainings have also included helping learners identify barriers and discussing application of these skills to their workplace (Cheon and Reeve, 2015, Hardré and Reeve, 2009).

After the introduction of autonomy-supportive skills, supervisors were given the opportunity to apply and practice the skills. One of the important aspects of autonomy-supportive training is the opportunity to learn how to use the skills at their workplace (Su and Reeve, 2011). Supervisors are given an employee management scenario that they are likely to encounter in their role and were asked to discuss with each other the controlling, moderately autonomy-supportive and autonomy-supportive responses to the situation. The moderately autonomy-supportive option gives the supervisors the choice to move towards an autonomy-supportive supervisory style, especially for more controlling supervisors who might perceive changing from controlling to autonomy-supportive as unrealistic. Reeve (2009) mentioned that learners might resist the autonomy-supportive approach if they perceived it as unrealistic given the challenges they may face in their workplace.

Following the discussion, supervisors were encouraged to use either the scenario discussed or a more recent and relevant situation to practice the autonomy-supportive responses with each other. According to andragogical principles, adults are motivated to learn when the skills they are learning are helpful in solving their current problem. Apart from that, the practice session helps learners to familiarise themselves with the skills and build confidence in using them. Although this section introduced specific skills that are the "part," it also incorporates the second "whole" in the WPW model by encouraging supervisors to practice the overall autonomy-supportive skills in order to facilitate mastery of the skills.

Goal setting and peer support

The programme content ends with goal setting and sharing the goals with their peers for support and to encourage transfer of training to the workplace. It is also the continuation of the second "whole" from the practice session. Supervisors were encouraged to set their own goals in practicing an autonomy-supportive supervisory style at their workplace. Setting their own goal is in line with the andragogical principles of respecting the needs of self-directed learners. It also fulfils the autonomy need of supervisors, as they are given the opportunity to reflect on how they can apply autonomy-supportive supervisory style in their workplace. Finally, supervisors were encouraged to share their goals with their peers as a support in their use of autonomy-supportive skills. Participants who receive support from the organization, supervisors and peers and also participated in peer support networks reported a higher level of transfer in training knowledge and skills (Cromwell and Kolb, 2004, Wei Tian et al., 2016).

Follow-up session

A follow-up session was incorporated into the training programme, two weeks after the initial training. In the follow-up session, supervisors engaged in group discussions of their actual experience in practicing autonomy-supportive supervisory style. They were encouraged to discuss experiences, concerns and obstacles, and ways to improve the strategies of practicing an autonomy-supportive supervisory style. The discussion topics were adapted from the autonomy-supportive training by Cheon et al. (2012). AST moves from using prescribed content to discussion of experience and developing strategies for the autonomy-supportive supervisory style which suits their context. This section encourages greater autonomy in learning as supervisors discuss with each other the application of autonomy-supportive practices in their workplace.

Overall, the AST incorporates SDT and andragogical principles to develop a training programme tailored to the specific needs and requirements of supervisors in low-skilled occupations. The following section describes the process and findings of the preliminary evaluation of AST with the supervisors.

Methodology

Preliminary evaluation of AST

An invitation for supervisors to participate in and evaluate AST was extended to human resource personnel or general manager of manufacturing, hospitality and retail service organisations in New Zealand. Two organisations, one a manufacturing and the other a cleaning service responded with support for the study. The training sessions were held in each participating organisation and conducted by the first author. A total of 11 supervisors participated in the preliminary training, three from the manufacturing sector and eight from the

cleaning service industry. Participants were informed at the beginning that the training programme comprised part of a larger autonomy-supportive supervisory style study, and that their feedback about the training content and design would be used to guide improvements in the AST. Given the limited number of participants and in order to reassure participants that their responses would be anonymous, demographic information was not collected.

Kirkpatrick and Kirkpatrick (2006) assert the importance of evaluating the reaction of learners, as such evaluation provides valuable information about the programme for reporting to stakeholders, allows participants to offer suggestions about improvements, and helps to establish standards of performance for trainers in future programmes. While it is important to evaluate the learning (Level 2), behaviour (Level 3) and results (Level 4) of AST, the reaction evaluation plays an important role as the first step of evaluation in AST. This is because AST has been newly adapted for supervisors in low-skilled occupations, and feedback on how the programme is received by this category of learners will help to make improvements to AST prior to implementing more complex and time-consuming higher-level evaluations.

At the end of the session, a feedback form was distributed and collected the same day by the first author. An open-ended structured questionnaire consisting of seven open-ended questions was used to collect data, gauging learners' satisfaction with AST content in terms of relevance, ease of understanding, delivery method, the topic arrangement and its effectiveness in prompting supervisors to use the skills. Learners were encouraged to include written comments and suggestions so that the reasons for their reactions and what could be done to improve the programme would become known. Such evaluation

is in line with the andragogical principle of respecting adults as self-directed learners who understand their learning needs. It is also taking consideration of the supervisors' perspectives, which is one of the key principles of the autonomy-supportive training environment. An example of questions that asked about the content was: At the end of the workshop, do you think that the content is reasonably applicable to your workplace? Why?

Data were analysed using a structured approach to thematic analysis where conceptualising of themes are based on domains such as questions asked in the interview (Braun et al., 2019). Therefore, in this study, themes were determined, codes were identified, and results presented according to questions asked in the feedback form. In addition to the feedback collected from participants, the trainer engaged in critical reflection on the experience of conducting the training. The following sections report on these reflections and a detailed evaluation of the training.

Findings

Trainer's reflection

One of the key criteria for AST to be successful is providing an autonomy-supportive training environment to the learners. The facilitator involved in autonomy-supportive training needs to understand the autonomy-supportive style and the benefit of it to be able to not just deliver the content but practice what they intend to deliver in the training session. During the training session, the first author was able to use autonomy-supportive skills such as acknowledging and accepting negative affect of supervisors when supervisors shared their concerns and struggles in using autonomy-supportive skills with certain types of employees. The issues raised by the supervisors were reflected and opinions were

solicited from others in the group on how they would handle the issue in an autonomy-supportive style. Those who were not directly involved in the issues provided suggestions and feedback on the issues during the discussion. Such a facilitation method assumes that supervisors are self-directed learners, capable of finding solutions to their issues when given the resources, such as information on autonomy-supportive skills and an autonomy-supportive training environment.

Autonomy-supportive skills were delivered in discussion style through scenarios and examples as outlined in the design of AST. After each discussion, the rationale and benefit of using each skill were reiterated and explained to the supervisors. By providing a meaningful rationale of autonomy-supportive skills to the supervisors, it was easier for the supervisors to accept the autonomy-supportive message. Finally, it seems that many supervisors held strong controlling beliefs that employees need to be told what to do. Instead of using the controlling way to tell supervisors what they should do or avoid doing, discussion was used for supervisors to evaluate the effectiveness of their supervisory style. Following the discussion, a rationale of the detrimental effects of controlling practices and benefits of autonomy-supportive practices was provided for supervisors so they could consider the benefits of adopting an autonomy-supportive supervisory style and avoiding controlling practices. Through using autonomy-supportive skills in facilitating the training session, supervisors felt their opinion and experience matters. They were also able to discuss strategy using autonomy-supportive skills to find solutions to their current issues.

A challenge encountered in the programme design was getting supervisors to set goals to practice the autonomy-supportive supervisory style. The goal setting section was designed with some basic guides for supervisors to specify an

action they would take to practice the autonomy-supportive style as well as when and how they planned to execute it. Supervisors could decide on their own goal based on the guide provided in the booklet. As no example was given, supervisors struggled to specify actions related to the autonomy-supportive supervisory style. The supervisors were generally unfamiliar with goal setting method. However, when supervisors were given further guidance, such as an example, they were better able to grasp the idea of how to state details of an action plan as their goal. Following this, an example of autonomy-supportive supervisory style was added to the goal-setting section in the booklet as a reference for supervisors.

Evaluation outcomes and discussion

Out of the 11 supervisors, 10 felt the programme was reasonably applicable to their workplace, as it helped them to reflect and improve on their communication and relationship with the employees. One supervisor did not respond to the question.

Yes, it is applicable, because it makes everyone reflect and think about how they communicate with others (B3).

Yes, it helps to eliminate tension amongst staff (U8).

All 11 participants felt the content was delivered effectively through the use of relevant examples, discussions, scenarios and, practice sessions.

Used examples that we could relate to (B1).

Yes, discussion is a key component of delivering information allowing more people at understanding in a variety of perspectives (B2).

Most supervisors also felt that the training made them think about how to practice the autonomy-supportive supervisory style by using less negative and

more positive language, and a few supervisors mentioned it was a reminder for them to use a more autonomy-supportive approach.

It is a reminder of the value of supportive supervising (B2).

Use more positive words (U7).

In general, supervisors found the content and discussion questions easy to understand. However, there was a discussion question around what might "block" them from practicing an autonomy-supportive approach, which they felt needed clarification. They offered suggestions to change the word "block" to "stop." The participants also felt the topics were well-arranged, with some mentioning it was well-arranged because it is related to their workplace and others mentioning the arrangement of topics was from general to specific to their situation. The conclusion and future research in relation to AST will be discussed.

Conclusion and future research

This paper reports on the development of an autonomy-supportive training programme, which is theoretically grounded in SDT and delivered in a way that supervisors in low-skilled occupations can understand and relate to. SDT and andragogical principles were integrated systematically into the programme so that supervisors could learn autonomy-supportive skills through reflection, discussion of experience and practicing the skills with each other. Preliminary evaluation of AST with 11 supervisors found the programme was designed appropriately, easy to understand and relevant to their workplace. Participants found the method of delivery, which used examples, scenarios, discussions and practice sessions, was helpful in learning AST. To our knowledge, this is the first AST to integrate SDT with andragogical principles of adult learning to develop a much-needed training programme for supervisors in low-skilled occupations.

Although the preliminary evaluation consists of only reaction level responses from participants combined with the trainer's critical reflections, it provides the basis for making necessary improvements to AST. Further research is needed to assess AST at higher levels of evaluation in order to provide more information on how AST could change supervisory styles and its potential organizational outcomes. An experimental or quasi-experimental design could provide insight to the effect of AST on supervisors, employees and organisations. Future studies involving training of supervisors in low-skilled occupations should consider systematically integrating relevant and compatible theories as shown in this article as well as take into account the previous learning experiences to maximise learning.

In conclusion, the outcome of the preliminary evaluation does demonstrate that AST is appropriate for and can be used with supervisors in low-skilled occupations, opening up the benefits of an autonomy-supportive style to employees in these traditionally neglected roles.

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Table

Table 1 Application of SDT and andragogy principles about learners to AST.

SDT	Andragogy principles about adult learners	Activities in AST	Section in AST
• Increase learners desire for autonomy-supportive supervisory style and to become less controlling	• Need to understand the reason to learn • Learn when they are ready to learn	• Reflecting on the characteristics and consequences of good and bad bosses and linking this to learning objectives.	Preparing the learners
• Create awareness and address pre-training beliefs of learners • Learn how-to of autonomy-supportive supervisory style	• Use of prior experience in learning • Need learning which helps them to deal with a task and problem	• Give relevant examples of autonomy-supportive and controlling behaviours, • Reflection questions on effectiveness, challenges and application of autonomy-supportive style in supervisors' workplace, • Scenario discussion, • Practice session.	Autonomy-supportive skills
• Regard learners as self-directed individuals	• Intrinsically motivated to learn	• Goal setting • Discussing goals with peers for support.	Goal setting and peer support
• Create an autonomy-supportive learning environment for learners	• Need to be respected as self-directed learner	• Discussion of autonomy-supportive application and ways to adapt it to their workplaces.	Follow-up session

CHAPTER 4

STUDY TWO

Paper Title

Psychological autonomy and well-being of employees in low-skilled occupations.

Declaration

I developed the theoretical model for the paper. I took the whole responsibility for launching and completing the data collection. I was also responsible for data entry and screening and the initial statistical analysis for the paper which was done in SPSS and then mediation analysis via Process version 3.0. I wrote the first full draft of the paper. The theoretical contributions are my own. My chief supervisor (first co-author) provided feedback on the theoretical aspects of the paper and editing. My second supervisor (second co-author) provided feedback on the statistical aspects of the paper and editing. In general, I contributed 80% to this paper, and my two supervisors equally contributed 20% to it.

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Abstract

Psychological autonomy and the impact it has on employees' well-being has seldom been examined for those employed in low-skilled occupations. Using self-determination theory (SDT) as the theoretical grounding, this study aimed to investigate the relationship between supervisors' support for psychological autonomy and employee outcomes such as well-being, stress, and job performance, for those in low-skilled occupations. SDT proposes that the effect of supervisors' autonomy support is mediated through the satisfaction and frustration of employees' needs. Survey data were collected from 171 employees at four different organisations in New Zealand. Regression analysis indicated that supervisors' autonomy support was positively related to the satisfaction of employees' autonomy, competence and relatedness needs, and negatively related to frustration of employees' autonomy and relatedness needs. In addition, supervisors' autonomy support was related to job performance through competence and relatedness satisfaction and to well-being through autonomy satisfaction. Findings highlight the importance of supervisors' autonomy support for employees' well-being and job performance, giving organisations ways to improve well-being and job performance.

Keywords: low-skilled occupations, well-being, supervisors' autonomy support, autonomy

Psychological autonomy and well-being of employees in low-skilled occupations

Introduction

Autonomy at work has been shown to have positive effects on employees' well-being. For example, job autonomy, where an employee has control over the nature and type of task, has a positive relationship with employees' well-being (Boxall & Macky, 2014). Autonomy in scheduling or timing, where employees control the start and end of their working hours, is also positively related to well-being (Nijp, Beckers, Geurts, Tucker, & Kompier, 2012). While both job and time autonomy contribute to the well-being of employees, neither of these forms of autonomy are widespread in low-skilled occupations (Wheatley, 2017). Low-skilled occupations can be defined as occupations where work experience of up to a year is required with little or no formal education required to perform the tasks (Australian Bureau of Statistics, 2006). The nature of work in these occupations is typically characterised as highly routinised with fixed production or service hours, and therefore limited in job and time autonomy. These occupations can also be physically and psychologically demanding. Karasek and Theorell (1990) suggest that occupations such as assemblers and machine operators, where job-holders tend to work in isolated work stations, are found to have low control and social support, but are high in physical and psychological demands. Similarly, front-line hospitality occupations are also low in autonomy and high in demands (Walters & Raybould, 2007). According to Marmot (2005), those holding low-skilled jobs with less control tend to experience an increased level of alienation and boredom and a reduced level of social contact. Individuals working in these occupations are more prone to experience adverse outcomes, such as health and mental health

complaints, fatigue and low job satisfaction (de Jonge, Bosma, Peter, & Siegrist, 2000; Pelfrene et al., 2002).

This research generally supports the notion that high job demands and psychological strain generate negative well-being outcomes for both organisations and employees. The well-being of employees in low-skilled occupations is commonly investigated from the work system and design perspective, such as lean manufacturing practices (e.g., Cullinane, Bosak, Flood, & Demerouti, 2014) and has often neglected the individual psychological aspect within well-being. This study provides an understanding of the individual psychological process by investigating the role of psychological autonomy in the well-being of employees in low-skilled occupations, hence providing organisations with another means to improve their well-being. Using self-determination theory (SDT) as a framework, we discuss psychological autonomy, the autonomy-supportive environment and basic psychological needs.

Self-Determination Theory (SDT)

The core concept of SDT concerns the facilitation or hindering of human flourishing (Ryan & Deci, 2000a). The basic assumption of SDT is that humans are innately curious, active and desire social connection, and much of SDT research focusses on the social conditions that enhance or undermine an individual's capacity for psychological growth, wellness and engagement (Ryan & Deci, 2017). An individual's capacity for growth is grounded in two fundamental principles: firstly, the need for an environment that supports psychological autonomy and, secondly, the satisfaction of basic psychological needs. These are discussed below.

Autonomy

Autonomy is commonly seen as being synonymous with independence, having the ability to behave and think outside the bounds of societal conformity, and making decision based on personal judgement (Ryff & Keyes, 1995). This view of autonomy is consistent with a great deal of the organisational research on job and time autonomy, which suggests that autonomy is having the independence to decide how tasks can be completed and the flexibility to decide when to start and end work. In contrast, SDT defines autonomy as *inter*dependence. Deci and Ryan (2000) suggest that autonomy, in essence, is self-organisation and self-regulation, where one endorses one's own action while *finding coherence between the inner self in association with the external environment or conditions*. Drawing on SDT research in the workplace, Nie, Chua, Yeung, Ryan and Chan (2015) and Williams et al., (2014) found the experience of interdependent autonomy, measured as autonomous motivation, was facilitated by an autonomy-supportive environment.

Interdependent autonomy has a broader application to work than the view of independent autonomy, because employees are not independent of the organisation and its policies, but are commonly subjected to organisational standards which employees may not fully endorse. Moreover, employees in low-skilled occupations often follow a routine and are required to strictly adhere to procedure. Thus, they may find work less interesting (Morgeson & Humphrey, 2006) and, consequently, more challenging to engage autonomously at work. Therefore, interdependent autonomy, where employees willingly engage in an activity at work without having their values and goals undermined, while also being aware of the expectations and standards of the organisation, may be more

relevant to low-skilled occupations which lack job and time autonomy. The key to this willing engagement with organisational standards and activity at work is supervisors' autonomy support for the employees (Ryan & Deci, 2000a).

Supervisors' autonomy support (SAS)

Employees' autonomy can be supported by the supervisors who act as their first line of report. An autonomy-supportive supervisor tends to provide an explanation for a given task, be open to employees' points of view, encourage initiative-taking and minimise the use of punishment or external rewards to motivate or change behaviour (Slemp, Kern, Patrick, & Ryan, 2018). In summary, SAS is a supervisory style aimed at fostering a supportive and understanding climate within the supervisor–employee relationship.

However, SAS is also commonly associated with being permissive and providing minimal guidelines (Reeve, 2009), which may lead supervisors in highly routinised occupations to discount the practicality of SAS. Nevertheless, studies have shown that SAS is a supervisory style that promotes well-being (Deci et al., 2001) without neglecting order and guidelines (Jang, Reeve, & Deci, 2010). Therefore, in a routinised work environment, SAS can be demonstrated through providing the rationale for seemingly repetitive and meaningless tasks, acknowledging and accepting employees' views when issues arise, avoiding controlling language (e.g., should, must) when outlining guidelines and expectations, and providing personal development opportunities. Through SAS, employees' basic psychological needs are satisfied, leading to better well-being and benefitting the organisation through improved performance (Deci, Olafsen, & Ryan, 2017).

Autonomy support and needs satisfaction

SDT posits that the optimal functioning and well-being of an individual is dependent on the satisfaction of the three fundamental psychological needs – autonomy (self-regulating one's behaviour; achieving inner coherence with external demands and goals), competence (engaging in optimal challenges and mastery in the physical and social world) and relatedness (seeking attachment and desiring the feelings of security, belongingness and intimacy with others) (Deci & Vansteenkiste, 2004). Similarly, the satisfaction of employees' basic psychological needs is key to their well-being (Ryan & Deci, 2000b). As such, SAS aims to provide an environment allowing employees to make choices and take action to satisfy the need for autonomy, competence and relatedness (Ryan & Deci, 2017). While such relationships have been widely studied in various occupational groups (Gillet, Fouquereau, Huyghebaert, & Colombat, 2015), the effect of SAS specifically on employees in low-skilled occupations is not known. Based on previous findings that SAS is positively related to needs satisfaction, the following hypotheses are proposed for employees in low-skilled occupations:

H1a: SAS is positively related to autonomy need satisfaction.

H1b: SAS is positively related to competence need satisfaction.

H1c: SAS is positively related to relatedness need satisfaction.

Autonomy support and needs frustration

Needs, if frustrated or thwarted, will have a negative outcome on the person's well-being, which is likely to diminish the person's ability to function optimally (Deci & Vansteenkiste, 2004). Deci and Ryan (2000) suggested the lack of satisfaction of needs may reflect a lower state of well-being, but the active or constant frustration of needs may lead to a more negative outcome such as

anxiety, depressive symptoms and other maladaptive coping strategies. Needs satisfaction and frustration are negatively related to each other (Chen et al., 2015). However, they are not antithetical, as the antecedent and outcome of needs satisfaction and needs frustration tend to correlate, but they do so in the opposite direction (Vansteenkiste & Ryan, 2013). The effect of SAS on needs satisfaction has been widely studied, but the same could not be said about the effect of SAS on needs frustration. Although Vansteenkiste and Ryan (2013) suggest that SAS could prevent needs frustration, not many organisational studies have chosen to confirm this path, except for a few, such as those by Gillet, Fouquereau, Forest, Brunault and Colombat (2012), Gillet, Forest, Benabou and Bentein (2015) and Schultz, Ryan, Niemiec, Legate and Williams (2015). These studies found a negative relationship between SAS and needs frustration at work. However, needs frustration was analysed as a composite unit. Hence, how SAS is related to the frustration of each need is not known, and to our knowledge, no other prior research has informed about this relationship. Nevertheless, based on the findings that SAS is negatively related to needs frustration, the following hypotheses for employees in low-skilled occupations are proposed:

H2a: SAS is negatively related to autonomy need frustration.

H2b: SAS is negatively related to competence need frustration.

H2c: SAS is negatively related to relatedness need frustration.

Needs satisfaction and frustration as mediators

SAS has been found to have a significant positive relationship with the following: employees' tendencies to self-initiate and regulate (Baard, Deci, & Ryan, 2004); acceptance of organisational change (Gagné, Koestner, & Zuckerman, 2000); organisational identification, work satisfaction and job

performance (Gillet, Colombat, Michinov, Pronost, & Fouquereau, 2013); well-being and task engagement (Deci et al., 2001); and decreased burnout (Fernet, Guay, Senécal, & Austin, 2012***).*** A meta-analysis by Slemp et al., (2018) found a similar effect of SAS on well-being and needs satisfaction across individualistic and collectivistic cultures. Thus, they concluded that SAS universally supports employees' well-being. As SAS is commonly known to contribute to employees' well-being and a positive organisational outcome, we hypothesised the following specific outcomes for employees in low-skilled occupations:

H3a: SAS is positively related to job performance.

H3b: SAS is positively related to well-being.

H3c: SAS is negatively related to stress.

While SAS is related to positive organisational outcomes, it is often mediated by the satisfaction of needs (Baard et al., 2004; Deci et al., 2001). Employees whose needs are satisfied showed increased work performance in a banking firm (Baard et al., 2004), greater well-being and job satisfaction in a shoe factory (Ilardi, Leone, Kasser, & Ryan, 1993), reduced symptoms of anxiety and depression in Bulgaria where employees are dominated by a "top-down" management approach (Deci et al., 2001) and a higher level of organisational citizenship behaviour in New Zealand organisations (Roche & Haar, 2013). Other studies with Dutch-speaking employees also found needs satisfaction leads to better well-being (Van den Broeck, Vansteenkiste, De Witte, Soenens, & Lens, 2010) and lower stress (Van den Broeck, Vansteenkiste, De Witte, & Lens, 2008). SAS provides the environment in which needs may be satisfied, which leads to positive outcomes.

On the other hand, research suggests that when employees' needs are frustrated, this can lead to negative outcomes such as employees engaging in counterproductive behaviours: taking long breaks and turning up late to work (Van Den Broeck et al., 2014); experiencing burnout, high turnover intent, absenteeism (Schultz et al., 2015); psychological distress, psychosomatic complaints (Gillet et al., 2015; Trépanier, Forest, Fernet, & Austin, 2015); and higher levels of stress (Olafsen, Niemiec, Halvari, Deci, & Williams, 2017). Needs frustration also mediates between SAS and employee well-being and job satisfaction (Gillet et al., 2012). Although research examining needs frustration is growing, to our knowledge, no research has been conducted with low-skilled occupations.

Based on studies which found needs satisfaction and frustration as mediators between SAS and outcome variables, we hypothesise the following relationships:

H4a: The relationship between SAS and job performance, well-being and stress will be mediated by satisfaction of the need for autonomy.

H4b: The relationship between SAS and job performance, well-being and stress will be mediated by satisfaction of the need for competence.

H4c: The relationship between SAS and job performance, well-being and stress will be mediated by satisfaction of the need for relatedness.

H4d: The relationship between SAS and job performance, well-being and stress will be mediated by frustration of the need for autonomy.

H4e: The relationship between SAS and job performance, well-being and stress will be mediated by frustration of the need for competence.

H4f: The relationship between SAS and job performance, well-being and stress will be mediated by frustration of the need for relatedness.

High performance and well-being as well as lower levels of stress are not only good for the employees, but they are also indicators of a healthy organisational culture (Cooper & Cartwright, 1994; Grabovac & Mustajbegovic, 2015). This study aims to understand how needs satisfaction and frustration may mediate the relationship between supervisors' autonomy support and employees' well-being, job performance and stress, hence providing information on the antecedent and psychological process leading to positive outcomes.

Method

Participants and procedure

The data for this study were collected from employees in low-skilled occupations in New Zealand. Employees from three factories and one hotel participated in the study. The survey was distributed to the participants during a pre-arranged meeting. Arrangements were also made for the employees to return the completed survey forms via survey boxes placed in different locations (i.e., cafés and the clock-out machine area). The survey boxes were then collected by the lead researcher a week after the survey forms were distributed.

A total of 171 employees (out of 229) completed the survey with a response rate of 74.7 per cent. Of the 171 employees, 39 were from Organisation 1, 61 from Organisation 2, 28 from Organisation 3 and 43 were from Organisation 4. The majority of the participants were male (66.7 per cent), 28.7 per cent were female, and the remainder did not specify their gender. The mean age of the participants were 39.6 years (SD = 13.2). Most of the participants were factory

operators (74.9 per cent) while 25.1 per cent were from various services in the hotel industry (i.e., housekeeping, food and beverage, receptionist, etc.).

Measures

The questionnaire administered to the employees consisted of five different scales and all the measures were administered in English.

Supervisors' support for autonomy

Employee perceptions of supervisors' autonomy support (SAS) were assessed using the Work Climate Questionnaire (WCQ). The WCQ uses 15 items (e.g., *My manager listens to how I would like to do things*) and a 7-point response scale from *strongly agree* to *strongly disagree*. Baard et al. (2004) adapted the scale to the work context by changing the reference person to manager from Williams, Grow, Freedman, Ryan and Deci (1996) who used the survey with patients to assess the autonomy-supportiveness of their healthcare provider (α = .92) and Williams and Deci (1996) who used the survey with students to assess autonomy-supportiveness of their instructor (α = .96).

Basic psychological needs satisfaction and frustration

The needs satisfaction and frustration 24-item scale (BPNSF-W) was designed to measure the satisfaction and frustration of competence, relatedness and autonomy needs at work. The scale was initially developed by Chen et al. (2015) and was adapted to a work context by Schultz et al. (2015), with Cronbach's alpha of 0.90 for needs satisfaction and Cronbach's alpha of 0.88 for needs frustration. Participants responded to a series of items such as *"At work, I feel a sense of choice and freedom in the things I undertake"* for needs satisfaction and "I feel insecure about my abilities on my job" for needs frustration, using a 7-point scale ranging from 1 *totally disagree* to 7 *totally agree*.

Employees' well-being

The well-being of employees was measured using the WHO-5 Well-being Scale (WHO-5) and the Perceived Stress Scale (PSS-4). The WHO-5 scale was developed by the World Health Organization (WHO) from the WHO-10 and has been phrased to reflect subjective positive well-being. The scale consists of five items, where the participants rated their well-being with items such as *"I have felt cheerful and in good spirits at work"* on a scale of 0 *at no time* to 5 *all of the time* (Topp, Østergaard, Søndergaard, & Bech, 2015).

The Perceived Stress Scale (PSS-4) scale was used to measure the perceived stress of employees. The PSS-4 scale was a short version of the 14-item scale originally developed by Cohen, Kamarck and Mermelstein (1983). The Cronbach's alpha for the 4-item scale was 0.72. The items in the scale asked the participants to rate the items such as *"In the last month, how often have you felt that you were unable to control the important things in your life?"* from 0 *never* to 4 *very often*. In general, the greater the score, the higher the level of stress reported.

Job performance

The job performance scale was adapted from Abramis (1994), which characterised job performance into technical ($\alpha = 0.83$) and social performance ($\alpha = 0.76$), absenteeism and lateness. In this study, technical and social performance are used as a measure of job performance. The items in the scale included, *"In the past four weeks you worked, how well did you perform without mistakes?"* and participants rate it from 1 *very poorly*, to 5 *exceptionally well*. Self-rated job performance was chosen in consideration of the pressure the employees might feel

about their prospects in the organisation if supervisor- or organisational-rated job performance was used.

Results

Reliability and validity

Most scales demonstrated high reliability, ranging from .70 to .96. The reliability value for the scale measuring stress was relatively low ($\alpha = .57$) and the inter-item correlations were considerably weak (range from $r = .11$ to $r = .39$). Hence, the PSS-4 scale has been removed from further analysis.

Preliminary analysis

Correlations between the variables are presented in Table 1. From the correlation analysis, needs satisfaction (i.e., autonomy satisfaction) showed stronger correlations with well-being ($r = .58$, $p < .01$), while needs frustration (i.e., autonomy frustration) showed weaker correlations with well-being ($r = -.26$, $p < .01$).

Table 1 Means, Standard Deviations, and Correlations for Employees

	M	*SD*	1	2	3	4	5	6	7	8	9
1. SAS	5.1	1.2	*(.96)*								
2. Autonomy satisfaction	4.6	1.1	.48**	*(.75)*							
3. Competence satisfaction	5.8	.9	.29**	.46**	*(.70)*						
4. Relatedness satisfaction	5.0	1.1	.35**	.47**	.36**	*(.76)*					
5. Autonomy frustration	3.8	1.4	-.23**	-.19*	-.09	-.19*	*(.76)*				
6. Competence frustration	2.6	1.2	-.07	-.14	-.34**	-.16*	.51**	*(.78)*			
7. Relatedness frustration	3.2	1.2	-.26**	-.16	-.26**	-.35**	.51**	.58**	*(.77)*		
8. Job performance	4.0	.5	.16*	.24**	.40**	.41**	-.14	-.40**	-.32**	*(.82)*	
9. Well-being	3.2	1.1	.37**	.58**	.24**	.36**	-.26**	-.16*	-.08	.35**	*(.84)*

**$p < .01$, *$p < .05$; $n = 154$.
Note: Alpha reliabilities presented in italics on the diagonal

Regression analysis

SAS and needs satisfaction and frustration

A series of hierarchical regression analyses were run using SPSS version 24, to test the hypotheses of SAS as a predictor of autonomy, competence and relatedness needs satisfaction and frustration individually. The organisations, types of contract, and tenure of employment were first entered in the regression analysis as controls. In the second step, SAS was entered. Results of the regression analysis showed a significant positive relationship between SAS and the satisfaction of autonomy, relatedness, and competence needs, as shown in Table 2.

Table 2 Hierarchical regression analysis for SAS and autonomy, competence and relatedness needs satisfaction and frustration

	Autonomy satisfaction				Competence satisfaction				Relatedness satisfaction			
	β	*SE B*	R^2	ΔR^2	*B*	*SE B*	R^2	ΔR^2	*β*	*SE B*	R^2	ΔR^2
Step 1 (Control variables)												
Employment term	-.02	.08			.03	.06			.02	.08		
Org 1[a]	-.15	.25			-.02	.18			-.29**	.24		
Org 2[b]	-.14	.25			-.23*	.18			-.39**	.24		
Org 3[c]	-.12	.28			-.02	.20			-.16	.27		
Fulltime & Part-time	-.18	.23			-.11	.17			-.14	.22		
Fulltime & Fixed term	-.24	.27			-.18	.20			-.21*	.26		
Fulltime & Others	.02	.32			-.03	.23			-.08	.31		
Model summary			.08				.05				.11*	
Step 2												
Employment term	-.03	.07			.06	.06			.05	.07		
Org 1[a]	-.14	.23			.00	.18			-.26**	.23		
Org 2[b]	-.08	.23			-.20	.17			-.36**	.23		
Org 3[c]	-.08	.25			.01	.19			-.13	.25		
Fulltime & Part-time	-.15	.21			-.06	.16			-.07	.21		
Fulltime & Fixed term	-.17	.25			-.12	.19			-.14	.24		
Fulltime & Others	.01	.29			-.04	.22			-.09	.29		
SAS	.44**	.07			.31**	.05			.36**	.07		
Model summary			.26**	.18**			.14**	.09**			.23**	.12**

Note: *N = 162;* $^{**}p < .01$, $^{*}p < .05$. [a]Org 4 vs Org 1; [b]Org 4 vs Org 2; [c]Org 4 vs Org 3

Table 2 continued

	Autonomy frustration				Competence frustration				Relatedness frustration			
	β	*SE B*	R^2	ΔR^2	*B*	*SE B*	R^2	ΔR^2	*β*	*SE B*	R^2	ΔR^2
Step 1 (Control variables)												
Employment term	.07	.10			-.02	.09			.07	.09		
Org 1[a]	-.12	.30			-.23	.29			-.30**	.29		
Org 2[b]	.01	.30			-.04	.29			-.05	.29		
Org 3[c]	-.07	.33			-.17	.31			-.21*	.31		
Fulltime & Part-time	.22*	.28			.12	.26			.05	.26		
Fulltime & Fixed term	-.01	.32			-.03	.31			-.01	.30		
Fulltime & Others	.14	.38			.06	.37			.06	.36		
Model summary			.06				.07				.10*	
Step 2												
Employment term	.06	.10			-.02	.09			.05	.09		
Org 1[a]	-.14	.30			-.23*	.29			-.31**	.28		
Org 2[b]	-.01	.30			-.05	.29			-.07	.28		
Org 3[c]	-.08	.33			-.17	.32			-.23*	.30		
Fulltime & Part-time	.18	.27			.12	.27			.01	.26		
Fulltime & Fixed term	-.05	.32			-.03	.31			-.05	.30		
Fulltime & Others	.14	.38			.06	.37			.07	.35		
SAS	-.17*	.09			-.03	.09			-.23**	.08		
Model summary			.09*	.03*			.07	.00			.15**	.05**

Note: *N = 162;* $^{**}p < .01$, $^{*}p < .05$. [a]Org 4 vs Org 1; [b]Org 4 vs Org 2; [c]Org 4 vs Org 3

Hypotheses 1a, 1b and 1c are supported. SAS also predicted reduced frustration of relatedness and autonomy needs, but not competence need. Hypotheses 2a and 2c are supported, but not 2b. Generally, SAS accounted for greater variance in needs satisfaction (*R2* of .09 to .18) than in needs frustration (*R2* of .03 to .05).

Multiple mediation analysis

According to Preacher and Hayes (2008), a multiple mediation analysis is an appropriate analysis for multiple potential mediators, which, in this study, are autonomy, competence and relatedness needs satisfaction and frustration. Based on the recommendation by Van den Broeck, Ferris, Chang and Rosen (2016), individual needs should be analysed separately to test the unique effect of each need on the outcome variables. Therefore, the relationship between SAS and the outcome variables were first tested. Following this, autonomy, competence and relatedness satisfaction and frustration were tested as mediators of the relationship between outcome variables and SAS. Analyses were conducted using SPSS version 24, Process version 3.0. The coefficients and confidence intervals for the outcome variables based on 10,000 bootstrap samples are presented in Table 3 and 4.

Table 3 Summary of mediation analysis with SAS as predictor, needs satisfaction as mediators and outcome variables

	Outcome							
	Job performance [a]				Well-being [b]			
			95% CI				95% CI	
Predictors	*Coeff*	*SE B*	*LL*	*UL*	*Coeff*	*SE B*	*LL*	*UL*
SAS	.08*	.03	.01	.05	.35**	.06	.22	.47
Autonomy satisfaction	-.02	.04	-.10	.06	.46**	.08	.31	.61
Competence satisfaction	.26**	.05	.16	.36	-.04	.10	-.23	.15
Relatedness satisfaction	.15**	.04	.08	.23	.10	.10	-.05	.24
Model R^2	.30**				.36**			
SAS								
Total effect	.08*	.03	.01	.15	.35**	.06	.22	.47
Direct effect	-.02	.03	-.08	.05	.12	.07	-.01	.25
Total indirect effect	.10*	.03	.05	.15	.23*	.05	.15	.33
Indirect effect via								
(A) Autonomy satisfaction	-.01	.02	-.04	.03	.21*	.05	.13	.31
(B) Competence satisfaction	.06*	.02	.02	.10	-.01	.03	-.06	.04
(C) Relatedness satisfaction	.05*	.02	.02	.09	.03	.03	-.03	.10

Note: [a] $N = 165$; [b] $N = 165$. ** $p < .01$, * $p < .05$. CI = Confidence intervals based on bias-corrected $k = 10{,}000$ bootstrap samples, *LL* lower limit, *UL* upper limit.

Table 4 Summary of mediation analysis with SAS as predictor, needs frustration as mediators, and outcome variables

	Outcome							
	Job performance [a]				Well-being [b]			
			95% CI				95% CI	
Predictors	*Coeff*	*SE B*	*LL*	*UL*	*Coeff*	*SE B*	*LL*	*UL*
SAS	.08*	.03	.01	.15	. 35**	.06	.22	.47
Autonomy frustration	.08*	.04	.01	.15	-.16*	.07	-.30	-.02
Competence frustration	-.17**	.04	-.25	-.09	-.13	.08	-.29	.04
Relatedness frustration	-.05	.04	-.13	.03	.18*	.08	.02	.34
Model R^2	.19**				.21**			
SAS								
Total effect	.08*	.03	.01	.15	.35**	.06	.22	.47
Direct effect	.08*	.03	.01	.14	.35**	.07	.23	.48
Total indirect effect	.00	.02	-.03	.04	.22	-.01	.03	-.06
Indirect effect via								
(A) Autonomy frustration	-.01	.01	-.04	.00	.03	.02	-.00	.08
(B) Competence frustration	.00	.01	-.02	.04	.01	.01	-.01	.04
(C) Relatedness frustration	.01	.01	-.01	.04	-.04*	.03	-.11	-.00

Note: [a] $N = 165$; [b] $N = 165$. ** $p < .01$, * $p < .05$. CI = Confidence intervals based on bias-corrected $k = 10{,}000$ bootstrap samples, *LL* lower limit, *UL* upper limit.

SAS and outcome variables

The main effect analyses showed SAS was significantly related to job performance ($\beta = .08$, $p < .05$) and well-being ($\beta = .35$, $p < .01$). Therefore, hypotheses 3a and 3b are supported. Following the significant main effect results, mediation analyses were conducted.

Needs satisfaction as mediators

The mediation analysis showed a significant relationship between SAS and job performance through competence and relatedness satisfaction only. Hence, hypotheses 4b and 4c are supported for job performance only. Autonomy satisfaction mediates the relationship between SAS and well-being, with an effect size of .21. Therefore, hypothesis 4a is supported only for well-being. Competence and relatedness satisfaction mediate SAS and job performance while autonomy satisfaction mediates SAS and well-being. The mediation model provides a better explanation of the relationship between SAS and job performance and well-being than the direct relationship between SAS and job performance and well-being.

Needs frustration as mediators

The total direct effects between SAS and job performance and well-being were significant, while the indirect effect through needs frustration were not significant. Therefore, the mediation hypotheses between SAS and the outcome variables through needs frustration were not supported. This relationship can possibly be influenced by SAS contributing to less variance in needs frustration, as demonstrated in the second set of hypotheses and the mixed results between needs frustration and outcome variables.

Discussion

This study investigated (1) the relationship between supervisors' autonomy support and the satisfaction or frustration of employees' autonomy, competence, and relatedness needs, and (2) the relationship between supervisors' autonomy support and organisational outcomes mediated through needs satisfaction and frustration. The results showed that autonomy support is uniquely related to satisfaction and frustration of each of the three needs satisfaction, as demonstrated by different effect sizes. Although SAS predicts autonomy and relatedness frustration, it does so to a lesser degree than needs satisfaction. These findings are consistent with Bartholomew, Ntoumanis, Ryan, Bosch and Thøgersen-Ntoumani (2011) and Gillet et al. (2012), who found autonomy support relates to needs satisfaction to a greater degree than needs frustration. The findings suggest SAS functions to increase positive resources rather than preventing needs frustration of employees in low-skilled occupations. Therefore, if employees continuously operate under a controlling management style that is rigid, prescriptive and frequently uses punishment as a corrective method (Ryan & Deci, 2017), SAS may not be able to prevent employees' needs from being frustrated.

It was hypothesised that the satisfaction of needs through SAS would lead to better job performance and well-being. Competence and relatedness satisfaction mediate job performance, while only autonomy satisfaction mediates well-being. Mixed results were found, suggesting that each need uniquely mediates the relationship between SAS and the outcome variables, hence reinforcing the requirement to examine each need individually (Van den Broeck et al., 2016). On the other hand, the results do not imply that needs that did not mediate the

relationship between SAS and job performance and well-being should be ignored, as needs satisfaction varies daily and with different activities (Reis, Sheldon, Gable, Roscoe, & Ryan, 2000). Future studies focussing on activities and daily variation might be able to provide insight into the role of each need in employees' well-being. However, what we can infer through this study is that, despite limitation in job and time autonomy, psychological autonomy plays an important role in the well-being of employees in low-skilled occupations.

On the other hand, needs frustration does not mediate SAS and job performance and well-being. This result contrasts with that of Gillet et al. (2012), who found that needs frustration mediates SAS and organisational outcomes such as job satisfaction, happiness and self-realisation. In their study, needs frustration was investigated as an overall index while, in this study, needs frustration was analysed separately as three mediators. This difference in the analysis might influence the mediation effect. In addition, the evidence of needs frustration as a mediator between controlling and negative outcomes is stronger than needs frustration as a mediator between autonomy-support and positive outcomes. For example, Vander Elst, Van Den Broeck, De Witte and De Cuyper (2012) found that needs frustration mediates the relationship between job insecurity and emotional exhaustion and vigour. Needs frustration also mediates the relationship between workplace bullying and burnout (Trépanier, Fernet, & Austin, 2015). Our study suggests that, although SAS can prevent autonomy and relatedness frustration to a certain degree, it is not sufficient to impact job performance and well-being of employees in low-skilled occupations.

Finally, the PSS-4 scale demonstrated low reliability and was removed from further analysis. The scale chosen for this study, consisting of two positively

and two negatively worded items, might appear confusing to the participants in low-skilled occupations who might not be used to filling in surveys. Since the scale has not been used extensively with people in low-skilled occupations, it may be that a brief stress scale for our participants might not be the best measure, especially when the scale has both positive and negative items. Therefore, studies with low-skilled occupations in the future should consider using the 10-item stress scale, which is a two-factor model, instead of the more popular single-factor model (Taylor, 2015).

Limitations and future research

There are a few limitations in this study to take note of when interpreting the results and considering directions for future research. First of all, the data collected was cross-sectional. Though no single factor emerged after performing Harman's one-factor test, we do not deny that cross-sectional data is still subject to other common method biases (Podsakoff, Mackenzie, Lee, & Podsakoff, 2003). Moreover, cross-sectional data cannot conclude causality. Future organisational studies can consider using longitudinal or experimental methods to establish the relationship between SAS and employees' well-being through needs satisfaction and needs frustration.

Secondly, the relatively weak effect sizes of SAS on job performance through needs satisfaction suggest that future studies should include types of motivation as potential mediators (Deci et al., 2017). Moreover, since only SAS was investigated as a predictor, researchers might also want to include supervisors' controlling behaviour in relation to needs frustration and organisational outcomes. Bartholomew et al. (2011) suggested needs frustration has different antecedents and predicted outcomes. Therefore, future studies could

measure controlling behaviours that might lead to needs frustration and negative outcomes to gain better understanding of the predictors as well as the outcomes of needs frustration.

Finally, research with low-skilled occupations posed some unique challenges, such as lower literacy skills, leading to the possibility of participants misunderstanding certain items in the questionnaire. Moreover, as employees in low-skilled occupations work with machines or in service areas that run continuously and under tight schedules, it can be challenging to motivate them to participate in the study as they are unable to move away from their work station, and they might not see the benefit of participating in a study. Because of this, the sample size of this study, although sufficient, is limited.

However, these limitations should encourage rather than discourage researchers to study low-skilled occupations, as they present unique contexts for the application of SDT. Future studies could pay closer attention to simplifying the items in the questionnaire and providing literacy support to the participants. In addition, researchers could attempt to gain support from management prior to the study so employees are able to take time away from their work station to participate in the study. This could both increase the participation rate and also convey organisational commitment to improving employee well-being.

Practical implication and conclusion

Following the results of this study, we offer a practical suggestion that might improve well-being and job performance of employees in low-skilled jobs. Our findings suggest that for employees in low-skilled occupations where job and time autonomy are limited, supervisors' support for psychological autonomy plays an important role in the satisfaction of autonomy, competence and relatedness

needs, which, in turn, leads to better job performance and employee well-being. Organisations should consider encouraging supervisors to practise an autonomy-supportive interaction style with employees. One of the ways to increase autonomy supporting interaction is through training supervisors in autonomy-supportive behaviours. Autonomy-supportive skills training includes providing a meaningful rationale when assigning a task, accepting rather than correcting employees' views when assigning tasks that are not of employees' interest, using informational rather than punitive language in correcting behaviour, and providing opportunities for development, learning and interactions at work. Studies have shown that autonomy-supportive training with managers, coaches, health practitioners and teachers resulted in more autonomy-supportive interactions with their employees, athletes, patients and students (Su & Reeve, 2011). Therefore, investing in such training could provide great benefit to the employees and organisation.

In conclusion, this study has provided insight into the relationship between supervisors' autonomy support and organisational outcomes (job performance, well-being and stress). While the relationship between supervisors' autonomy support and job performance and well-being was mediated by needs satisfaction, there is no evidence that needs frustration mediates the same relationships. In conclusion, supervisors' autonomy support plays an important role in the satisfaction of needs and improvement of job performance and well-being.

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CHAPTER 5

STUDY THREE

Paper Title

Training and maintaining autonomy-supportive supervisory style in low-skilled occupations.

Declaration

I developed the theoretical model for the paper. I took the whole responsibility for launching and completing the data collection. I was also responsible for data entry and screening and for the statistical analysis for the paper which was done in SPSS. I transcribed the focus groups and interview data and was responsible for the initial qualitative data analysis. I wrote the first full draft of the paper. The theoretical contributions are my own. My chief supervisor (first co-author) provided feedback on the theoretical aspects and qualitative analysis of the paper and editing. My second supervisor (second co-author) provided feedback on the quantitative and qualitative analysis of the paper and editing. In general, I contributed 80% to this paper, and my two supervisors equally contributed 20% to it.

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The following paper follows the layout, referencing, and language required by the journal editors.

Abstract

According to self-determination theory, employees' well-being is related to the autonomy-supportive style of a supervisor. However, the effect of supervision style on well-being remains under-studied in low-skilled occupations. This study employed a mixed-method, multi-level approach to examine the impact of autonomy-supportive training (AST) on supervisors and employees and to identify factors contributing to the maintenance of supervisors' autonomy-support (SAS). The quantitative phase evaluated the effect of AST on supervisory style and employees' well-being, with a sample of 44 supervisors and 240 employees in New Zealand. The qualitative phase used focus groups and interview with 15 supervisors to explore factors that could influence the maintenance of SAS. Overall, supervisors can be trained to adopt an autonomy-supportive style, but these skills can also be diluted by organisational factors such as pressures and managerial behaviour. This study contributes to autonomy-supportive style research in order to account for factors affecting the maintenance of SAS in low-skilled occupations.

Keywords: Training and development, leadership development, mixed methods, organisational climate, wellbeing and psychosocial risk factors.

Training and maintaining autonomy-supportive supervisory style in low-skilled occupations.

Introduction

Employees in traditionally low-skilled industries such as manufacturing and some service sectors, contribute substantially to the economy and represent a significant proportion of the workforce. In New Zealand, the manufacturing industry employs up to 11% of the workforce and is responsible for 12% of the economy while service industries such as accommodation, restaurants and retail contribute another 9% (Ministry of Business Innovation & Employment, 2018). In the United States, the manufacturing industry hired 54,000 more employees in 2018 compared to 2017, and the accommodation and food services industry hired 66,000 more employees in the same time period (U.S. Department of Labor, 2018). Despite their contribution to the economy and employment, the well-being of those in low-skilled occupations has often been neglected (Busch, Staar, Åborg, Roscher, & Ducki, 2010).

Studies have shown that a well-designed job (e.g., high job autonomy, skill and task variety) and supervisors' autonomy support (SAS) contribute to employees' well-being (Güntert, 2015). While high job autonomy is consistently low among employees in low-skilled occupations (Wheatley, 2017), SAS, which enhances another facet of autonomy–psychological autonomy (Baard, Deci, & Ryan, 2004; Ilardi, Leone, Kasser, & Ryan, 1993) may be a viable alternative to enhancing well-being in these jobs.

Psychological autonomy, a basic need as proposed by self-determination theory (SDT), is the need for an individual to make a rational choice and to act volitionally while being mindful of self and others' needs and demands (Chirkov,

2011). It is not independent of others, but employees make volitional decisions within the demands and needs of self and others. Autonomy along with competence and relatedness are basic needs, which when satisfied, lead to well-being (Deci et al., 2001). Supervisors are imperative in facilitating this path to well-being, as employees report to them.

Supervisors' support in low-skilled occupations tends to be a major predictor of employees' well-being (Ariza-Montes, Arjona-Fuentes, Han, & Law, 2018; Winkler, Busch, Clasen, & Vowinkel, 2015). Nevertheless, SAS is distinct from supervisors' support, as SAS specifically enhances employees' sense of autonomy through autonomy-supportive behaviours, therefore giving a more precise indicator of the type of supervision which contributes to the well-being of employees in low-skilled occupations.

Winkler et al. (2015) called for future studies to train supervisors in low-skilled occupations on being supportive to improve employees' well-being. Relatedly, autonomy-supportive training studies have shown the positive effect of the training on supervisors and employees' well-being (Deci, Connell, & Ryan, 1989; Hardré & Reeve, 2009). However, despite this success in higher-skilled occupations, training has yet to be conducted and the effect studied extensively in low-skilled occupations. By employing a mixed-method approach, this study aims to (1) quantitatively evaluate the outcome of autonomy-supportive training designed for supervisors in low-skilled occupations, and (2) qualitatively explore the factors that could influence the maintenance of supervisors' supervisory style.

Supervisors' autonomy support (SAS)

SAS is a supervisory style which satisfies employees' autonomy, competence (sense of effectiveness in engaging with work activities), and

relatedness needs (connectedness between oneself and colleagues at work), leading to autonomous motivation and to well-being (Güntert, 2015; Oostlander, Güntert, & Wehner, 2014; Slemp, Kern, Patrick, & Ryan, 2018). Its opposite is the controlling style, where supervisors pressure the employees to behave in the supervisors' preferred way, leading to a lack of felt autonomy (Deci & Ryan, 1985). While SAS satisfies needs, a controlling supervisory style tends to frustrate needs (Bartholomew, Ntoumanis, Ryan, Bosch, & Thøgersen-Ntoumani, 2011). Studies of SAS have identified four autonomy-supportive behaviours: (1) providing meaningful reasoning to help employees understand the task's value; (2) acknowledging employees' negative feeling when making an unappealing or difficult request and listening to employee's suggestions; (3) using informational language to communicate work requirements or feedback; and (4) nurturing inner motivational resources by allowing employees to outline their work processes, giving time for interaction with colleagues, applying adequate challenge to generate interest, and considering employees' personal and professional development (Deci et al., 1989; Deci, Eghrari, Patrick, & Leone, 1994; Hardré & Reeve, 2009).

The challenge with SAS in low-skilled occupations is that it be perceived as being permissive or not providing direction (Reeve, 2009), hence leading to the idea whereby detailing of work processes and guidelines should be avoided to be autonomy-supportive. Detailing work processes and guidelines are characteristics of low-skilled occupations due to the heavy influence of Taylorism (Taylor, 1911). However, according to Jang, Reeve, and Deci (2010), being autonomy-supportive is different from being permissive. They found that in a classroom, autonomy support correlated positively with communicating expectations,

offering guidance, and constructive feedback. The key to autonomy-supportive supervision is in conveying work processes and guidelines by listening to and accepting employees' points of view, discussing corrective action and encouraging initiatives. Essentially, SAS is an applicable supervision style even in a routine and low job autonomy environment.

Autonomy-supportive training (AST)

Supervisors develop their supervisory style partly as a result of their traits and factors within their psychosocial environment (Olesen, 2011). As supervisory style can be influenced by factors external to their traits, it is possible to train supervisors to adopt an autonomy-supportive supervisory style. AST has been conducted with various target participants, such as teachers (Cheon, Moon, & Reeve, 2012; Cheon & Reeve, 2015; Reeve & Cheon, 2014), coaches (Langan, Blake, Toner, & Lonsdale, 2015), healthcare professionals (Lonsdale et al., 2017; Murray et al., 2015) and parents (Joussemet, Mageau, & Koestner, 2014).

AST with teachers has shown that the training increased students' perception of teachers' autonomy support, enhanced need satisfaction and academic achievement (Cheon et al., 2012), decreased need frustration and burnout for students, and enhanced teachers' well-being when they practised autonomy-supportive teaching styles (Cheon, Reeve, Yu, & Jang, 2014). AST with managers, in particular, was found to increase work engagement and satisfaction among employees when supervisors practise a more autonomy-supportive style (Deci et al., 1989; Hardré & Reeve, 2009). Therefore, supervisors trained in autonomy-supportive behaviours may be viewed by employees as more supportive, leading to enhanced need satisfaction, prevention of need frustration and other positive organisational outcomes in employees.

Studies have shown that AST can be used to equip supervisors with autonomy-supportive skills, but the maintenance of skills learned after training is vital for maximising the benefit of such training. The next section reviews the conditions that might affect the maintenance of SAS.

Maintaining SAS

While training is useful to inform and encourage SAS, the maintenance of SAS requires more than a training session. Grossman and Salas (2011) mentioned that even the best of all training designs would have no effect if the work environment does not support the use of skills learned in the training session. According to Stenling and Tafvelin (2016), an organisational autonomy-supportive climate predicted the application and integration of new autonomy-supportive knowledge and skills one year after they were learned in training. An organisational autonomy-supportive climate includes perceived support from the immediate manager of supervisors (Chiaburu, Van Dam, & Hutchins, 2010). The term "manager" in this article, refers to someone whom the supervisors report to. Other studies suggest wider organisational factors such as pressure could potentially affect supervisory style. For example, supervisors who experience high pressure tend to become less autonomy-supportive (Pelletier, Séguin-Lévesque, & Legault, 2002) and teachers who experience pressure from multiple sources including from their superior also tend to adopt a more controlling style (Deci, Speigel, & Ryan, 1982; Reeve, 2009).

Similarly, organisational and personal factors can affect employees' perception of SAS and in turn undermine the effect of training. Studies have suggested organisational factors, such as pay, benefits, job security, the climate of tension and interactions within the organisation (Deci et al., 1989; Hitt, Beamish,

Jackson, & Mathieu, 2007), have influence over employees' perception of SAS. Furthermore, employees who exhibit autonomous motivation may view their supervisors as more autonomy-supportive, while employees who exhibit controlled motivation may view their supervisors as less autonomy-supportive (Beenen, Pichler, & Levy, 2017).

To summarise, supervisors and employees can each provide different perspectives on various factors influencing the training effect. However, this study focuses on exploring factors affecting the maintenance of SAS from the supervisors' perspective for three reasons. Firstly, Ryan and Deci (2017) suggest that interpersonal climate demonstrated by supervisors can influence employees' perception of support or control. Moreover, students perceived their teachers as more autonomy-supportive and experienced greater need satisfaction when teachers use more autonomy-supportive behaviours (Cheon et al., 2012). Clearly, SAS is part of the climate that positively impacts employees' perception of SAS and need satisfaction. Therefore, by maintaining SAS, employees can experience the positive effect of SAS on their well-being.

Secondly, many of the factors that could affect the maintenance of SAS are within the control of the organisation, either in the form of policy or culture, as discussed above. Studying the maintenance of SAS provides organisations with "actionable" areas (Colquitt & George, 2011) to support the ongoing practice of SAS, which in turn advances the well-being of employees in low-skilled occupations.

Finally, Baldwin, Ford, and Blume (2017) suggested researchers should understand trainees' contexts (e.g., organisational environment) to optimise the application of skills after training. Therefore, understanding organisational factors

affecting SAS can guide organisations and researchers to design training that may result in the ongoing application of SAS in low-skilled occupations. Thus, this study focuses on exploring factors that could affect the maintenance of SAS.

Research questions

In summary, despite its potential to improve well-being for low-skilled workers, the effectiveness of AST for supervisors remains untested. In addition, how organisational factors affect the maintenance of SAS is underexplored in low-skilled occupations. To address these gaps, this study aimed to answer three questions: (1) Does AST increase SAS among supervisors? (2) Does AST increase employees' perception of SAS and need satisfaction, and reduce need frustration? and (3) How do organisational factors influence the maintenance of SAS?

In line with these research questions, for the quantitative phase, we hypothesised that (1) AST increases SAS and (2) AST increases employees' perceived SAS and need satisfaction, and decreases employees' need frustration.

Method

This study used a mixed-method approach with expansion as the intent (Greene, Caracelli, & Graham, 1989). This approach strives to understand a range of different components relevant to the topic by employing different methods to study them. The quantitative phase aims to model change in supervisory style, and employees' perception of SAS, need satisfaction and frustration across time, by implementing and evaluating AST using a quasi-experimental design with intervention and waitlist control group. The qualitative phase aims to explain the factors that might influence the maintenance of SAS using focus groups and interview methods.

Quantitative phase

Participants

A total of 44 supervisors and 240 employees from three factories (packaging and food industries) and a 4-star international hotel chain in New Zealand participated in the study. All these organisations were selected as they shared the similarities of following routine work processes and hierarchical management style. Sixteen of the supervisors were assigned to the intervention group, while 28 were in the waitlist control group. Among the supervisors, 75% were male, 22.7% were female and 2.3% did not specify their gender, while 59.1% were supervisors of factory operators and 40.9% were supervisors of various service occupations. On average, the supervisors had worked in their organisations for 10 years (SD = 8.3) and been in a supervisory role for 5.7 years (SD = 6.4). It is important to note here that supervisors' direct reports varied due to shift patterns. Because of this, supervisors had between 1 and 42 employees completing surveys about them, with an average of 14 responses per supervisor.

Of the 240 employees, 43.2% of the employees had supervisors who were assigned to the intervention group, while 56.8% of the employees had supervisors who were assigned to the control group. The mean age of the employee participants was 37.7 (SD = 13.3). Most of the employee participants were male (64.6%), 28.8% were female, and 6.7% did not specify their gender. While 72.9% of the employee participants worked as factory operators across various industries, 27.1% of employee participants worked in various service occupations (e.g., housekeeping and frontline service).

Procedure

The quantitative phase adopted a quasi-experimental approach, with an intervention and waitlist control group and survey measurements at three times. Supervisors of each organisation were assigned to an intervention or waitlist control group in consultation with the human resource personnel or factory manager. This method of assignment was chosen to accommodate the supervisors' work schedule and rotation of workstation management among supervisors. Supervisors were invited to participate in AST and to complete surveys assessing their supervisory style. At the same time, meetings were organised with their direct reports to invite them to participate in the study by filling in surveys. Surveys with the supervisor's code were distributed to the respective employee. Confidentiality was maintained through anonymous survey forms, with two unique identifier questions used to track the survey forms across time (e.g., date and month of birth).

All supervisors and employees were given the surveys one week prior to the training with the supervisors in the intervention group (Time 1 surveys) to allow supervisors time for mental preparation leading to the training and the trainer to contextualise examples used during the training. The surveys were re-administered to all supervisors and employees 2 weeks post-training (Time 2 surveys) and again at 8 weeks post-training (Time 3 surveys). Finally, the research process ended with training for the waitlist control group supervisors. Studies involving autonomy-supportive training have evaluated the effect ranging from 2 weeks, 2 months to a year (Aelterman, Vansteenkiste, Van Keer, & Haerens, 2016; Lewis et al., 2016). However, evaluation beyond 3 months is not recommended for studies involving employees in low-skilled occupations, due to

high attrition risk (Busch, Koch, Clasen, Winkler, & Vowinkel, 2017). Figure 1 illustrates the timeline and the research procedure.

[insert Figure 1]

Autonomy-supportive Training (AST)

The training material was developed following the recommendations from Su and Reeve (2011) and the adult learning principles by Knowles, Holton, and Swanson (2012). Prior to the training, a pilot AST was conducted with 11 supervisors from two organisations. Feedback on the practicality, ease of understanding and delivery method of the AST was collected. The final training material was modified with reference to the recommendations of the pilot participants. An example of the modification is changing the word from "block" to "stop" for clarity in the original question, "what might block you from practising an autonomy-supportive approach?" All training was conducted by the first author.

The AST consisted of a 3-hour training (Part 1) and a 1-hour follow-up (Part 2) 2 weeks after the training. Part 1 was divided into two sessions. Supervisors were given a booklet of the training content at the beginning of the session as supplementary material. In part 1, each of the four autonomy-supportive behaviours was presented to the supervisors using examples and discussion. The first session was about 1.5 hours. The second session of part 1 consisted of a work scenario discussion and goal setting, where supervisors were encouraged to share their goals during the follow-up session. Part 2 of the AST consisted of goal reviews and setting of longer-term goals (Yong, Roche, and Sutton, 2019).

Measures

Supervisory style

The supervisory style frequently practised by the supervisors was measured using the Problems at Work scale (PAW) by Deci et al. (1989), adapted from the Problems in Schools questionnaire (Deci, Schwartz, Sheinman, & Ryan, 1981). The scale consisted of eight work scenarios with four responses following each scenario. The scenarios comprised of issues supervisors might encounter with employees, such as *One of the customers has let you know that he is not very satisfied with the attitude of his service representative.* Following the scenario, supervisors rate the appropriateness of the responses on items such as *Tell him (employee) to see to it that the customer is more satisfied and let him know you will be checking up on him* on a 7-point scale ranging from 7 *Highly appropriate* to 1 *Highly inappropriate*. The four responses within the scenario reflected four management styles: highly controlling (HC), moderately controlling (MC), moderately autonomy-supportive (MA), and highly autonomy-supportive (HA).

Supervisors' Autonomy Support

Employees' perception of SAS was assessed using the Work Climate Questionnaire (WCQ) adapted by Baard et al. (2004) from Williams and Deci (1996) ($\alpha = .96$) and Williams, Grow, Freedman, Ryan, and Deci (1996) ($\alpha = .92$). The WCQ is a 15-item questionnaire, with items such as *I feel understood by my manager,* and participants rated their perception of SAS from a 7-point response scale ranging from 7 *Strongly agree* to 1 *Strongly disagree.*

Need satisfaction and frustration

The satisfaction and frustration of employees' basic psychological needs were measured using the 24-item Basic Psychological Need Satisfaction and

Frustration at Work scale (BPNSF-W). The scale was adapted by Schultz, Ryan, Niemiec, Legate, and Williams (2015) to the work domain from the general scale developed by Chen et al. (2015). The Cronbach's alpha for the need satisfaction scale was 0.90, and 0.88 for need frustration. The need satisfaction scale uses items such as *At work, I feel capable at what I do* and the need frustration scale uses items such as *I feel insecure about my abilities on my job*, and employees rated the items from 1 *totally disagree* to 7 *totally agree*.

Results

Supervisory style

The four supervisory styles can be averaged into a single composite score, which demonstrates the overall supervisory style, or evaluated as four separate styles. We chose to evaluate the supervisory styles separately to test how the training affected each of the supervisor's supervisory style. Mean differences across time for the four supervisory styles–HA, MA, MC and HC–were analysed separately for supervisors in the intervention and control group using repeated-measures ANOVA. The results show Mauchly's sphericity test was not violated. There is a difference in MA style for supervisors in the intervention group only across the three time points ($F(2, 14) = 8.51$, $p < .05$, $\omega^2 = .55$). Supervisors in the intervention group showed increased in MA style at Time 2 as compared to Time 1, but not from Time 2 to Time 3 and there was no significant decrease in controlling style. Figure 2 illustrates the mean differences of supervisory styles (HA, MA, MC and HC) across time between the intervention and control group.

[insert Figure 2]

Employees' perception of SAS, need satisfaction and need frustration

Changes in SAS, need satisfaction and need frustration as felt by employees whose supervisors attended the training, was analysed using growth curve modelling. This analysis was chosen as it does not assume independence and is able to handle incomplete datasets, which is crucial, as participants did dropout from the study (Twisk, 2006). Moreover, it estimates variable change between individuals (Level 2) and change within a person (Level 1).

We begin by modelling growth with a linear trend as the base model using Maximum Likelihood estimation for SAS, need satisfaction and need frustration. Time was our predictor and SAS, need satisfaction and need frustration was the dependent variable with autoregressive covariance structure for random effect. Contrary to expectations, the result showed no significant increase in SAS, employee need satisfaction or decrease in need frustration. Table 1 shows the results of the linear trend analysis for the intervention group.

[insert Table 1]

Discussion

Training supervisors in autonomy-supportive behaviours resulted in an increase in autonomy-supportive supervisory style in the first post-intervention survey. The change in supervisory style once again confirms the malleability of supervisory style as demonstrated in studies by Deci et al. (1989) and Hardré and Reeve (2009). However, the effect did not persist into Time 3. This finding is similar to the study by Reeve, Jang, Carrell, Jeon, and Barch (2004) with teachers, which found no difference in autonomy-supportive behaviour between Time 2 and Time 3 assessment for teachers who did not receive further autonomy-supportive instruction after Time 2 assessment. The findings suggest although supervisors

can be trained to be more autonomy-supportive, it is just the first step to changing supervisory style. The maintenance of SAS will need to take into consideration other organisational factors, which will be explored in the qualitative phase.

AST is expected to not only affect supervisory style but also be felt by employees. However, employees did not report an increase in perceived SAS and need satisfaction or decrease in need frustration after supervisors participated in AST. Our findings were inconsistent with the findings of other studies (Hardré & Reeve, 2009; Reeve & Cheon, 2014). However, organisational factors and SAS are known to affect employees' perception of SAS and need satisfaction (in the section "Maintaining SAS"). As there was no change in SAS beyond the first post-intervention survey, we suggest this also influenced employees' perception of SAS and need satisfaction. The findings also emphasise the value of maintaining SAS for employees to experience such an effect.

Apart from broadening the understanding of SAS as the primary intent of using a mixed-method, the approach is now also intended to provide explanation on related issues that occurred in the research process (Creswell & Plano Clark, 2017). In this case, the issue is that the intervention effect was not felt by employees. Based on the review earlier (in the section "Maintaining SAS"), we hypothesised that supervisors' environment influenced their supervisory style and employees' perception of SAS. Hence, we conducted focus groups with supervisors to understand their work environment while issues related to the outcome of AST in the quantitative findings were woven into the discussion.

Qualitative phase

Procedure

This phase used focus group and interview methods to uncover factors that could influence the maintenance of SAS and the relationship between supervisors and employees. An email was sent to the human resource personnel or factory manager to invite supervisors of the four organisations who attended AST to participate in the focus group. Two factories and a hotel responded to the invitation and a meeting with the supervisors was held in each organisation. The first author explained the focus group purpose and invited the supervisors to participate in it. An interview option was also available for supervisors who were unable to attend the focus group. Consent for audio recording was obtained from participants. To protect the confidentiality of participants, anonymity was assured, and ground rules were established to keep the information discussed within the focus group only. Participants were free to withdraw from the focus group at any time if they felt uncomfortable discussing the topics.

A focus group approach was chosen as it allows for interaction between supervisors in the organisation. Such group interaction can provide valuable information about similarities and differences of view from various departments and as members of an organisation which, an interview alone could not (Morgan, 1997). A focus group also provides the opportunity to observe difficulties that may arise in communicating information considered as sensitive (Wellings, Branigan, & Mitchell, 2000), such as information about their manager or employees.

Following the procedure outlined by Morgan (1997), the prompt questions were general instead of narrow to avoid limiting the data and to encourage

discussion. Furthermore, focus groups were conducted using a funnel strategy, starting with general prompt questions followed by specific question (e.g., how pressure affected their relationship with employees). As proposed by Holstein and Gubrium (1995) participants were also given an information sheet at the beginning of the focus group, describing the training and survey they participated earlier to provide context to the discussion. In summary, we drew on various methods in conducting focus group to achieve the research objective.

Based on the review earlier, factors that might affect the maintenance of SAS included the managerial relationship with supervisors and various types of pressure. These factors, in turn, could affect employees' perception of SAS. Therefore, the focus groups aimed to explore (1) supervisors' relationships with their managers and employees, and (2) the source and effect of pressure on their role as supervisors. A series of prompt questions were directed to the participants during focus groups. An example of the prompt question was: Tell me about the relationship you have with your own managers/bosses?

Sample

A total of three focus groups (ranging from three to seven participants in a group) were conducted with 14 participants. An interview using the same prompt questions was conducted with one supervisor who was unable to attend the focus group during the day. Overall, the participants consisted of 3 females and 12 males. Focus group 1 consisted of three supervisors from a factory, group 2 consisted of four supervisors from the hotel, and group 3 consisted of seven participants from the factory, though four of the participants left before the focus group ended.

Analysis

Inductive thematic analysis was used to analyse the focus groups and interview data. The phases of thematic analysis suggested by Braun and Clarke (2006) were used in this study. In phase 1, the first author transcribed the audio recordings and became familiar with the data through reading and re-reading the transcriptions. Moving to phase 2, initial codes were generated by going through the entire transcribed dataset. In inductive thematic analysis, code generation is driven by data, hence, the entire dataset was coded without looking for theory-specific information. Codes were generated from each transcription separately and combined into a single list of codes before searching for several possible themes (phase 3). An initial mind map was used to represent the possible themes, and themes were reviewed and refined for internal consistency and heterogeneity (phase 4). Finally, in phase 5, themes were defined and named with agreement from all the authors.

Results and discussion

Figure 3 presents the three main themes identified along with the sub-themes and codes. The themes will be described with narratives from the participants.

[insert Figure 3]

Relationship with managers

Perception of managers

Supervisors' perception of their managers tends to vary from one manager to another, but there was consistency among supervisors when they discussed the same manager. For example, supervisors who were from the same organisation perceived their manager as supportive and providing job autonomy to them.

I don't have any issue with Manager L, always been supportive of me so… I get to do what I want to do without anyone micromanaging me, which is always good and he doesn't expect to micromanage people otherwise as he says, "why would I employ you if I have to micromanage you?" (T1).

On the other hand, supervisors from the other two organisations felt a lack of support from their manager. Supervisors felt guidance or feedback were not provided for them to successfully accomplish their tasks or there was a lack of understanding from their managers when targets were not achieved.

Normally, when you have your views and um what not… you… you know... put out some things you wanna get done and nothing really happens (C13).

Manager M comes down on me, "why are they taking this long in the room?" Well, hang on… ah... ok… We've only got 1 vacuum on the floor and three teams (N 12).

Overall, the lack of managerial support reported by a majority of the supervisors was prominent in the discussion, hence leading to the following sub-theme.

Controlling managerial style

In two of the organisations, participants seemed hesitant discussing issues such as being held responsible over unmet performance standards, not being consulted or informed about decisions made, and inflexible working conditions set by the management. They used words like "they," "above" or making hand gestures pointing to offices of the management staff in conversing about their manager or a manager from the upper management. Such observation carried the sentiment that discussing negatively about their manager or upper management

staff might lead to negative repercussions. This reflects a controlling managerial style perceived by supervisors (Slemp et al., 2018).

> *When the machine's down for the day, you get behind. And then you get us leaders get looked at. Eyes in the back. Cause that's our job is to make sure it gets done (C18).*
>
> *When you get the pressure from like I said above and I have to relay that on the team and say, "look, you're taking too long, and then what's going on blah blah blah." "Oh, you know ra ra ra," and then as I'm walking away, I can just hear "that bitch" (N12).*

According to Deci et al. (1982), teachers who were told in a controlling manner that they are responsible for students' performance were in turn, controlling of the students. Therefore, we suggest supervisors operating under a controlling management style tend to also use a more controlling approach and reprimanding language (e.g., you're taking too long, what's going on?) and be less motivated to proactively consider employees' development.

Furthermore, other organisational studies have shown the detrimental effect of managerial negative behaviours on supervisors and employees (Mawritz, Mayer, Hoobler, Wayne, & Marinova, 2012). In line with our findings, a controlling managerial style not only resulted in supervisors' controlling behaviour but also resulted in employees' unmotivated and unproductive behaviours. Beyond behaviours, employees' well-being was also substantially affected by the controlling style. This demonstrates how higher-level relationships (managers) can impact employees.

> *And you're working and trying really hard, and somebody comes out and just sticks the knife at you… (C4). Yeah, how do you feel?... I'll go home*

*and not come back (C13). Yeah, I mean it just shatters your whole, you know, productivity. You start going over the hill. Nobody else gives a s*** (C4). And that's what we're finding is there's a lot of people that are don't care anymore... yeah... and that's reflected in productivity. So, it's just trying to… (C1).*

If she's not in a good mood, then the whole department is not in a good mood. It's taken it out on everybody (N12).

In summary, autonomy-supportive studies have commonly been interested in proximal autonomy support, especially by direct authority figures such as managers (Baard et al., 2004; Hardré & Reeve, 2009), teachers (Cheon et al., 2012) and coaches (Langan et al., 2015). Recently, a meta-analysis by Slemp et al. (2018) found that leaders' autonomy support, regardless of the proximity (direct leader or senior leaders), facilitated employees' need satisfaction. However, the effect of controlling style from managers to supervisors and employees has not been investigated. While leaders' autonomy support regardless of proximity can benefit employees, in our study, the lack of autonomy support from the managers (distal leaders) seems to leave the supervisors (proximal leaders) with insufficient support to function in their role, let alone be autonomy-supportive. This presents a challenge in the maintenance of SAS and the betterment of employees' well-being.

Working environment

Lack of resources

Supervisors across all three organisations noted that they had insufficient resources, such as staffing, facilities and training, to successfully accomplish their tasks. This represented a wider organisational issue, which goes beyond the lack

of support provided by managers. The staffing issues were related to employee retention, finding the right fit for the job and budget constraints. Their account contrasts with the popular belief that employees in low-skilled occupations are easily replaced.

> *Ah well, they have all the people at the head office up there learning all about it and knowing all the system. People down here, like Supervisor P, W and I had to use it every day, we haven't been shown a thing about it (T2).*
>
> *Be good to have another staff on desk so I'll be able to do all these… do all these tasks and get more sorted… with 5 staff, it's just a bit difficult. But sometimes we need it because we just running around sorting out the cars, sorting out the guests and everything just gets backed up (N1).*

Pressure from within the organisation

Supervisors from all three organisations felt the pressure from within the organisation, mainly from other departments. As their jobs operate in a chain, delay in one department tends to snowball to another, sometimes resulting in strained relationships among departments or within the department among supervisors and employees. Although a few supervisors described the pressure as constant, most felt the pressure from within the organisation can result in them feeling stressed and having to extend their role, thus working longer hours or having to "be on the floor" to accomplish the task.

> *And I say, "how am I gonna make those products in the shift?" "Oh, it was asked to be cut this morning so you could start off on it tonight to make the products." "Well, obviously it hasn't been cut." So now we're gonna go and change every machine (T4).*

Someone like rung me and ask me for rooms, and I go to these girls and I go, "you just stop what you're doing please, and move on to this room. Reception would like this room." And then, they're like, "oh, reception needs to come down here and see what it blah blah blah," they don't see why, and so, I sorta put them in their place and go, "actually no, it's not reception, the guest is here now" (N12).

Pressure from outside the organisation

A number of supervisors also felt pressured by sources outside the organisation, such as customers, resulting in a feeling of frustration that could also result in strain among and within departments. This direct pressure from customers was most related to occupations in the service industry. Such pressure can also be less predictable, as individual customers tend to vary and customer turnover is high.

[Customers are] like... no, I want it now. It's like, it's hard... like… yeah they don't think that the staff, they actually need a break... like... I've been away for dinner and the receptionist says, "ah, the duty manager is just at dinner" (pause) and the guest was like, "why is he at dinner? He should be helping me" (N1).

Reeve (2009) categorised the sources of pressure experienced by teachers from within or outside the school as "pressure from above" (p.164). We have chosen to distinguish between two sources of pressure, as not all supervisors experience direct pressure from outside the organisation. Distinguishing the sources of pressure demonstrated how pressure was "transferred" to supervisors, which provides an understanding of the process leading to the supervisory style. Although the paths in which pressure was transferred to supervisors differ, both

can result in supervisors feeling stressed and frustrated, further leading to experiencing strained relationships with employees or other departments. Similar to the proposition by Reeve (2009), when teachers experience pressure from administrators or state standards, they tend to absorb and pass it on to the students in the form of a controlling teaching style.

According to Hockey (1997), one of the ways employees handle pressure beyond their comfort level is to exert effortful strategies to meet demands while adopting a strategy that requires less effort in other tasks. The pressures and lack of resources as experienced by supervisors is characterised as pressure beyond supervisors' comfort level. The pressure led them to spend their energy dealing with demands while adopting an approach requiring less effort when supervising employees. Rigby and Ryan (2018) mentioned that controlling approaches are effective and quick to command change, especially for short-term behaviour. With high demands, supervisors adopt a controlling approach, which would require less effort to handle staff-related issues. However, this is done at the expense of compromising long-term motivation and performance, as seen also by our results, whereby need satisfaction and frustration remains stagnant when employees' perception of SAS remains unchanged.

Supervisors' interaction with employees

Consistency in contact

The majority of the participants reported having inconsistent contact with their employees, suggesting difficulty in their supervising role. About half of the respondents reported that their employees tend to have inter-departmental movements based on departmental needs and employees' skill sets, while other

supervisors work with their team based on shifts. A few supervisors rotate their shifts to fill in on each other's days off.

> *At the moment, there's 2 guys making (something) for assembly. If tomorrow Supervisor P got a whole lot of work in, then those 2 guys will automatically start in Supervisor P's department again (T1).*
>
> *Every week it changes… I mean it is the nature of the job in Department F, like it does rotate. You do have to just work around it (N1).*

The inconsistency in contact between supervisors and employees can play a major role in the effect of AST not being clearly reflected in employees' well-being, as some employees might report to a supervisor who has attended AST while other supervisors have not. A similarly designed study on personal growth leadership intervention by Elo, Ervasti, Kuosma, and Mattila-Holappa (2014) was also unable to detect difference between the control and intervention group for perceived supervisors' behaviour and employees' well-being. One of the reasons cited for the weakened effect was the lack of contact between supervisors and the mainly blue-collar employees. Apart from frequency in communication, Vidyarthi, Erdogan, Anand, Liden, and Chaudhry (2014) found that employees made comparison between two leaders, and the comparison would affect employees' attitudes and behaviours. Having different supervisors might lead to comparison, thus affecting employees' perception of SAS, particularly if both supervisors have a different supervisory style.

Use of different supervisory styles

Supervisors tend to experience tension with employees when there were noncompliant behaviours or unmet targets. They mainly used a confrontational

approach or punishment for undesirable behaviour, thinking that it has worked for them in dealing with employees' issues in the past.

> *Yeah, like we all jump on them straight away as soon as they start missing days and everything like that, um... yeah, I think like Supervisor P and A, I do my best for the guys in here but I'm not here to hold their hands and wipe their bums for them. I'll help them as much as I can, I'll be their mate when I have to be. I'll be their boss when I have to be but I'm not gonna tell you how to run your life. That's your problem. You don't want to turn up for work, you don't get paid, I'll finally push you out the door (T2).*
>
> *Like I always stood my position that I wouldn't change anything. For the last 30 years–I've been supervising for that long–at the end of the day, always open for different ideas but the basics of supervising people are still the same (T1).*

On the other hand, a small number of supervisors used reasoning to negotiate employees' discontent and work demands.

> *I always tell the team if there's no linen, there's no room. That's why like I always talk to my team we must push the linen as fast as we can (N15).*
>
> *That's what I will explain to the guys. It's not an every night thing. You gotta expect we do get behind on things cause you have got machine breakdowns and you have to catch up on other stuff first (T4).*

Some of the supervisors seem to be demonstrating a more controlling approach by using punishment to correct perceived noncompliant behaviour, while a few maintained a more autonomy-supportive approach by using reasoning to communicate expectations to the employees. In line with Reeve's (2009)

proposition, supervisory style can also be influenced by their belief about how effective the supervisory style is. Although supervisors' belief can influence their style, Stenling and Tafvelin (2016) point towards organisational autonomy-supportive environment as the major factor of long-term autonomy-supportive practice. Therefore, to maintain SAS, the preeminent factor lies within the organisation, while individual belief is acknowledged as additional factor.

General discussion

The purpose of this study was to (1) evaluate the effect of AST for supervisors and employees in low-skilled occupations and (2) explore factors that could affect the maintenance of SAS. This study is novel, as AST has not been conducted with supervisors nor the effect evaluated with supervisors and employees in low-skilled occupations. Moreover, the factors that could influence the maintenance of SAS have also not been explored in organisational context, particularly in low-skilled occupations. Figure 4 presents the overall conceptual model resulting from this study.

[insert Figure 4]

The quantitative results showed supervisors who attended AST demonstrated change in their supervisory style in the first post-intervention survey, but the employees showed no change in regards to perceived SAS, need satisfaction and frustration. The qualitative results showed that contextual factors such as managers' behaviour, lack of resources, various sources of pressure, inconsistent contact and supervisors' beliefs can affect the maintenance of SAS. As Inceoglu, Thomas, Chu, Plans, and Gerbasi (2018) suggest, contextual factors can act as moderators of supervisor-employee interactions, and we suggest these

contextual factors have weakened the effect of AST on employees' perceived SAS.

Additionally, supervisors experience pressure from different sources, which we suggest resulted in a controlling approach and lack of SAS felt by employees. Kühnel, Sonnentag, and Bledow (2012) found employees cope better if resources provided correspond with demands. Therefore, we propose managerial autonomy support and adequate resources would help supervisors deal with the demands better, consequently maintaining SAS and the effect felt by employees. In line with Shanock and Eisenberger (2006) findings, future studies may consider testing the relationship and taking these factors into consideration as antecedents to supervisory style.

As supervisors' support is seen as one of the representations of organisational support which leads to employees' well-being (Rhoades & Eisenberger, 2002), we recommend establishing plans for leadership development upon initially taking up supervisory roles, especially when a consistent reporting line is relatively difficult to plan for. That way, even though employees might report to different supervisors in different shifts or departments, they would still benefit from leadership development that all supervisors have learned during training.

Finally, leadership behaviours, especially the use of an autonomy-supportive style in lower-skilled occupations, warrant more attention, as it does seem to be lacking not just in the immediate supervisors but in higher levels of management as well. The controlling managerial style showed an impact that extends beyond affecting supervisor-employee relationship to employees' well-being. As low-skilled occupations contribute to a substantial percentage of

employment and the economy, it is crucial to focus on employees' well-being by establishing a supportive leadership style throughout the organisation.

Limitations and future research

The results of the study should be interpreted with awareness of the limitations. First of all, the factors that could limit SAS were explored using focus groups and interview method and may not be generalisable to the wider population. In focus groups, participants might have responded in agreement or been uninvolved when discussing their manager or employees, due to the sensitivity of the topics and confidentiality concerns. These limitations were addressed by assuring confidentiality and allowing participants to withdraw from the discussion at any time; and conducting the focus groups away from the offices of their manager or upper management. Additionally, using Zeller's (1993) guide to encourage diverse opinion around sensitive topics, the facilitator acknowledged participants' experience, probed for clarifications and avoided reacting to the comments with surprise or disapproval. While strategies are in place to address the limitations, future studies may consider conducting in-depth interviews with a few members from each organisation to validate findings or conduct experimental or longitudinal studies to establish the degree of influence the factors have in contributing to supervisory style and employees' well-being.

Secondly, in relation to the setting of intervention and control group within the organisation, the inconsistent contact between supervisors and employees needs to be taken into account if researchers are to conduct intervention studies with employees in low-skilled occupations. Future research might consider comparing two similar organisations or between branches, rather than setting up intervention and control groups within each organisation. As post-intervention

surveys were taken 1 week, 2 weeks and 2 months after the intervention, it was difficult to ascertain the fluctuation of well-being in terms of need satisfaction. According to Inceoglu et al. (2018), longitudinal studies could benefit from research design that is able to capture the fluctuation of well-being. Diary study design could potentially provide more robust information of the intervention effect.

Thirdly, the study is conducted in the context of low-skilled occupations in New Zealand. Winkler, Busch, Clasen, and Vowinkel (2014, 2015) suggest that potentially small sample size and/or scales appearing more complex to employees in low-skilled occupations may introduce validity issues to the scales used. Apart from the PAW, the structural validity and reliability of all the scales were satisfactory (Cronbach's alpha above .70). However, future studies are needed to ensure scale validity of the PAW with supervisors in low-skilled occupations**.** In addition, organisations attempting to apply the knowledge of training and maintaining SAS of this study might want to adapt the findings according to the relevant context. On the other hand, future research could study the similarities and differences of training and maintaining SAS in different work contexts, such as those in higher-skilled occupations, as Beenen et al. (2017) suggested the level of SAS required might differ according to the level of task identity in the job.

Finally, researchers should also consider exploring factors affecting employees' perception of SAS qualitatively. In doing this, researchers should also be aware of the potential difficulty in getting a group of employees out of their processing or service line for further in-depth study. Therefore, a short interview method might be preferred instead of focus group or an in-depth interview.

Conclusion and practical implications

This study has shown that AST conducted in a less autonomous and highly routine work environment can induce a minor change in supervisory style. The main findings in the autonomy-supportive supervisory style were highlighted. Firstly, training can be the first step to educating supervisors on an autonomy-supportive supervisory style. However, as discussed in the qualitative phase, the lack of managerial autonomy support can affect the maintenance of SAS. Thus, we suggest offering AST to various levels of management to support first-level supervisors in becoming more autonomy-supportive. Moreover, the lack of essential resources and pressure were also found to affect supervisor-employee relationship. Therefore, providing essential resources such as equipment, training and staffing to accomplish tasks is necessary for supervisors to manage the pressure and re-direct their focus to improve their interaction with employees. Finally, with the influence of top and middle leadership on SAS, an autonomy-supportive leadership development plan which includes top and middle-level management, and supervisors, is crucial for employees to gain the full benefit of SAS.

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Table and Figures

Table 1

Results of growth curve modelling for employees' perception of SAS, need satisfaction and need frustration.

	α	*b*	SE $_b$	CI
SAS	.96	.01	.06	-.10, .12
Autonomy satisfaction	.75	.10	.06	-.02, .22
Autonomy frustration	.76	-.09	.10	-.28, .10
Relatedness satisfaction	.76	.08	.06	-.04,.20
Relatedness frustration	.77	.05	.08	-.11, .22
Competence satisfaction	.70	-.00	.05	-.10, .10
Competence frustration	.78	.07	.09	-.10, .25

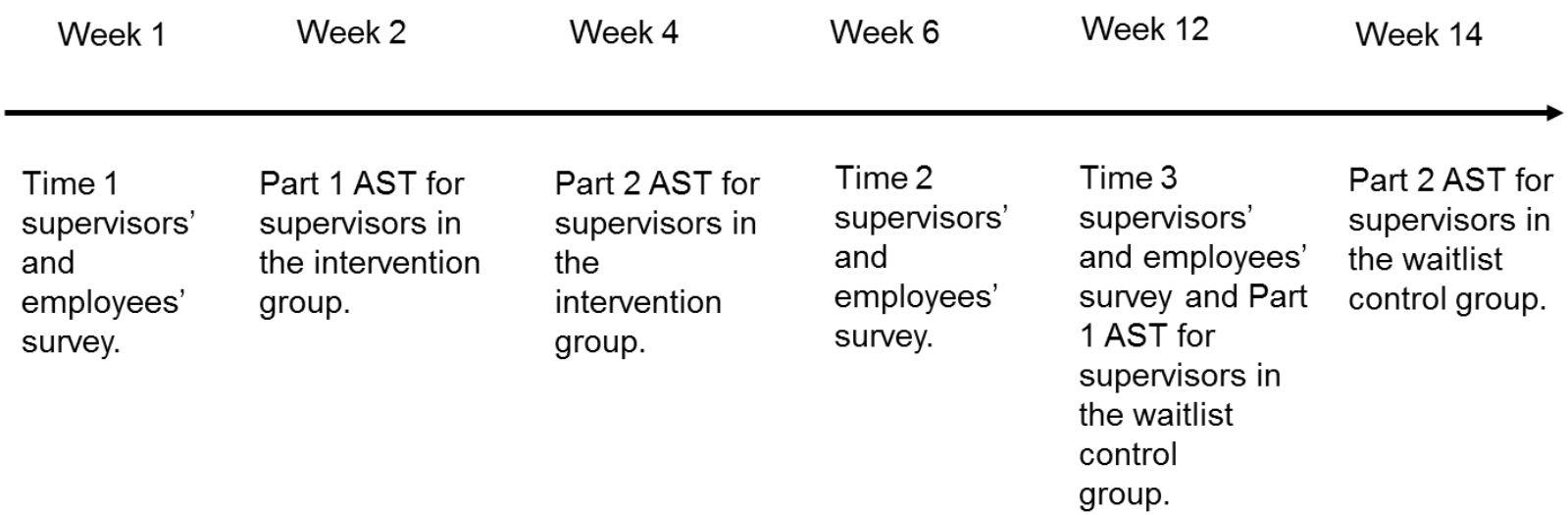

Figure 1. Timeline and research procedure.

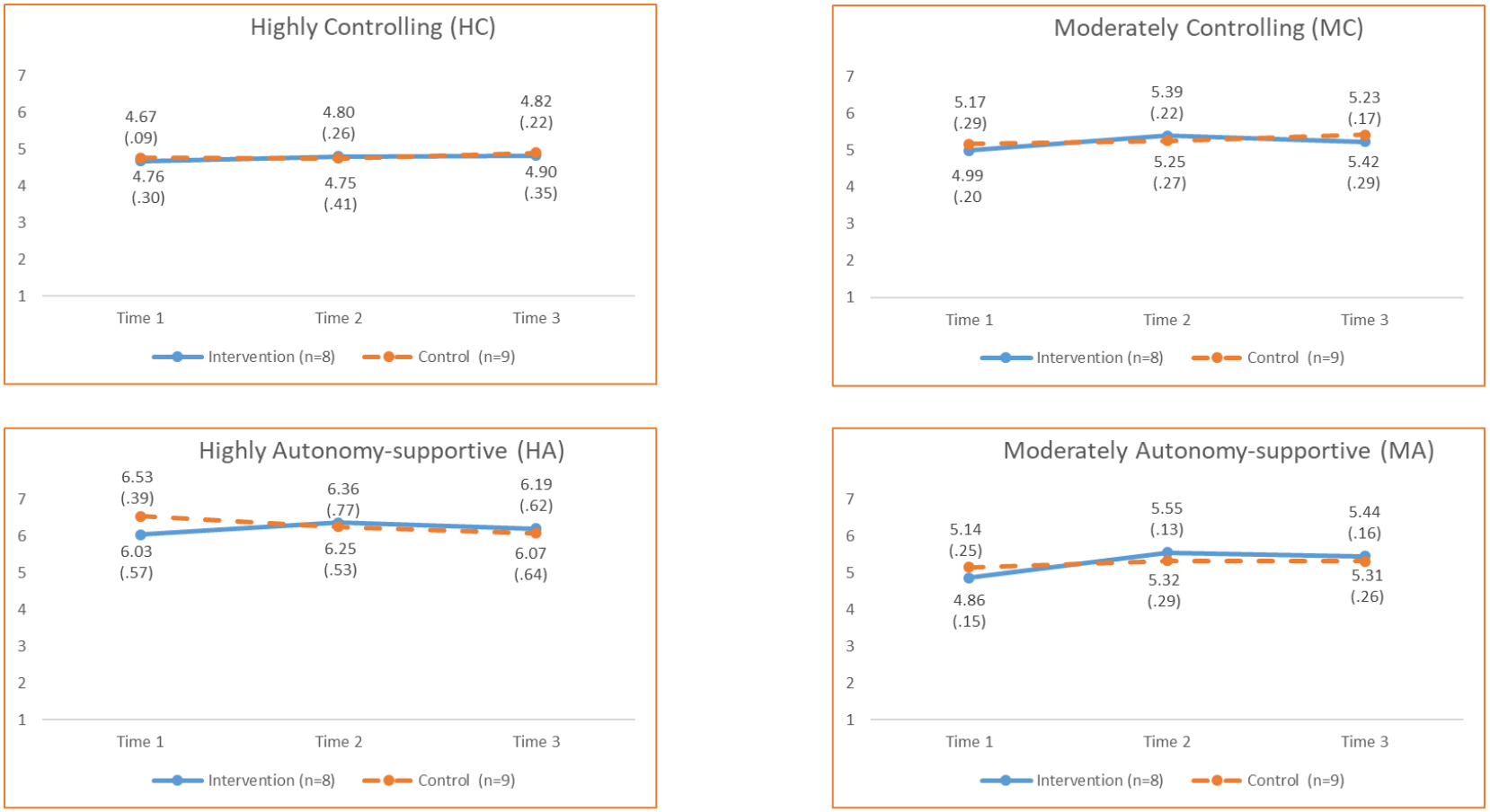

Figure 2. Effect of AST across time on supervisory practices from HC to HA (left two panels) and MC to MA (right two panels). Numbers in parentheses represent standard error mean. Cronbach's α for HC = .79, HA = .84, MC = .87 and MA = .85.

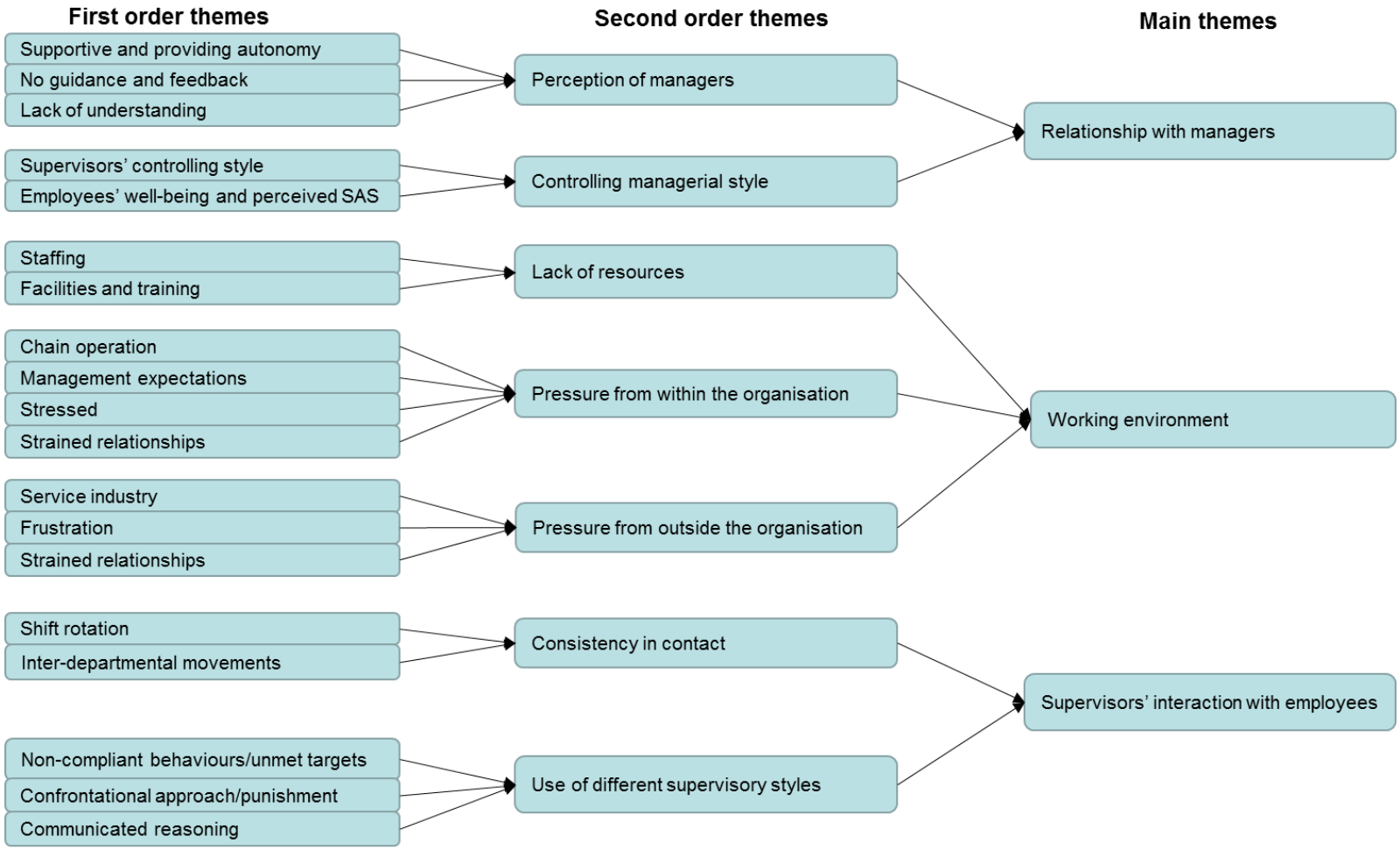

Figure 3. Outcome of thematic analysis for qualitative study.

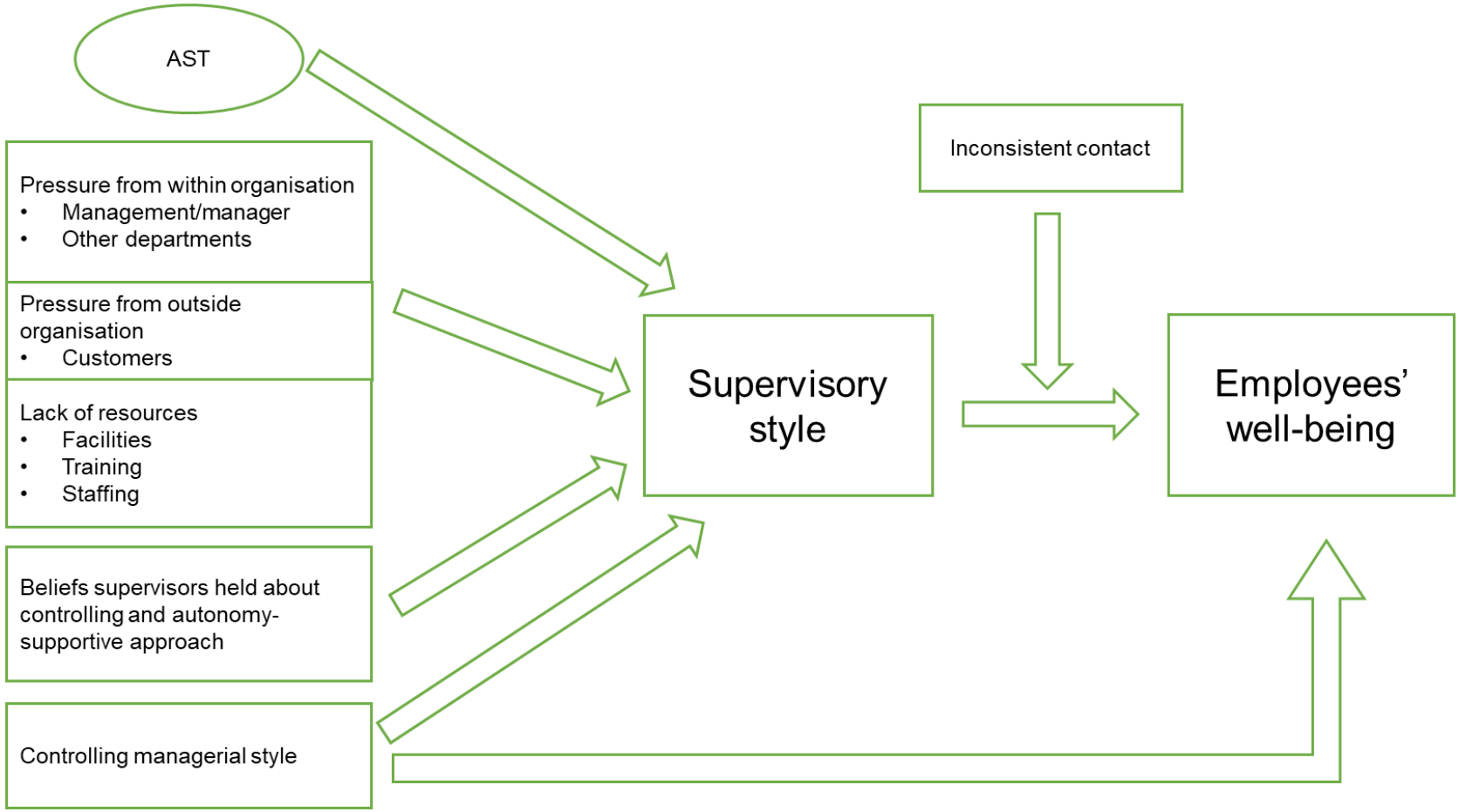

Figure 4. Factors affecting supervisory style and employees' well-being.

CHAPTER 6

GENERAL DISCUSSION AND CONCLUSION

Overall, supervisors' autonomy support (SAS) is beneficial to the well-being of employees in low-skilled occupations and supervisors can be trained to be more autonomy-supportive. To reiterate, this thesis aimed to: (1) develop the autonomy-supportive training (AST) and conduct a preliminary evaluation of the AST with supervisors in low-skilled occupations, (2) establish the perceived effect of SAS on employees in low-skilled occupations, (3) evaluate the outcomes of AST on supervisors and employees, and, (4) explore the factors that could affect the maintenance of SAS. These aims have been deliberated through the three articles (chapter 3 to chapter 5).

The fact that employees in low-skilled occupations are in a poorer psychological state than those in higher-skilled occupations is not foreign to researchers (Batinic et al., 2010). Yet, there remains a lack of studies on how to improve their well-being. Therefore, investigating SAS provides a much-needed answer on how to improve the well-being of those employed in low-skilled occupations. Overall, this thesis makes a novel contribution to organisational and SDT literature through a series of in-depth studies on autonomy-supportive supervision with those employed in low-skilled occupations who have limited job autonomy. The studies resulted in: the development of training material aimed at increasing autonomy-supportive behaviours of supervisors in low-skilled occupations; an understanding of the relationship between SAS and employees' self-reported well-being; and, knowledge of the prospects and challenges in conducting AST for those employed in low-skilled occupations.

The three research chapters (chapter 3 to chapter 5) within this thesis provided a detailed outline of the theoretical basis, methodology, results, discussion, implications, limitations, and conclusion of each study. In summary, the specific research questions asked were:

1. How can AST be adapted for supervisors of low-skilled occupations?
2. What is the perceived effect of SAS on employees in low-skilled occupations?
3. What is the effect of the AST on supervisors and employees?
4. What can affect the maintenance of SAS among supervisors in low-skilled occupations?

This concluding chapter will first provide the answers to each of these questions, along with the implications of the studies. Next, a general discussion consolidating the four research questions, and which highlights the practical and theoretical implications of this research, will be presented. The chapter concludes with the limitations of the study and directions for future research.

How can AST be adapted for supervisors of low-skilled occupations?

The earlier review (chapter 1) noted that there is a clear lack of autonomy-supportive training designed for supervisors in low-skilled occupations who have different learning needs from those in higher-skilled occupations (Illeris, 2006). In order to design an autonomy-supportive training which suits the need of supervisors in low-skilled occupations, there is a need to look beyond the guide provided by Su and Reeve (2011) and other autonomy-supportive training studies. As reported in chapter 3, this thesis systematically integrated the adult learning principles of both Knowles et al. (2012) and guides provided by previous authors who have conducted autonomy-supportive training, in order to design an AST for

supervisors in low-skilled occupations. Apart from the integration of the principles, the formal language style commonly used in autonomy-supportive training was changed to colloquial language to fit the target audience.

A preliminary evaluation found the AST design, language, and material used were understandable, that these were delivered effectively, and that the content of the training was applicable to supervisors. These findings contribute to the theoretical understanding of SDT and adult learning principles by demonstrating the consistency in their views of adult learners. Therefore, they can be systematically integrated to form the AST which is applicable to supervisors in low-skilled occupations. Moreover, the trainer's reflection discussed ways to engage with learners in low-skilled occupations, approaches which are currently lacking in organisational literature. The practical implication is that, for supervisors in low-skilled occupations, the AST was the first training programme specifically designed to increase supervisors' autonomy-supportive behaviours. Therefore, organisations can include the AST as a supervisory skills development programme, especially for supervisors who are recently promoted into the role. Overall, the study demonstrated how the AST can be adapted and conducted for supervisors in low-skilled occupations.

What is the perceived effect of SAS on employees in low-skilled occupations?

The relationships of SAS with need satisfaction and frustration and with the outcome variables have previously been investigated with various occupational groups, but not specifically with those employed in low-skilled occupations. As employees in low-skilled occupations work under a high demand environment, SAS can be a positive resource to mitigate the negative effects of

those demands. Therefore, it is crucial to understand the role of SAS on employees' well-being.

Chapter 4 sought to answer the question by first establishing the relationship between SAS and need satisfaction and frustration. The findings showed SAS was positively related to the satisfaction of autonomy, competence, and relatedness needs, but was only negatively related to the frustration of autonomy and relatedness needs. Next, it was found that SAS was related to job performance through competence and relatedness needs satisfaction, while SAS was related to well-being through autonomy need satisfaction only. Finally, the findings demonstrate that need frustration did not mediate between SAS and job performance and well-being.

There are a few theoretical and practical implications of these findings. Starting with theoretical implications, the effect sizes between SAS and need satisfaction was stronger than the effect sizes between SAS and need frustration. Such results confirmed what Gillet et al. (2012) also found i.e., that SAS was related to need satisfaction to a greater degree than to need frustration. Thus, SAS was viewed by employees as a positive resource that is related to fulfilment of the basic psychological needs of employees. In view of such findings, whilst SAS functions to satisfy employees' basic psychological needs, it may be insufficient to prevent the frustration of needs, especially if employees continuously operate under a regimented and inflexible work environment.

Secondly, each need played a different role in the mediating relationship between SAS and job performance and well-being. Such findings were in line with the proposition by Van den Broeck et al. (2016) who stated each need has a unique role to play in relation to the various outcomes at work. As expected,

competence need mediated the relationship between SAS and job performance. This finding implied that even in low-skilled occupations where the nature of the task is often repetitive, supervisors still play a key role in providing resources and training and assigning challenging yet achievable tasks that will fulfil employees' competence need which leads to better job performance. Apart from competence need, relatedness need was also found to mediate SAS and job performance. As employees in low-skilled occupations operate in a chain and their tasks are affected by other departments, cooperation and interaction among departments are crucial not only to satisfy relatedness need, but also to ensure employees can successfully accomplish their tasks. Therefore, the supervisors' role is crucial in cultivating a positive relationship with employees and providing an environment for interaction and cooperation with other colleagues which fulfils employees' relatedness need and which, in turn, leads to better performance.

However, unexpectedly, autonomy need alone mediated between SAS and well-being in this sample. This finding could signify the important role of SAS in fulfilling the autonomy need, which, in turn, leads to well-being, particularly in an environment where job and schedule autonomy is low. Van Hooff and Van Hooft (2017) found employees whose jobs are low in autonomy tend to experience lower need satisfaction. As discussed in chapter 1, Radel et al. (2011) found people tend to shift their focus from a current autonomy-need depriving situation to other external factors to satisfy their deprived autonomy need. Therefore, it is proposed that employees in low-skilled occupations rely on SAS to satisfy their autonomy need, as their work situation itself tends to limit this. Subsequently, the satisfaction of autonomy need improves employees' well-being.

Additionally, a study by Kloos, Trompetter, Bohlmeijer, & Westerhof (2019) found that autonomy need was the strongest predictor of well-being among the residents in residential home. According to Vallerand, O'Connor, & Blais (1989), satisfaction of the autonomy need is key to the well-being of elderly residents in residential home as residents are often perceived to lack autonomy in deciding their daily activities. These studies point towards autonomy need being salient, usually above competence and relatedness needs in an environment that lacks autonomy. Similar to the finding of this thesis, employees in low-skilled occupations who works in an environment that lacks autonomy may also find the satisfaction of autonomy need more important to their well-being than the satisfaction of competence and relatedness need. However, such a proposition can only be confirmed through future studies with employees in low-skilled occupations.

Finally, the hypotheses testing need frustration as mediators were not supported. A series of studies by Bartholomew, Ntoumanis, Ryan, Bosch, and Thøgersen-Ntoumani (2011) have shown that need frustration and satisfaction, although not antithetical, tend to have different antecedents and outcomes. Need frustration was often related to a controlling environment and negative outcomes, while need satisfaction was often related to autonomy support and positive outcomes. Therefore, an investigation of controlling behaviours and negative outcomes might provide a better understanding of need frustration as a mediating variable.

The practical implication of this study is that it emphasises the role of supervisors' autonomy-supportive behaviour on employees' well-being. Specifically, SAS can contribute to better job performance and well-being of

employees in low-skilled occupations. Overall, SAS is positively related to job performance and well-being and has its effect through the satisfaction of specific needs, while need frustration does not mediate between SAS and job performance and well-being. Therefore, supervisors should be trained to practise autonomy-supportive behaviours. That finding leads to the third research question asked in this thesis and so it is discussed next.

What is the effect of the AST on supervisors and employees?

Although autonomy-supportive training has demonstrated success with other occupational groups (Su & Reeve, 2011), it remains an underexplored area for those employed in low-skilled occupations. As shown in the findings for research question 2, SAS is an important positive resource for employees in low-skilled occupations, particularly in the fulfilment of their psychological needs, and so leads to well-being. Therefore, AST is promising in two ways: as a means to improve employees' well-being and as a supervisory skills development exercise.

The quantitative phase in chapter 5 answered this research question. There the outcomes of the AST were evaluated longitudinally by supervisors and employees in low-skilled occupations. The findings from supervisors in the first postintervention survey (i.e., 2 weeks after the training) showed an increase in moderately autonomy-supportive behaviours among supervisors who had attended the training. In line with the studies by Deci et al. (1989) and Hardré and Reeve (2009), the findings demonstrated that supervisors can learn to be more autonomy-supportive after the AST. The findings also established the malleability of supervisory style in low-skilled occupations where job autonomy is often limited. However, the effect of the training was not shown in the second postintervention survey (i.e., 8 weeks after the training) to have persisted. As

reviewed in chapter 1, and as will be discussed in relation to the following research question, organisational factors such as pressure and managerial behaviours can influence the maintenance of autonomy-supportive behaviours. To summarise, the AST can be an effective means to introduce autonomy-supportive behaviours to supervisors. However, organisational factors need to be taken into consideration when designing the training for the training effect to last.

On the other hand, there was no change to employees' perception of SAS and need satisfaction and frustration for those whose supervisors attended the training in both postintervention surveys. Such findings were not consistent with studies that found autonomy-supportive training with teachers (those in a supervisory role) increases students' (those in an employee role) perceived autonomy support and need satisfaction and reduces need frustration (Reeve & Cheon, 2014). The results implied the effect of the training was not perceived by employees during the study period.

One of the reasons for such a result is that the moderate change in SAS reported by supervisors may have been insufficient for employees to perceive the effect of the training at the time of the first postintervention survey. As noted earlier, the initial change in SAS reported by supervisors did not persist 8 weeks after the training. Similarly, there was also no difference in employees' perception of SAS and need satisfaction and frustration 8 weeks after the supervisors' training. This result suggests that supervisors' autonomy-supportive behaviours are related to employees' perception of SAS (Cheon et al., 2012; Hardré & Reeve, 2009; Reeve & Cheon, 2014; Ryan & Deci, 2017). In summary, supervisors' autonomy-supportive behaviours play a key role in employees' perception of SAS and need satisfaction or frustration. Therefore, the findings in this particular study,

which demonstrated moderate to no change in SAS reported by supervisors, may be one of the key reasons why the training effect was not perceived by employees.

Alternatively, other studies have also suggested organisational factors such as social context within the organisations, pay, benefit, and job security can affect employees' perception of SAS (Deci et al., 1989; Hitt et al., 2007). While supervisors' autonomy-supportive behaviours are key to employees' perception of SAS, other organisational factors can also affect employees' perception of SAS, hence, contributing to the training effect's not being perceived by employees.

In answer to the research question, the findings suggested AST increased supervisors' autonomy-supportive behaviours but not employees' perception of SAS, need satisfaction, and need frustration. Therefore, this study has contributed to SDT literature by demonstrating that, while supervisors in low-skilled occupations where job autonomy is low, can learn to be more autonomy-supportive after the AST that training is likely to be only the first step in changing their supervisory style.

While the research question has been answered, it presented an unsettling situation in that SAS did not persist after 8 weeks of the training for supervisors and employees did not perceive the effect of the training throughout the study period. Organisational factors as reviewed in chapter 1 can influence the maintenance of SAS, and, thus, affect employees' perception of SAS and need satisfaction. This finding highlights the importance of maintaining SAS, an issue which this thesis explores through research question 4.

What can affect the maintenance of SAS among supervisors in low-skilled occupations?

The final question of this thesis is related to understanding the factors which may affect the maintenance of SAS after the training. Additionally, exploring this question can also provide insight into why the effect of the AST was not perceived by employees. Many scholars in the field of training and development have suggested that organisational factors (e.g., managerial support, removing of obstacles, and opportunity to practise skills learned) are key to the long-term application of skills learned after the training (Salas, Tannenbaum, Kraiger, & Smith-Jentsch, 2012). Yet, those conducting autonomy-supportive training are frequently more interested in how to conduct effective training (Su & Reeve, 2011) than in examining organisational factors which could affect the maintenance of SAS after the training. Exploring these factors is important in terms of understanding how to maintain SAS, as employees will experience the benefits of greater need satisfaction through ongoing SAS (Cheon et al., 2012; Ryan & Deci, 2017). The qualitative section in chapter 5 provided an explanation of the factors which emerged from the analysis of focus groups and interview data that could affect SAS.

Four main factors that affected the maintenance of SAS were (1) the controlling managerial behaviours demonstrated by a supervisor's direct manager or managers which came from the upper management, (2) a working environment characterised by lack of resources and constant pressure from within and outside the organisation, (3) lack of consistent contact between supervisors and employees, and (4) a supervisor's own belief about the effectiveness of the

supervisory style. Additionally, the finding also suggested controlling managerial behaviours can directly affect employees' well-being.

The findings demonstrated how various organisational factors can affect the maintenance of SAS. As proposed by Daniels and Jonge (2010), employees cope better with pressure when they are provided with corresponding external resources. For supervisors to maintain SAS, they require corresponding managers' autonomy support and adequate resources to mitigate stressors that affect them and their relationship with the employees they supervise. Therefore, it is crucial for organisations to have a leadership development plan for supervisors and managers at various levels and to evaluate the provision of essential work resources to support supervisors in maintaining SAS. The leadership development plan for all supervisors and managers should incorporate the training of autonomy-supportive behaviours to provide consistency of autonomy-supportive style across the organisation, as autonomy-supportive behaviours can contribute to employees' well-being.

Without considering these organisational factors, training alone does not lead to a lasting effect on SAS, and employees will not gain the long-term benefit of SAS. The factors identified require careful consideration by future researchers and organisations when conducting the AST with supervisors to maximise the application and benefit of SAS.

General Discussion

The well-being of employees in low-skilled occupations and SAS as supervisory skills development should be viewed in terms of an organismic perspective. Employees are nested within an individual supervisor or a few supervisors whose SAS contributes to their well-being. Consecutively,

organisational factors have a macro influence over SAS and employees. In this thesis specifically, it was found that organisational factors influenced SAS and employees' well-being. Figure 2 depicts the relationship described above and so the practical and theoretical implications of these relationships are discussed next.

Figure 2. The organismic view of employees' well-being and supervisors' autonomy-supportive behaviours.

Practical implications

One of the practical implications of this study's findings is a recognition of how employees' well-being and SAS are embedded in the organisation. This thesis confirmed employees in low-skilled occupations perceived SAS as important to their well-being, but, in actuality, their well-being can also be affected by a manager's behaviour (distal leader). As leadership within the organisation (i.e., that of both supervisors and their managers) plays a key role in influencing employees' well-being, an autonomy-supportive leadership development plan involving all supervisors and managers may be key to employees' well-being. Therefore, an organisation-wide implementation of AST

would be required to achieve the full potential of AST to improve employees' well-being.

This thesis also designed the AST which was found to be applicable and effective to encourage autonomy-supportive behaviours among supervisors in low-skilled occupations. Therefore, that AST is now accessible and can be provided to all supervisors when promoted to a supervisory role as part of a leadership development plan and to improve the well-being of employees in low-skilled occupations. Nevertheless, the qualitative findings as outlined above suggest the maintenance of SAS is dependent on organisational factors including managerial behaviours, pressures, and the availability of essential resources. Such findings provide organisations with knowledge on how to support the maintenance of SAS. Drawing from the qualitative findings, this thesis proposes that upper managers also undergo the AST so they can adopt autonomy-supportive behaviours and provide the supportive context needed by their direct reports. In addition, organisations should be aware that the maintenance of SAS is possible only when supervisors have adequate, essential resources to enable their teams to accomplish the required tasks. When these practices are implemented, supervisors can manage the pressure from within and outside the organisation (as discussed in chapter 5) better, hence, they are able to redirect their focus to improving their interaction with those they supervise. Thus, employees can experience the full benefit of SAS.

Theoretical implications

This thesis made several theoretical contributions to SDT especially in the understanding of autonomy-supportive supervision and this particular contribution will be discussed below. As previously mentioned, studies on the benefit and

application of autonomy-supportive behaviours have often been conducted with those in higher-skilled occupations such as teachers, managers, coaches, and health practitioners with the aim of improving employees' and work outcomes. For example, Baard et al. (2004) examined the effect of managers' autonomy support on employees' performance in the banking sector; Deci et al. (1989) and Hardré and Reeve (2009) investigated the effect of autonomy-supportive training on employees' engagement and satisfaction and managers' autonomy-supportive behaviours in large corporations; and, Reeve (2009) discussed the factors contributing to teachers' adopting a more controlling rather than autonomy-supportive approach.

These studies have established that autonomy-supportive supervision is applicable to those in higher-skilled occupations who enjoy a higher level of job autonomy. However, as discussed in chapter 1, supervisors in low-skilled occupations tend to determine every work detail for order and efficiency; for this reason, autonomy support can be misrepresented as lacking direction or instruction. Such an assumption may have contributed to the lack of support for empirical studies with those in low-skilled occupations. Consequently, there has not been a single research study that systematically unifies the different aspects of autonomy-supportive supervision to provide an overview of autonomy-supportive supervision and how it contributed to the well-being of those employed in low-skilled occupations. Through investigating the benefit of SAS and providing an in-depth view of the potential and pitfalls of the AST, this thesis contributed to SDT literature by establishing the relevance of autonomy support even in a work environment where job autonomy is low. The findings of this thesis thus provide

the foundation for future studies to investigate autonomy-supportive supervision in a similar work environment of limited job autonomy.

Next, while autonomy-supportive training studies continue to advance, especially in the education sector, they remain scant in organisational studies. To date, only two autonomy-supportive training studies have been conducted in organisations and neither focuses on those employed in low-skilled occupations. One of the reasons could be that conducting and evaluating autonomy-supportive training in schools can be done more systematically and consistently as activities in schools are relatively stable and have a structured calendar, whereas organisational activities tend to fluctuate and change tends to occur rapidly (Oakland & Tanner, 2007). Changes in organisational activities make conducting and evaluating training more challenging, as training and evaluation schedules are subject to those changes. Moreover, organisations are faced with issues such as staff turnover, while teachers and students tend to stay in a school for a longer period of time. For example, a study by Cheon and Reeve (2013) showed that public school teachers in Korea tended to stay in a school for at least 4 to 5 years. The stability of participants makes the evaluation of autonomy-supportive training ideal in the education sector with its potentially lower attrition rate and more consistent reporting from both teachers and students.

All these factors can contribute to the reasons for the lack of autonomy-supportive training studies conducted in organisational studies. Consequently, less is known about the effect of autonomy-supportive training in organisations. This thesis is the first to establish that supervisors working in a highly routine environment can be more autonomy-supportive when provided with AST that is designed to suit their particular learning needs. The findings confirmed the

malleability of a supervisory style and so were similar to those found in earlier organisational studies and studies in the education sector (Deci et al., 1989; Hardré & Reeve, 2009; Reeve & Cheon, 2014). Such findings provide the basis for future organisational research to expand and establish the influence of AST on employees and supervisors on various key outcomes such as job satisfaction, turnover intention, and absenteeism.

Additionally, training literature has provided a general review of multiple factors that will affect the maintenance of skills learned after the training such as manager and peer support, opportunity to use the skills, follow-up training activities, and availability of cues to prompt the use of newly learned skills (Grossman & Salas, 2011). Stenling and Tafvelin (2016) found that for sports club leaders, organisational autonomy support could contribute to the maintenance of leadership skills learned after the training. Reeve (2009) also found factors such as pressure including that from their supervisor and belief about the effectiveness of a controlling style could lead to teachers' adopting more controlling rather than autonomy-supportive behaviours.

While such general information is useful for researchers to consider when designing autonomy-supportive training for skills maintenance, Baldwin et al. (2017) asserted that understanding trainees' specific context will provide more robust information for training skills to be maintained in the longer term. Yet, context-specific factors have not been explored and discussed in SDT literature and the organisational setting, hence, leaving an evident gap in the knowledge of maintaining autonomy-supportive behaviours after the training. Therefore, this thesis contributed to the knowledge on SDT by establishing context-specific factors which affected the maintenance of skills learned after the training. This

context-specific information can be used by subsequent SDT researchers aiming to conduct and observe a longer-term effect of autonomy-supportive training with supervisors in low-skilled occupations.

Moreover, autonomy-supportive studies have often focused on the outcomes of autonomy-supportive behaviours such as improved job performance (Baard et al., 2004), better well-being (Gillet et al., 2012), and higher organisational commitment and positive affect (Gillet et al., 2015), but not the antecedents of autonomy-supportive behaviours. A recent meta-analysis by Slemp et al. (2018) on autonomy-supportive leadership also clearly lacked discussion on the antecedents of autonomy-supportive behaviours. As autonomy-supportive behaviours contribute to various positive outcomes for employees, investigating the antecedents of supervisors' autonomy-supportive behaviours such as managers' behaviours, pressure, and supervisors' belief are important to ensure employees can experience those positive outcomes.

The factors found to affect the maintenance of autonomy-supportive behaviours after the training in this study were drawn from literature on SDT and other organisational studies suggesting the influence of external factors on autonomy-supportive behaviours. This thesis found that, apart from the autonomy-supportive training, factors such as pressure from within and outside the organisation, managerial controlling behaviours, and supervisors' belief about the effectiveness of their style can directly influence autonomy-supportive behaviours. As such, these factors can potentially be investigated as antecedents to autonomy-supportive behaviours in future organisational studies. New knowledge can emerge from studying how these factors individually and collectively contribute to autonomy-supportive behaviours, particularly in

predominantly low-skilled occupation organisations. In this way, this thesis has provided a foundation for future organisational research to examine the antecedents and outcomes of autonomy-supportive supervision as proposed in this thesis.

Finally, as stated in page 12, SDT was chosen as a means whereby to study the well-being of employees in low-skilled occupations because it takes into account the social context affecting employees' well-being, focuses on autonomy-supportive intervention which improves employees' well-being, and is applicable across different cultures. As such, this thesis has 1) identified the proximal social context (SAS) and distal social context (organisational factors discussed in chapter 5) which affect the well-being of employees in low-skilled occupations, 2) adapted the AST which was effective in increasing SAS, and 3) established that employees in low-skilled occupations in New Zealand perceived SAS as important to their well-being. Such findings demonstrated the need for future research (1) to widen the social context (proximal and distal social context) when investigating the well-being of employees in low-skilled occupations, (2) to contextualise the training for it to be effective to their target participants and (3) to study the effect of SAS in other cultures and sectors. The findings of this thesis have also demonstrated how SDT can be applied to study the well-being of employees in low-skilled occupations in New Zealand.

Limitations

As outlined above, this thesis contributes to the advancement of SDT literature and organisational practices. However, it is not without limitations. First, Bartholomew, Ntoumanis, Ryan, Bosch, et al. (2011) proposed that the antecedents and outcomes of need frustration are different from those of need

satisfaction. However, as this thesis focuses on SAS only, the null relationship between SAS and the outcome variables through need frustration could not be further explained by other predictors or outcome variables. Moreover, the weak mediation relationship between SAS, need satisfaction, and the outcome variables suggests the presence of other mediating variables which have not been included in this thesis.

Another limitation of the study relates to the intervention and wait list group within each organisation in a quasi-experimental design. The intent of such a design was to control for organisational variability in the study. However, during the study, employees moved department or changed their reporting lines. Although the qualitative focus groups and interview provided insight into the employment situation, this factor may have impeded some findings.

Next, a longitudinal design is often preferred to study the long-term effect of an intervention. Yet, one of the inevitable weaknesses of such a design is that participants drop out of the study. The major challenge is to motivate the employees to participate fully in the study. Some employees felt the study would have no effect on their work situation regardless of their participation. Therefore, they dropped out or chose not to participate. However, to reduce the dropout rate, I partnered with organisations that supported supervisors and employees' participation in the study. I also worked with three organisations to give supervisors and employees 15 to 30 minutes out of their working hours to complete the surveys in a meeting held in each organisation. Despite these arrangements, participants' attrition was unavoidable.

As with the limitations of the quantitative study design, the qualitative phase which used focus groups and interview methods was also limited in terms

of the generalisability of the findings. As this study was conducted in New Zealand and with employees in low-skilled occupations only, the results need to be interpreted in line with this particular context. Although those in other developed Western countries can potentially relate to the findings of this study, the application of SAS with employees in a vulnerable work environment such as those without basic employment rights may present a challenge. For example, one might ask: Is the application of SAS in this study still relevant to employees and supervisors in the garment factories in Bangladesh where the work environment is considered physically unsafe? ("Bangladesh clothing factories", 2018). That question would need to be explored in that context, as this research cannot provide an answer to that question.

Finally, conducting studies with employees in low-skilled occupations presents some challenges such as participants' lower literacy level and the issue of scale validity. In order to involve all participants, I provided on-site literacy support by reading out the survey questions to participants. Additionally, to ensure the survey questions suited the literacy level of employees in low-skilled occupations, the survey forms were first trialled with a limited number of employees and supervisors in low-skilled occupations. While the feedback from the employees and supervisors suggested the survey appeared easy to understand, their view may not reflect those of the research participants, as some scales were found to be more difficult than others to answer. For example, the PSS-4 scale was selected to measure employees' perceived stress because it is short, easy to understand, and reliable. Yet, the short measure appears to have been confusing for the participants. The scale was designed with two positive and two negative items. Therefore, participants had to read from positive to negative and back to a

positive item again. Having to switch between positive and negative appeared to cause some confusion which was reflected in low reliability and interitem correlations of the scale (in chapter 4).

Similarly, the PAW which measured supervisors' supervisory style also faced a scale validity issue consistent with that found in other studies involving employees in low-skilled occupations (Winkler et al., 2014; Winkler et al., 2015), possibly due to the scale's appearing more complex to supervisors in low-skilled occupations. The PAW requires supervisors to read eight work scenarios and provide their answer to four responses for each work scenario. As the scale required a high intensity of reading, this would have resulted in the scale's having validity issues, especially since reading and writing is not the core function of the supervisors' role (Pederson, Dresdow, & Benson, 2013). Although measures were taken to overcome the limitations and scales were carefully selected, scale validity and literacy issues with those employed in low-skilled occupations require different measures than those taken in this thesis to address those issues.

The limitations discussed here provide an opportunity for future research to consider those limitations in the design of studies involving employees in low-skilled occupations. The next section will discuss the possibilities for future research in detail.

Future Research Direction

Although the knowledge surrounding autonomy-supportive behaviours with employees in low-skilled occupations has been expanded, more studies are warranted to broaden understanding of the autonomy-supportive and controlling behaviours with employees in low-skilled occupations. As Vansteenkiste and Ryan (2013) argued, controlling behaviours could lead to the frustration of needs

and ill-being. Such a study should be conducted with employees in low-skilled occupations, as the qualitative results of the current study suggest the prevalence of controlling behaviours among managers and supervisors. With regard to the generalisability of the qualitative findings, future studies can use longitudinal, experimental, or in-depth interviews to confirm the relationships suggested in the study. Additionally, the application of SAS should also be examined and adapted to a vulnerable low-skilled working environment to establish the role of SAS on employees' well-being. While such research may appear challenging, a preliminary study such as that conducted to evaluate the newly developed AST (in chapter 3) can provide sufficient insight into the benefit of SAS and how it can be adapted to such a work environment.

Secondly, Deci et al. (2017) suggested that motivation can mediate between SAS and other work outcomes. As this thesis focuses on need satisfaction and frustration as mediating variables, future studies can consider including motivation as the mediator between SAS and work outcomes. An early study in Japan by Kumara, Hara, and Yano (1991) demonstrated that motivation moderates between supervisors' social support and job satisfaction among factory workers who have low expectation of successfully completing their tasks. Therefore, the inclusion of motivation as the mediating variable could provide insight into the role of SAS, specifically in motivating employees in such a way as to lead to positive work outcomes. Motivation can also possibly explain the weak mediation relationship between SAS, need satisfaction, and the outcome variables as discussed in research question 2.

Thirdly, researchers interested in conducting autonomy-supportive intervention studies with employees in low-skilled occupations should consider

setting up an intervention and wait list control group between organisations rather than within organisations to account for the change of department and/or supervisor in an organisation due to the change of work roster. Moreover, future research should consider factors that could affect the maintenance of SAS in the design of their autonomy-supportive intervention studies. Researchers can first conduct the AST with the managers and then with the supervisors. Such a multilevel study design will potentially allow researchers to observe the effect of the AST on managers and supervisors as well as on employees.

Additionally, researchers working with employees in low-skilled occupations should aim to gain organisational support to increase the participation rate and reduce the attrition rate in a longitudinal study. Researchers can collaborate with the organisations to grant employees permission to participate in the study during working hours. Doing so will increase the participation rate and reduce the attrition rate, as employees need not use their personal time to participate in the study. Moreover, employees may be more motivated to participate in the study if they perceive the organisation as being supportive of studies concerning their well-being. Organisations which are supportive of the study will also be open to recommendations of good practices for the well-being of employees in low-skilled occupations and supervisory skills development.

Finally, researchers aiming to conduct studies with employees in low-skilled occupations should consider developing a new scale or adapting the current scale to suit the literacy level of employees in low-skilled occupations. It is important for measures used with employees in low-skilled occupations to consider using simple language consisting of brief yet easy to understand words. Words commonly used in well-being scales such as “vitality” and “vigour” may

need to be replaced with words which suit the literacy level of employees in low-skilled occupations. Moreover, researchers aiming to develop new scales should consider the design of the scale, which ideally consists of either mainly positively or negatively worded items. Having both negatively and positively worded items such as those in PSS-4 increases the complexity and cognitive load on participants (Friborg, Martinussen, & Rosenvinge, 2006), especially if a short scale is used.

The PAW should be adapted to reduce the complexity and reading intensity of the scale. The work scenarios in the scale can be removed and the responses to the scenarios can be simplified to generic statements about the four supervisory styles which the PAW aimed to measure. For example, scenario number six in the PAW described a situation in which an employee resented an unpleasant task and the second response to the scenario stated, "Be clear with him that it is his responsibility and be sure he continues to do it". This item can be adapted by removing the scenario and changing the response to a generic statement such as "When I assign a task seen as unpleasant to my staff, I will be clear with them that it is their responsibility to complete it". Adapting or developing new scales which suit the literacy level of those employed in low-skilled occupations can potentially overcome scale validity and literacy issues when conducting research with them.

Conclusion

The focus of SDT is on wellness and human flourishing; hence, the factors leading to well-being and human flourishing are imperative in SDT research. The autonomy-supportive behaviours which lead to wellness have often been SDT's focal point; however, a focus on those behaviours is noticeably lacking when investigating employees in low-skilled occupations. This thesis began with the

development of the AST through the integration of the guide provided by other autonomy-supportive training studies (Hardré & Reeve, 2009; Reeve, 2009; Su & Reeve, 2011) and adult learning principles (Knowles et al., 2012). A preliminary evaluation conducted with supervisors in low-skilled occupations found that the AST was well-designed. Furthermore, SAS was found to have a perceived positive effect on employees' well-being and job performance, thus, demonstrating the need to promote SAS through the AST.

Although the AST was well-designed and resulted in a change of supervisory style, the outcome of the AST on employees' perceived SAS, need satisfaction, and need frustration appeared less clear. While it might seem that the AST may not have a far-reaching effect, as was initially proposed, this thesis argues that organisational factors can undermine the positive effect of the AST. This conclusion is substantiated with findings from the qualitative phase of this study. Therefore, it is crucial to undertake an organismic view in both the effort to improve employees' well-being and supervisory skills development.

To conclude, this thesis utilised open-ended, cross-sectional, longitudinal, multilevel, interview and focus group data to investigate the importance, training, and maintenance of SAS in relation to the well-being of employees in low-skilled occupations in New Zealand. It contributed to SDT research by extending AST to a neglected sector of the workforce, by testing the perceived importance of SAS on employees in low-skilled occupations, by evaluating the effectiveness of the training longitudinally, and, ultimately, by suggesting the need to take an organismic view of SAS and the well-being of employees in low-skilled occupations. The findings of this thesis provide useful information for future SDT researchers interested in conducting research with employees in low-skilled

occupations or in similar contexts where job autonomy is limited. Finally, this thesis not only provides organisations with effective training material to increase SAS, but also identifies ways to maintain SAS whereby the well-being of employees in low-skilled occupations can be sustained.

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APPENDICES

Appendix 1: The AST feedback sheet

Thank you for attending the Supportive Supervisory Style workshop. I'd like to ask you to take several minutes to provide your valuable feedback on the workshop. Your feedback will help me to evaluate the workshop and make it better. Please feel free to write your honest feedback.

1) At the end of the workshop, do you think that the content:
   a) Is reasonably applicable to your workplace? Why?

   b) Is easy to understand? If no, please describe which part(s) is difficult?

   c) Makes you think about how to practise supportive supervisory style? How?

   d) Was delivered in an effective way? Why?

2) Do you think the topics were well arranged? Why do you think so?

3) What do you think of the facilitator's:
   a) Clarity of speech

   b) Ability to keep to time and structure

4) Other comments:

Appendix 2: Consent form for supervisors

Research Project: Supportive supervisory practices and well-being at work. *Four surveys + training (for supervisors)*

Please complete the following checklist. Tick (✓) the appropriate box for each point.	**YES**	**NO**
1. I have read the Participant Information Sheet (or it has been read to me) and I understand it.		
2. I have been given sufficient time to consider whether or not to participate in this study.		
3. I am satisfied with the answers I have been given regarding the study and I have a copy of this consent form and information sheet.		
4. I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time without penalty.		
5. I have the right to decline to participate in any part of the research activity.		
6. I know who to contact if I have any questions about the study in general.		
7. I understand that my participation in this study is confidential and that no material, which could identify me personally, will be used in any reports on this study.		

Declaration by participant:

I agree to participate in this research project and I understand that I may withdraw at any time. If I have any concerns about this project, I may contact the convenor of the Psychology Research and Ethics Committee (Dr Rebecca Sargisson, phone 07 557 8673, email: rebeccas@waikato.ac.nz)

Participant's name (Please print):

Signature: Date:

Declaration by member of research team:

I have given a verbal explanation of the research project to the participant, and have answered the participant's questions about it. I believe that the participant understands the study and has given informed consent to participate.

Researcher's name (Please print):

Signature: Date:

Appendix 3: Survey form for supervisors

Supportive supervisory practices and well-being at work (For supervisors).

Thank you for participating in this survey! By taking part in this survey, you will help us to understand your supervisory style in relation to supportive practices. As part of the study, a supportive supervisory training program will be provided to you and this survey will also be used to evaluate the effectiveness of the program. Through this study, we hope to help you understand supportive supervisory practices that will be useful in your interactions with the employees and in your daily life too. We would like to invite you to complete the questionnaire which will take approximately 20 minutes your time.

The survey consists of 3 topics:

1. Your supervisory style and how you support the employees.
2. Your motivation at work and well-being
3. Demographic information

The answers you provide are anonymous and cannot be linked to your identity in any way. Participation in this study is voluntary and you can stop taking part in the study at any time. As the answers you provide are anonymous, the result of it will in no way affect the judgment of your performance outcome by your supervisors or the management.

The findings of this study will be used as part of a PhD thesis, publications of academic journals and will be presented at relevant conferences. This study is conducted in fulfilment of the requirements of PhD in School of Psychology, University of Waikato.

For more information or to voice your concerns, please contact the principal researcher: Amy Yong (amypcyong@yahoo.com) or the supervisors: Dr. Maree Roche (maree.roche@waikato.ac.nz), Dr. Anna Sutton (anna.sutton@waikato.ac.nz) and Dr. Jaimie Veale (jaimie.veale@waikato.ac.nz).

This research project has been approved by the School of Psychology Research and Ethics Committee of the Faculty of Arts and Social Sciences, University of Waikato. Any questions about the ethical conduct of this research may be sent to the convenor of the Research and Ethics Committee currently Dr. Rebecca Sargisson, phone 07 557 8673, email: rebeccas@waikato.ac.nz

Flip over to start the survey.

A: Your supervisory style (PAW)

On the following pages, you will find eight short descriptions. Each one describes an incident and then lists four ways of responding to the situation. Think about each response option in terms of how appropriate you consider it to be as a means of dealing with the problem described in the description, and then rate it on the seven-point scale. Please rate each of the four items for each description. There are eight descriptions with four options for each, for a total of 32 items.

There are no right or wrong ratings on these items. We are simply interested in what you consider appropriate.

In each case, the stories ask about what is the appropriate thing for the supervisor to do. Some portray you as the supervisor and some ask what you think is appropriate for another supervisor to do. While some of these situations may not be ones that would arise in your specific work, simply imagine what it would be like for you in that situation, and respond accordingly.

1. Jim, an employee for several years, has generally done work on a par with others in his branch. However, for the past couple of weeks, he has appeared preoccupied and listless. The work he has done is good but he has made fewer calls than usual. For each item, choose one of the responses below to indicate what you think is the most appropriate thing for Jim's supervisor to do:

No	Items	Highly inappropriate	Moderately inappropriate	Inappropriate	Neutral	Appropriate	Moderately appropriate	Highly appropriate
A1	Impress upon Jim that it is really important to keep up with his work for his own good.	1	2	3	4	5	6	7
A2	Talk to Jim and try to help him work out the cause of his listlessness.	1	2	3	4	5	6	7
A3	Warn him that if he continues to work at a slower rate, some negative action might be taken.	1	2	3	4	5	6	7
A4	Let him see how his productivity compares with that of his co-workers and encourage him to catch up.	1	2	3	4	5	6	7

2. Nancy, one of your employees, has been going to night school working toward her degree. She has been working hard at it, doing extremely well and is proud of her accomplishments. However, you are concerned, because she is very hard to work with whenever the pressure at school is high. For each item, choose one of the responses below to indicate what you think is the most appropriate thing to do:

No	Items	Highly inappropriate	Moderately inappropriate	Inappropriate	Neutral	Appropriate	Moderately appropriate	Highly appropriate
A5	Ask her to talk out how she plans to handle the situation.	1	2	3	4	5	6	7
A6	Tell her that she ought to watch the balance between work and school and suggest she put more of her energies into her job.	1	2	3	4	5	6	7
A7	Point out how other working "students" have handled the problem and see if that helps her handle the situation better.	1	2	3	4	5	6	7
A8	Insist that she cut down on the studying or take fewer courses; you can't allow it to interfere with work.	1	2	3	4	5	6	7

3. One of the work teams in another branch has been doing more poorly than the other groups all year. For each item, choose one of the responses below to indicate what you think is the most appropriate thing for that manager to do:

No	Items	Highly inappropriate	Moderately inappropriate	Inappropriate	Neutral	Appropriate	Moderately appropriate	Highly appropriate
A9	Tell them that performance has to improve and offer them tangible incentives to improve.	1	2	3	4	5	6	7
A10	Let them know how the other teams are performing so they will be motivated to do as well.	1	2	3	4	5	6	7
A11	Have some discussions with the team as a whole and facilitate their devising some solutions for improving output.	1	2	3	4	5	6	7
A12	Keep a record of each individual's productivity and emphasize that it is an important performance index.	1	2	3	4	5	6	7

4. For some time Jack's down times have been at a steady, average level. You suspect however that he could do better. For each item, choose one of the responses below to indicate what you think is the most appropriate thing to do:

No	Items	Highly inappropriate	Moderately inappropriate	Inappropriate	Neutral	Appropriate	Moderately appropriate	Highly appropriate
A13	Encourage Jack to talk about his performance and whether there are ways to improve.	1	2	3	4	5	6	7
A14	Stress to Jack that he should do better, and that he won't get ahead if he continues at his current level.	1	2	3	4	5	6	7
A15	Go over your evaluation with him and point out his relative standing with others.	1	2	3	4	5	6	7
A16	Watch him more closely; praise him for increased output, and point out whenever he falls behind.	1	2	3	4	5	6	7

5. Recent changes in the operation have resulted in a heavier work load for all the employees. Barbara, the manager, had hoped the situation would be temporary, but today she learned that her branch would need to continue to work with the reduced staff for an indefinite period. For each item, choose one of the responses below to indicate what you think is the most appropriate thing for Barbara to do:

No	Items	Highly inappropriate	Moderately inappropriate	Inappropriate	Neutral	Appropriate	Moderately appropriate	Highly appropriate
A17	Point out that her employees will keep their own jobs only if they can remain productive at the current rate; and then watch their output carefully.	1	2	3	4	5	6	7
A18	Explain the situation and see if they have suggestions about how they could meet the current demands.	1	2	3	4	5	6	7
A19	Tell all of her employees that they should keep trying because it is to their advantage to do so.	1	2	3	4	5	6	7
A20	Encourage her employees to keep up with the work load by pointing out that people are doing it adequately in other branches.	1	2	3	4	5	6	7

6. There is one assignment in your territory which is regarded by all as the worst. It involves a regular visit to an unpleasant building to work on equipment that is typically abused. It has been given to the employee with the least seniority. However, Dave, the man currently assigned to this job has been doing it for some time, as no one new has been hired. While he is generally very cooperative and satisfied in other respects, Dave seems to be increasingly resentful about this job, in part because it's an object of jokes and chiding from his peers. For each item, choose one of the responses below to indicate what you think is the most appropriate thing for Dave's manager to do:

No	Items	Highly inappropriate	Moderately inappropriate	Inappropriate	Neutral	Appropriate	Moderately appropriate	Highly appropriate
A21	Let him know that the other people at his level also have to put up with unpleasant aspects of their jobs, and give him a few examples of these.	1	2	3	4	5	6	7
A22	Be clear with him that it is his responsibility and be sure he continues to do it.	1	2	3	4	5	6	7
A23	Talk to him about the job, see if he can work through some of his feelings about it and the jokes that get directed at him.	1	2	3	4	5	6	7
A24	Point out that the job is fairly assigned based upon seniority, and that such a system works for Dave's own good as well as others'.	1	2	3	4	5	6	7

7. Harry, who manages the parts department, seems to be creating something of a bottleneck. Important parts are often "on order" and not in stock, and he often is slow in meeting short notice demands and "emergency" situations. For each item, choose one of the responses below to indicate what you think is the most appropriate thing for his supervisor to do:

No	Items	Highly inappropriate	Moderately inappropriate	Inappropriate	Neutral	Appropriate	Moderately appropriate	Highly appropriate
A25	Emphasize how important it is for him to keep up with orders and emphasize that he should meet ongoing demands.	1	2	3	4	5	6	7
A26	Let him know how other people in comparable positions are managing to keep up, so he can think about it. This might help him figure out how to better keep up.	1	2	3	4	5	6	7
A27	Insist that the orders be done within a specified time limit, and check to be sure he is meeting the deadlines.	1	2	3	4	5	6	7
A28	Find out from Harry what he thinks is wrong and see if you can help him figure out how to better organize his operation.	1	2	3	4	5	6	7

8. One of the customers has let you know that he is not very satisfied with the attitude of his service representative. For each item, choose one of the responses below to indicate what you think is the most appropriate thing for you to do:

No	Items	Highly inappropriate	Moderately inappropriate	Inappropriate	Neutral	Appropriate	Moderately appropriate	Highly appropriate
A29	Raise the matter with your subordinate to see what has been going on for him in dealing with that customer.	1	2	3	4	5	6	7
A30	Point out that customer satisfaction is important and that he should work on relating better to the customer.	1	2	3	4	5	6	7
A31	Show him some ways that others relate to their customers so he can compare his own style to others.	1	2	3	4	5	6	7
A32	Tell him to see to it that the customer is more satisfied and let him know you will be checking up on him.	1	2	3	4	5	6	7

B: Giving support to my employees (IS)

In the last **FOUR** weeks, in my interactions with my employees, I have….

No	Items	Not at all	Infrequently	Neutral	Frequently	Very frequently
B1	Considered my employees' inputs, suggestions and feedback.	1	2	3	4	5
B2	Acknowledged my employees' negative feelings when I assigned tasks that are not of their interest and preference.	1	2	3	4	5
B3	Provided meaningful reasoning for the tasks assigned.	1	2	3	4	5
B4	Minimized the use of controlling language such as 'should', 'must' or 'have to'.	1	2	3	4	5
B5	Offered opportunity for my employees to determine the ways to accomplish tasks.	1	2	3	4	5
B6	Assigned tasks with acceptable challenges that will encourage and maintain my employees' interest in the tasks.	1	2	3	4	5
B7	Provided my employees with opportunity for social interaction in the workplace.	1	2	3	4	5
B8	Considered my employees' personal growth and career development in the planning of tasks.	1	2	3	4	5

C: Your motivation at work (BPNSF-W)

Instructions: The following questions concern your feelings about your job during the PAST 4 WEEKS. Please indicate how much you agree with each of the following statements given your experiences on this job. Remember that your supervisor will never know how you responded to the questions.

Please circle **one** number below to indicate how strongly you agree or disagree with each statement ranging from 1, strongly disagree to 7, strongly agree.

No	Item	Strongly Disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
C1	At work, I feel a sense of choice and freedom in the things I undertake.	1	2	3	4	5	6	7
C2	I feel excluded from the group I want to belong to at work.	1	2	3	4	5	6	7
C3	I feel confident that I can do things well on my job.	1	2	3	4	5	6	7
C4	I feel that the people I care at work about also care about me.	1	2	3	4	5	6	7
C5	Most of the things I do on my job feel like “I have to”.	1	2	3	4	5	6	7
C6	When I am at work, I have serious doubts about whether I can do things well.	1	2	3	4	5	6	7
C7	I feel that my decisions on my job reflect what I really want.	1	2	3	4	5	6	7
C8	I feel that people who are important to me at work are cold and distant towards me.	1	2	3	4	5	6	7
C9	At work, I feel capable at what I do.	1	2	3	4	5	6	7
C10	I feel forced to do many things on my job I wouldn’t choose to do.	1	2	3	4	5	6	7
C11	I feel disappointed with my performance in my job.	1	2	3	4	5	6	7
C12	I feel connected with people who care for me at work, and for whom I care at work.	1	2	3	4	5	6	7
C13	I feel my choices on my job express who I really am.	1	2	3	4	5	6	7
C14	When I am at work, I feel competent to achieve my goals.	1	2	3	4	5	6	7
C15	I feel pressured to do too many things on my job.	1	2	3	4	5	6	7

No	Item	Strongly Disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
C16	At work, I feel close and connected with other people who are important to me.	1	2	3	4	5	6	7
C17	I feel insecure about my abilities on my job.	1	2	3	4	5	6	7
C18	My daily activities at work feel like a chain of obligations.	1	2	3	4	5	6	7
C19	I feel I have been doing what really interests me in my job.	1	2	3	4	5	6	7
C20	I have the impression that people I spend time with at work dislike me.	1	2	3	4	5	6	7
C21	In my job, I feel I can successfully complete difficult tasks.	1	2	3	4	5	6	7
C22	I feel the relationships I have at work are just superficial.	1	2	3	4	5	6	7
C23	When I am working I feel like a failure because of the mistakes I make.	1	2	3	4	5	6	7
C24	I experience a warm feeling with the people I spend time with at work.	1	2	3	4	5	6	7

D: How you feel at work (WHO-5)

Please indicate for each of the five statements on how you have been feeling over the last **FOUR** weeks. Circle **one** number below from 0, at no time to 5, all of the time.

No	Items	All of the time	Most of the time	More than half of the time	Less than half of the time	Some of the time	At no time
D1	I have felt cheerful and in good spirits at work.	5	4	3	2	1	0
D2	I have felt calm and relaxed at work.	5	4	3	2	1	0
D3	I have felt active and vigorous at work.	5	4	3	2	1	0
D4	I woke up to work feeling fresh and rested.	5	4	3	2	1	0
D5	My daily life at work has been filled with things that interest me.	5	4	3	2	1	0

E: Demographic Information

This section consists of personal information that we will collect from you. This information is very important to help us understand you as our participant and to relate it to the effectiveness of the supportive supervisory training program. We assure you that the answers you provide cannot be linked to your identity and it will remain anonymous.

E1. How old are you?

□ 16 – 20 years
□ 21 – 25 years
□ 26 – 30 years
□ 31 – 35 years
□ 36 – 40 years
□ 41 – 45 years
□ 46 – 50 years
□ 51 – 55 years
□ 56 – 60 years
□ 61 – 65 years
□ 66 years and above

E2. What is your gender?

_____

E3. What is your ethnicity?

_____

E4. How long have you been working in this organization?

_____ year(s) _____ month(s)

E5. How long have you been in a supervisory position in this organization?

_____ year(s) _____ month(s)

F: Your Unique Code

In this section, we will ask you 2 questions that are unique to you. The answers to these questions will enable us to identify each of your four survey forms as belonging to you. Your anonymity in this study will not be compromised. Only the researcher will have access to your survey forms.

F1. What is your birth date and month (e.g. 28/08)?

_____

F2. What are the last 4 digits of your mobile number?

_____

You have come to the end of the survey. Thank you for your participation! Please return the completed survey form to the principal researcher.

After this survey, there will be a training program organized for you on supportive supervisory practices. An email invitation with the date and time of the training will be sent to you. We look forward to your participation in the training.

Appendix 4: Consent form for employees

Research Project: Supportive supervisory practices and well-being at work.

Please complete the following checklist. Tick (✓) the appropriate box for each point.	**YES**	**NO**
1. I have read the Participant Information Sheet (or it has been read to me) and I understand it.		
2. I have been given sufficient time to consider whether or not to participate in this study.		
3. I am satisfied with the answers I have been given regarding the study and I have a copy of this consent form and information sheet.		
4. I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time without penalty.		
5. I have the right to decline to participate in any part of the research activity.		
6. I know who to contact if I have any questions about the study in general.		
7. I understand that my participation in this study is confidential and that no material, which could identify me personally, will be used in any reports on this study.		

Declaration by participant:

I agree to participate in this research project and I understand that I may withdraw at any time. If I have any concerns about this project, I may contact the convenor of the Psychology Research and Ethics Committee (Dr Rebecca Sargisson, phone 07 557 8673, email: rebeccas@waikato.ac.nz)

Participant's name (Please print):

Signature: Date:

Declaration by member of research team:

I have given a verbal explanation of the research project to the participant, and have answered the participant's questions about it. I believe that the participant understands the study and has given informed consent to participate.

Researcher's name (Please print):

Signature: Date:

Appendix 5: Survey form for employees

Supportive supervisory practices and well-being at work (For employees).

Thank you for participating in this survey! By taking part in this survey, you will help us to understand your (1) view of your supervisors' supportiveness; (2) how you feel at work; and (3) how well you're doing at work. As part of the study involved a supportive supervisory training program where we will provide for your supervisors, your answers will also be used to evaluate the effectiveness of the program. The outcome of this survey will also help us to provide recommendations for the improvement of your well-being at work. We would like to invite you to complete the questionnaire which will take approximately 20 minutes your time.

The survey consists of 3 main topics which are:

1. The level of support you received from your supervisor and their supervisory style.
2. Your motivation, feeling and view of how you are doing at work.
3. Demographic information

The answers you provide are anonymous and cannot be linked to your identity in any way. Participation in this study is voluntary and you can stop taking part in the study at any time. As the answers you provide are anonymous, the result of it will in no way affect the judgment of your performance outcome by your supervisors or the management.

The findings of this study will be used as part of a PhD thesis, publications of academic journals and will be presented at relevant conferences. This study is conducted in fulfilment of the requirements of PhD in School of Psychology, University of Waikato.

For more information or to voice your concerns, please contact the principal researcher: Amy Yong (amypcyong@yahoo.com) or the supervisors: Dr. Maree Roche (maree.roche@waikato.ac.nz), Dr. Anna Sutton (anna.sutton@waikato.ac.nz) and Dr. Jaimie Veale (jaimie.veale@waikato.ac.nz).

This research project has been approved by the School of Psychology Research and Ethics Committee of the Faculty of Arts and Social Sciences, University of Waikato. Any questions about the ethical conduct of this research may be sent to the convenor of the Research and Ethics Committee currently Dr. Rebecca Sargisson, phone 07 557 8673, email: rebeccas@waikato.ac.nz

Flip over to start the survey.

A: The level of support you received from your supervisor (PASS)

This questionnaire contains items that are related to your experience with your most immediate supervisor. Managers have different styles in dealing with employees, and we would like to know more about how you have felt about your interactions with your manager. Your responses are confidential.

Please circle **one** number below to indicate how strongly you agree or disagree with each statement ranging from 1, strongly disagree to 7, strongly agree.

No	Item	Strongly Disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
A1	I feel that my manager provides me choices and options.	1	2	3	4	5	6	7
A2	I feel understood by my manager.	1	2	3	4	5	6	7
A3	I am able to be open with my manager at work.	1	2	3	4	5	6	7
A4	My manager conveyed confidence in my ability to do well at my job.	1	2	3	4	5	6	7
A5	I feel that my manager accepts me.	1	2	3	4	5	6	7
A6	My manager made sure I really understood the goals of my job and what I need to do.	1	2	3	4	5	6	7
A7	My manager encouraged me to ask questions.	1	2	3	4	5	6	7
A8	I feel a lot of trust in my manager.	1	2	3	4	5	6	7
A9	My manager answers my questions fully and carefully.	1	2	3	4	5	6	7
A10	My manager listens to how I would like to do things.	1	2	3	4	5	6	7
A11	My manager handles people's emotions very well.	1	2	3	4	5	6	7
A12	I feel that my manager cares about me as a person.	1	2	3	4	5	6	7
A13	I don't feel very good about the way my manager talks to me.	1	2	3	4	5	6	7
A14	My manager tries to understand how I see things before suggesting a new way to do things.	1	2	3	4	5	6	7
A15	I feel able to share my feelings with my manager.	1	2	3	4	5	6	7

B: Your motivation at work (BPNSF-W)

Instructions: The following questions concern your feelings about your job during the PAST 4 WEEKS. Please indicate how much you agree with each of the following statements given your experiences on this job. Remember that your supervisor will never know how you responded to the questions.

Please circle **one** number below to indicate how strongly you agree or disagree with each statement ranging from 1, strongly disagree to 7, strongly agree.

No	Item	Strongly Disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
B1	At work, I feel a sense of choice and freedom in the things I undertake.	1	2	3	4	5	6	7
B2	I feel excluded from the group I want to belong to at work.	1	2	3	4	5	6	7
B3	I feel confident that I can do things well on my job.	1	2	3	4	5	6	7
B4	I feel that the people I care at work about also care about me.	1	2	3	4	5	6	7
B5	Most of the things I do on my job feel like “I have to”.	1	2	3	4	5	6	7
B6	When I am at work, I have serious doubts about whether I can do things well.	1	2	3	4	5	6	7
B7	I feel that my decisions on my job reflect what I really want.	1	2	3	4	5	6	7
B8	I feel that people who are important to me at work are cold and distant towards me.	1	2	3	4	5	6	7
B9	At work, I feel capable at what I do.	1	2	3	4	5	6	7
B10	I feel forced to do many things on my job I wouldn’t choose to do.	1	2	3	4	5	6	7
B11	I feel disappointed with my performance in my job.	1	2	3	4	5	6	7
B12	I feel connected with people who care for me at work, and for whom I care at work.	1	2	3	4	5	6	7
B13	I feel my choices on my job express who I really am.	1	2	3	4	5	6	7
B14	When I am at work, I feel competent to achieve my goals.	1	2	3	4	5	6	7
B15	I feel pressured to do too many things on my job.	1	2	3	4	5	6	7

No	Item	Strongly Disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
B16	At work, I feel close and connected with other people who are important to me.	1	2	3	4	5	6	7
B17	I feel insecure about my abilities on my job.	1	2	3	4	5	6	7
B18	My daily activities at work feel like a chain of obligations.	1	2	3	4	5	6	7
B19	I feel I have been doing what really interests me in my job.	1	2	3	4	5	6	7
B20	I have the impression that people I spend time with at work dislike me.	1	2	3	4	5	6	7
B21	In my job, I feel I can successfully complete difficult tasks.	1	2	3	4	5	6	7
B22	I feel the relationships I have at work are just superficial.	1	2	3	4	5	6	7
B23	When I am working I feel like a failure because of the mistakes I make.	1	2	3	4	5	6	7
B24	I experience a warm feeling with the people I spend time with at work.	1	2	3	4	5	6	7

C: How you feel
At work (WHO-5)

Please indicate for each of the five statements on how you have been feeling over the last **FOUR** weeks. Circle **one** number below from 0, at no time to 5, all of the time.

No	Items	At no time	Some of the time	Less than half of the time	More than half of the time	Most of of the time	All the time
C1	I have felt cheerful and in good spirits at work.	0	1	2	3	4	5
C2	I have felt calm and relaxed at work.	0	1	2	3	4	5
C3	I have felt active and vigorous at work.	0	1	2	3	4	5
C4	I woke up to work feeling fresh and rested.	0	1	2	3	4	5
C5	My daily life at work has been filled with things that interest me.	0	1	2	3	4	5

In general (PSS-4)

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, please circle one number below from 0, never to 4, very often.

No	Items	Never	Almost never	Sometimes	Fairly often	Very often
C6	In the last month, how often have you felt that you were unable to control the important things in your life?	0	1	2	3	4
C7	In the last month, how often have you felt confident about your ability to handle your personal problems?	0	1	2	3	4
C8	In the last month, how often have you felt that things were going your way?	0	1	2	3	4
C9	In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	0	1	2	3	4

D: How well you are doing at work (JP)

In the last **FOUR** weeks you worked, how well did you . . .

No	Items	Very poorly	Poorly	Fair	Well	Exceptionally well
D1	handle the responsibilities and daily demands of your work?	1	2	3	4	5
D2	make the right decisions?	1	2	3	4	5
D3	perform without mistakes?	1	2	3	4	5
D4	get things done on time?	1	2	3	4	5
D5	get along with others at work?	1	2	3	4	5
D6	avoid arguing with others?	1	2	3	4	5
D7	handle disagreements by compromising and meeting other people half-way?	1	2	3	4	5

E: Your supervisor's supervisory style (IS)

In the last **FOUR** weeks at work, I think….

No	Items	Not at all	Infrequently	Neutral	Frequently	Very frequently
E1	My supervisor considered my inputs, suggestions and feedback.	1	2	3	4	5
E2	My supervisor acknowledged my negative feelings when I am assigned tasks that are not of my interest and preference.	1	2	3	4	5
E3	My supervisor provided meaningful reasoning for the tasks assigned.	1	2	3	4	5
E4	My supervisor minimized the use of controlling language such as 'should', 'must' or 'have to'.	1	2	3	4	5
E5	My supervisor offered opportunity for me to determine the ways to accomplish tasks.	1	2	3	4	5
E6	My supervisor assigned tasks with acceptable challenges that will encourage and maintain my interest in the tasks.	1	2	3	4	5
E7	My supervisor provided me with opportunity for social interaction in the work community.	1	2	3	4	5
E8	My supervisor considered my personal growth and career development in the planning of tasks.	1	2	3	4	5
E9	Overall, my work experiences have improved.	1	2	3	4	5

F: Demographic information

This section consists of personal information that we will collect from you. These information are very important to help us understand you as our participants and to relate it to the effectiveness of the supportive supervisory training program. We assure you that the answers you provide cannot be linked to your identity and it will remain anonymous.

F1. What is your age?

_____

F2. What is your gender?

_____

F3. What is your ethnicity?

_____

F4. How long have you been working in this organization?

_____year(s) _____month(s)

F5. How long have you been working with your current work supervisor?

_____year(s) _____month(s)

F6. How many day(s) were you absent from work due to sickness in the past 4 weeks?

_____ day(s)

F7. Please tick the box that describes your employment:

☐ Permanent full-time

☐ Permanent part-time

☐ Fixed term (full/part-time for more than 6 months)

☐ Others

G: Your Unique Code

In this section, we will ask you 2 questions that are unique to you. The answers to these questions will enable us to identify each of your four survey forms as belonging to you. Your anonymity in this study will not be compromised. Only the researcher will have access to your survey forms.

G1. What is your birth date and month (e.g. 28/08)?

_____

G2. What are the last 4 digits of your mobile number?

_____

You have come to the end of the survey. Thank you for your participation! Please return the completed survey form to the principal researcher.

Appendix 6: Information sheet for focus group

Relationship between supportive leadership and psychological well-being and job performance.

Thank you for participating in the training and surveys we have held for you. By taking part in this discussion, you will help us to understand your (1) relationship with the employees and organisation; and (2) your role as a supervisor. Your answers will help us to provide recommendations for the improvement of the employees' and your well-being. We would like to invite you to the group discussion which will take approximately 30 minutes of your time.

The questions that will be asked during the discussion is as follow:

1. Tell me how you/ if you can relate to staff in your area of supervision?
2. Tell me about the relationship you have with your own supervisors/bosses?
3. What kind of change and pressure do you have in your role? How frequent is this?

Additional questions we might ask is as follow:

1. What are the frequencies of contact you have with the employees?
2. How would you describe your relationship with the employees?
3. How would you describe your relationship with your immediate supervisor/manager?

This discussion will be recorded via audio recording. You will not be required to provide information in the discussion that may link you to your identity. The answers you provide are anonymous and the recording will be accessed by the principal researcher and the supervisors of the principal researcher only. You can stop taking part in the study at any time. As the answers you provide are anonymous, the result of it will in no way affect the judgement of your performance outcome by your supervisors or the management.

The findings of this study will be used as part of a PhD thesis, publications of academic journals and will be presented at relevant conferences. This study is conducted in fulfillment of the requirements of PhD in School of Psychology, University of Waikato.

For more information or to voice your concerns, please contact the principal researcher: Amy Yong (amypcyong@yahoo.com) or the supervisors: Dr Maree Roche (maree.roche@waikato.ac.nz), Dr. Anna Sutton (anna.sutton@waikato.ac.nz) and Dr Jaimie Veale (jaimie.veale@waikato.ac.nz).

This research project has been approved by the School of Psychology Research and Ethics Committee of the Faculty of Arts and Social Sciences, University of Waikato. Any questions about the ethical conduct of this research may be sent to the convenor of the Research and Ethics Committee (currently Dr Rebecca Sargisson, phone 07 837 9580, email: rebecca.sargisson@waikato.ac.nz

Appendix 7: Consent form for focus group

CONSENT FORM

Research Project: Relationship between supportive leadership and psychological well-being and job performance.

Please complete the following checklist. Tick (✓) the appropriate box for each point.	YES	NO
1. I have been briefed and provided the information sheet about the discussion group.		
2. I have been given sufficient time to consider whether or not to participate in this study.		
3. I am satisfied with the answers I have been given regarding the study and I have a copy of this consent form and information sheet.		
4. I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time without penalty.		
5. I have the right to decline to participate in any part of the research activity.		
6. I know who to contact if I have any questions about the study in general.		
7. I understand that the information supplied by me could be used in future academic publications.		
8. I agreed to an audio recording of this discussion.		
9. I understand that my participation in this study is confidential and that no material, which could identify me personally, will be used in any reports on this study.		

Declaration by participant:
I agree to participate in this research project and I understand that I may withdraw at any time. If I have any concerns about this project, I may contact the convenor of the Psychology Research and Ethics Committee (Dr Rebecca Sargisson, phone 07 837 9580, email: rebecca.sargisson@waikato.ac.nz)

Participant's name (Please print): _____

Signature: _____ Date: _____

Declaration by member of research team:
I have given a verbal explanation of the research project to the participant, and have answered the participant's questions about it. I believe that the participant understands the study and has given informed consent to participate.

Researcher's name (Please print): _____

Signature: _____ Date: _____

Appendix 8: Co-authorship form (Chapter 3)

THE UNIVERSITY OF WAIKATO
Te Whare Wānanga o Waikato

Co-Authorship Form

Postgraduate Studies Office
Student and Academic Services Division
Wahanga Ratonga Matauranga Akonga
The University of Waikato
Private Bag 3105
Hamilton 3240, New Zealand
Phone +64 7 838 4439
Website: http://www.waikato.ac.nz/sasd/postgraduate/

This form is to accompany the submission of any PhD that contains research reported in published or unpublished co-authored work. **Please include one copy of this form for each co-authored work.** Completed forms should be included in your appendices for all the copies of your thesis submitted for examination and library deposit (including digital deposit).

Please indicate the chapter/section/pages of this thesis that are extracted from a co-authored work and give the title and publication details or details of submission of the co-authored work.

Chapter 3 – Supervisory skills training for the neglected supervisors: Development and preliminary evaluation of an autonomy-supportive programme.

Nature of contribution by PhD candidate	I developed the training material for the paper. I took the whole responsibility for conducting the training and completing the data collection. I was also responsible for the qualitative analysis of the data. I wrote the first full draft of the paper. The theoretical contributions are my own.
Extent of contribution by PhD candidate (%)	80

CO-AUTHORS

Name	Nature of Contribution
Maree Roche	Provided feedback on the paper and editing.
Anna Sutton	Provided feedback on the paper and editing.

Certification by Co-Authors

The undersigned hereby certify that:

- the above statement correctly reflects the nature and extent of the PhD candidate's contribution to this work, and the nature of the contribution of each of the co-authors; and

Name	Signature	Date
Maree Roche		16/8/19.
Anna Sutton		16/8/19

July 2015

Appendix 9: Co-authorship form (Chapter 4)

THE UNIVERSITY OF WAIKATO
Te Whare Wānanga o Waikato

Co-Authorship Form

Postgraduate Studies Office
Student and Academic Services Division
Wahanga Ratonga Matauranga Akonga
The University of Waikato
Private Bag 3105
Hamilton 3240, New Zealand
Phone +64 7 838 4439
Website: http://www.waikato.ac.nz/sasd/postgraduate/

This form is to accompany the submission of any PhD that contains research reported in published or unpublished co-authored work. **Please include one copy of this form for each co-authored work.** Completed forms should be included in your appendices for all the copies of your thesis submitted for examination and library deposit (including digital deposit).

Please indicate the chapter/section/pages of this thesis that are extracted from a co-authored work and give the title and publication details or details of submission of the co-authored work. Chapter 4 – Psychological autonomy and well-being of employees in low-skilled occupations.	
Nature of contribution by PhD candidate	I developed the theoretical model for the paper. I took the whole responsibility for launching and completing the data collection. I was also responsible for data entry and screening, and the initial statistical analysis for the paper which was done in SPSS and then mediation analysis via Process version 3.0. I wrote the first full draft of the paper. The theoretical contributions are my own.
Extent of contribution by PhD candidate (%)	80

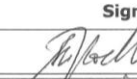
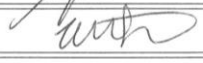
CO-AUTHORS

Name	Nature of Contribution
Maree Roche	Provided feedback on the theoretical aspects of the paper and editing.
Anna Sutton	Provided feedback on the statistical aspects of the paper and editing.

Certification by Co-Authors

The undersigned hereby certify that:

- the above statement correctly reflects the nature and extent of the PhD candidate's contribution to this work, and the nature of the contribution of each of the co-authors; and

Name	Signature	Date
Maree Roche		16/8/19
Anna Sutton		16/8/19

July 2015

Appendix 10: Co-authorship form (Chapter 5)

THE UNIVERSITY OF WAIKATO
Te Whare Wānanga o Waikato

Co-Authorship Form

Postgraduate Studies Office
Student and Academic Services Division
Wahanga Ratonga Matauranga Akonga
The University of Waikato
Private Bag 3105
Hamilton 3240, New Zealand
Phone +64 7 838 4439
Website: http://www.waikato.ac.nz/sasd/postgraduate/

This form is to accompany the submission of any PhD that contains research reported in published or unpublished co-authored work. **Please include one copy of this form for each co-authored work.** Completed forms should be included in your appendices for all the copies of your thesis submitted for examination and library deposit (including digital deposit).

Please indicate the chapter/section/pages of this thesis that are extracted from a co-authored work and give the title and publication details or details of submission of the co-authored work.

Chapter 5 – Training and maintaining autonomy-supportive supervisory style in low-skilled occupations.

Nature of contribution by PhD candidate	I developed the theoretical model for the paper. I took the whole responsibility for launching and completing the data collection. I was also responsible for data entry and screening, and the statistical analysis for the paper which was done in SPSS. I transcribed the focus groups and interview data, and was responsible for the initial qualitative data analysis. I wrote the first full draft of the paper. The theoretical contributions are my own.
Extent of contribution by PhD candidate (%)	80

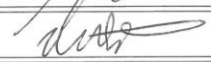
CO-AUTHORS

Name	Nature of Contribution
Maree Roche	Provided feedback on the theoretical aspects and qualitative analysis of the paper and editing.
Anna Sutton	Provided feedback on the quantitative and qualitative analysis of the paper and editing.

Certification by Co-Authors

The undersigned hereby certify that:

- the above statement correctly reflects the nature and extent of the PhD candidate's contribution to this work, and the nature of the contribution of each of the co-authors; and

Name	Signature	Date
Maree Roche		16/8/19
Anna Sutton		16/8/19

July 2015