

**ORGANISATIONAL FACTORS THAT  
INFLUENCE PARTICIPATION IN A  
WELLBEING INITIATIVE**

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A thesis submitted in partial fulfilment of the requirements for the Degree  
of

**Master of Science in Applied Psychology**

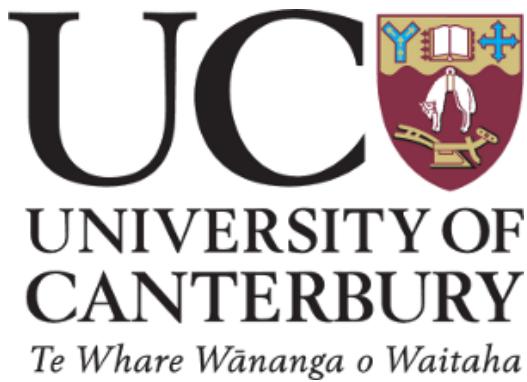
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## **Abstract**

The workplace is a good setting through which health can be promoted. However, workplace health promotion requires employees participate for benefits to be realised. This study aimed to assess how organisational factors affect participation in a wellbeing activity examining the moderating role of work control and the mediating role of participation intentions. 125 people completed a survey assessing organisational factors, work control, and participation intentions, then were offered a free online game to improve wellbeing: The Wellbeing Game. Actual participation was assessed by examining whether individuals made a login to game's website or not. Data was analysed in multiple regression with moderation and mediation. The results suggest supervisor support and organisational trust were related to intentions to participate in The Wellbeing Game, and the relationship between emotional people demands and participation intentions was moderated by work control. Participation intentions acted as a mediator between work perceptions and actual participation. Availability of workplace health promotion during work hours and variable work schedules were found to be directly related to actual participation, without participation intentions mediating the relationship. These findings have theoretical and practical importance in understanding how organisational factors play a role in employees participating in wellbeing initiatives such as The Wellbeing Game.

*Keywords:* Workplace Health Promotion, Participation, Participation Intentions, Wellbeing, Work Environment, Work Perceptions, Work Structure.

## Introduction

The workplace is a well-documented channel through which health promotion can take place (Robroek, van Lenthe, van Empelen, & Burdorf, 2009). Working adults spend a large proportion of their life at work and exposure to health promotion may be more substantial in work settings than in other community settings (Dishman, Oldenburg, O’Neal, & Shephard, 1998; Person, Colby, Bulova, & Eubanks, 2010). For health promotion efforts to realise their potential in improving health of employees and the community at large, they must have an effective means of recruiting employees and encouraging participation, particularly those who have an at-risk status of health (Spilman, 1988). Participation rates documented in research, however, remain typically below 50% (Robroek et al., 2009). Workplace Health Promotion (WHP) can only be effective when employees who are able to participate in the programmes made available to them actually participate (Dishman et al., 1998; Fielding, 1984; Robroek et al., 2009), thus identification of factors that an organisation can monitor and modify in order to realise the potential of workplace health promotion is paramount. While an organisation cannot change factors pertaining to the individual (such as gender or age), barriers imposed by the organisation may be more malleable (Kilpatrick, Blizzard, Sanderson, Teale, & Venn, 2015).

The purpose of the current study is to test the relationship between organisational factors believed to impact WHP participation and assess how these organisational factors affect intentions to participate in a wellbeing initiative. In addition to testing organisational level factors, work control will be tested as a potential buffer to barriers imposed as employees with the freedom to adjust their own work conditions may be better equipped to participate in health promotion despite barriers imposed (Jorgensen, Villadsen, Burr, Punnett, & Holtermann, 2016). Finally, this study will assess whether intentions to participate translate to actual participation after data collection, or whether the gap between behavioural intentions and

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execution needs to be bridged with other organisational intervention. The study will provide insight into what factors an organisation needs to monitor and modify to ensure a diverse workforce participates in WHP initiatives so that employees, communities, and organisations experience the spectrum of positive outcomes associated with effective WHP implementation.

### **Defining Health and Wellbeing**

Health has been defined by the World Health Organisation (WHO) as “a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity” (WHO, 1948). This definition of health recognises that physical, mental and social wellbeing are all integral aspects of health and that health is not merely a reactive approach to illness, but a nurturance of good health. However, this definition of health is unusable as a state of “complete physical, mental and social wellbeing” is an impossible feat (Card, 2017). A more modern definition of health that allows for the continuum between more healthy and less healthy, the experiential nature of health status rather than the presence/absence of health conditions, and the combination of physical and psychological experiences that influence one’s experience of health has been provided by Card (2017): “Health is the experience of physical and psychological well-being. Good health and poor health do not occur as a dichotomy, but as a continuum. The absence of disease or disability is neither sufficient nor necessary to produce a state of good health” (p. 131). This study will thus conceptualise health as both a physical and psychological construct that requires an understanding on individual conceptions of health.

Wellbeing is a construct that has been defined in numerous different ways without consensus on a single definition. Growing interest in the research of wellbeing has resulted in numerous, conflicting definitions and ideas of wellbeing (Dodge, Daly, Huyton, & Sanders, 2012). Wellbeing typically refers to optimal psychological functioning, not just the absence of mental illness (Ryan & Deci, 2001). However, the WHO conceptualises wellbeing as being a

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combination of physical, mental, and social aspects (WHO, 1948). One definition of wellbeing that considers a broader scope of interrelated health and wellbeing factors has been formed by Dodge et al. (2012), as they define wellbeing as the balance point between an individual's pool of resources and the challenges the face, which include psychological, social, and physical resources/challenges. Figure 1 below visualises the definition of wellbeing provided by Dodge et al. (2012). Thus, this study will conceptualise wellbeing as a balance between psychological, social, and physical resources and challenges and view health and wellbeing as a continuum rather than dichotomy of good vs. bad.



Figure 1: Definition of Wellbeing provided as presented by Dodge et al. (2012).

In 2008, the United Kingdom government appointed the New Economics Foundation to develop a simplified conceptualisation of wellbeing that can be used to promote mental capital and wellbeing (Aked, Marks, Cordon, & Thompson, 2009). The product, the *Five Ways to Wellbeing*, encompasses five activities to promote wellbeing: To give, be active, keep learning, connect, and take notice. This model of wellbeing aims to inform policy, focus on promotion and prevention of mental health and wellbeing at a population level, as well as inform care and treatment (Aked et al., 2009). This model assumes that the opposite of ill-health is the presence of positive psychological states defined as *flourishing* (Corey, 2002). Research suggests that flourishing is higher in New Zealand workers who participate in the five ways to wellbeing (Hone, Jarden, Duncan, & Schofield, 2015), suggesting that the five

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ways to wellbeing is a means of improving positive psychological states in New Zealand employees. The five ways to wellbeing may be implemented through individual use, group use, organisational use through organisational policy and workplace health initiatives, and can inform policy and strategy across different population and age groups (Aked et al., 2009). The five ways to wellbeing has been used within an organisation-led wellbeing initiative to develop resilience and address low staff morale and well-being following a natural disaster in Christchurch, New Zealand (Näswall, Malinen, & Kuntz, 2017). The five ways to wellbeing is thus a simple tool that organisations can implement to promote mental capital and wellbeing in employees.

## Promoting Health in the Workplace

Health promotion is a public issue aiming to improve the physical, mental, and social wellbeing of individuals and groups through enabling people to increase control over their health (WHO, 1986). Reaching a state of physical, mental, and social wellbeing requires the prerequisites of advocating good health, enabling individuals to reach their greatest health potential, and pursuing health in society through reconciling differing interests. According to the WHO (1986), the actions involved in health promotion are to form healthy public policy, establish supportive environments for health, reinforce community actions, develop personal skills, promote preventative self-care in health services, and to move into a healthy future through planning, implementation, and evaluation of health promotion activities. Successful health promotion campaigns require alignment with public health priorities, such as those identified by the Ministry of Health of New Zealand (King & New Zealand Ministry of Health, 2000), interagency collaboration, the comprehensiveness of the programmes, and their far-reaching influences (Signal et al., 2009). These components encompass health promotion as a whole, however recent efforts now apply these principles to the work setting.

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The importance of health promotion in the workplace is globally recognised. The WHO have called for the development of widespread efforts to secure physical, psychological, and social health and well-being of workers worldwide (WHO, 2007). Achieving improved worker health requires the protection and promotion of health at the workplace, improved performance of and access to occupation health services, provision and communication of evidence for action and practice, and finally, integration of workers' health into other policies (WHO, 2007). Research into employee health and health promotion at work offers an unprecedented opportunity to substantially improve employee health and change the landscape of organisational health with regard to employee health (Kelloway, 2017).

The workplace is an important setting through which health can be promoted on a large-scale due to the amount of time working adults spend at their workplaces (Dishman et al., 1998; Person et al., 2010). Targeting adults at work is useful for administering health programmes, much like how the school system is a valuable setting for vaccinations as it is the easiest way to reach the target population (working adults vs. children) (Kelloway, 2017). In the present study, workplace health promotion (WHP) refers to the promotion of physical, mental, and social wellbeing within the workplace through advocating and supporting good health practices, generating policies and regulations around health at work, improving employee compliance with policies surrounding health and safety, and facilitating employee access to health-related services and programmes. Workplace health promotion programmes promote health by emphasising the prevention of health issues, promotion of healthy lifestyles, improving employee compliance with health and safety standards, and facilitating employee access to health services and care to enhance health status (Fertman, 2015). Much like the aspects of health promotion outlined by the WHO (1986), WHP incorporates elements of health education, supporting social and physical work environments, integrating health programmes

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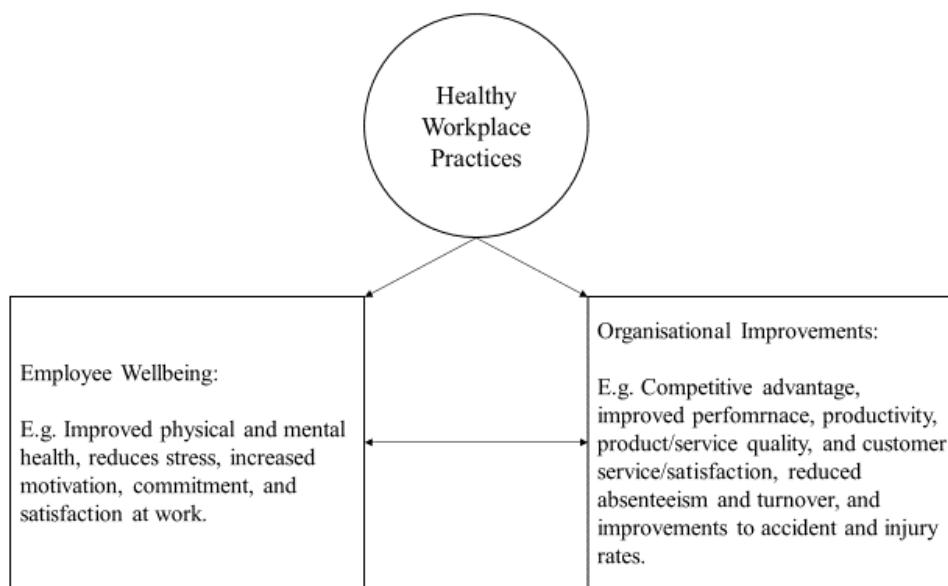
into organisational practices, linking WHP to related programmes, and worksite screening and education (Fertman, 2015).

Despite varying healthcare systems, health promotion via work settings may have global benefits in improving health of employees (Joslin, Lowe, & Peterson, 2006), and employers are realising the responsibility they play in preventing illness and having healthy employees (Fielding, 1984). Employee benefits of WHP include improvements to employee lifestyle (Rongen et al., 2014) such as through reducing health risks (e.g. Anderson et al., 2009) and improving healthy behaviours (e.g. Conn, Hafdahl, Cooper, Brown, & Lusk, 2009; Maes et al., 2012; Ni Mhurchu, Aston, & Jebb, 2010). Employees may also benefit through health risk assessments and screening to identify areas of intervention and prevent illness (e.g. Brill et al., 1991; Cornfeld et al., 2002; Freak-Poli, Wolfe, Backholer, de Courten, & Peeters, 2011). The public health system also benefits from WHP initiatives, as well-designed and appropriately targeted health interventions may significantly lower the health care costs linked to modifiable health risk factors (Goetzel et al., 2012). Health care dollars are thus invested in a preventative fashion by improving the health status of at-risk individuals before health care dollars are spent on treatment (Joslin et al., 2006). WHP thus improves the health of employees and saves health care dollars through preventing health care spending.

WHP also benefits organisations implementing such strategies through creating a healthy organisation which in turn improves employee health and leads to organisational benefits (Fielding, 1984; Grawitch, Ledford, Ballard, & Barber, 2009). In a review of literature, WHP has been found to increase wellbeing and work ability, and decrease sick leave taken (Kuoppala, Lamminpää, & Husman, 2008). Evidence also suggests that improvements to health-related risk factors via WHP reduces absenteeism (Aldana, 2001; Proper, Staal, Hildebrandt, Allard, & Mechelen, 2002) and presenteeism in employees (Brown, Gilson, Burton, & Brown, 2011; Cancelliere, Cassidy, Ammendolia, & Côté, 2011). Small-scale WHP

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efforts such as introducing supplementary breaks every hour may also improve productivity of workers through reducing discomfort, strain, and fatigue (Galinsky et al., 2007) which shows promise for organisations implementing WHP. Positive outcomes for WHP may however be impeded by factors relating to participation and compliance in WHP (Strijk, Proper, Mechelen, & Allard, 2013) as these factors limit the ability of WHP to improve organisational functioning, which is reflected in research which find weak support for the effectiveness of WHP (Kuoppala et al., 2008). Utilising healthy workplace practices enables employee and organisational improvement as outlined in the PATH (Practices for the Achievement of Total Health) Model developed by Grawitch, Gottschalk, and Munz (2006). This model, displayed in Figure 2, integrates conceptualisations of workplaces of workplaces practices and links organisational practices to employee wellbeing and organisational improvements in a comprehensive framework. Research into achievement of healthy workplace practices and the mechanisms through which employee wellbeing and organisational improvements are obtained is important to guide organisations in how to best implement WHP activities.



*Figure 2: Model linking healthy workplace practices to employee wellbeing and organisational improvements, based on the PATH Model by (Grawitch et al., 2006).*

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Despite the growing evidence of the importance of WHP and the associated benefits, health promotion struggles to garner the support it requires in New Zealand. A 2015 large-scale survey of New Zealand health promotion funding and workforce issues has found that government funding for health promotion is declining, jobs focusing on health promotion are decreasing, and staff are increasingly leaving the field (Lovell, Egan, Robertson, & Hicks, 2015). In 2015, 52% of health-focused organisations reported employing health promoters with non-permanent contracts, meaning New Zealand health promotion employees do not have job security (Lovell et al., 2015). Public health in New Zealand faces scrutiny from government for being unsustainable and excessive (Keene et al., 2016). Additionally, health research in New Zealand is underfunded, particularly when compared to other countries (Joyce & Reid, 2008; Reid, Joyce, Fraser, & Crampton, 2014) exacerbating the difficulties health promotion has been supported in New Zealand. With research in New Zealand public health suffering, health promotion employees declining and government funding deteriorating, WHP activities may struggle to realise their potential in benefitting employees and researchers may not have the resources needed to study how health promotion can be continually improved. It is possible that by focusing research on how to better reach the public and ensure the benefits of WHP are wide-reaching, as the current study aims to do, government funding may be better able to support ongoing research of WHP and improve the employment situations of those working in health promotion.

## **Workplace Health Promotion Participation**

WHP efforts have an array of benefits to organisations and the community (Grawitch et al., 2009), however for employees and employers to reap the benefits of WHP, employees must first participate, and employers must facilitate participation (Spilman, 1988). The effectiveness of WHP programmes is affected by the proportion of the target population participating as those not participating are not experiencing the positive health outcomes of

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WHP or contributing to improved organisational functioning (Robroek et al., 2009). Differences in participation levels account for differences in the effectiveness of various WHPPs (Dishman et al., 1998; Proper et al., 2002; Robroek, Lindeboom, & Burdorf, 2012). With participation rates in WHP programmes being typically below 50%, an understanding of the determinants of participation and programme characteristics influencing participation is essential in successful WHP execution (Persson et al., 2013; Robroek et al., 2009).

Research on participation in WHP is extensive (Robroek et al., 2012). Robroek et al. (2009) conducted a review of WHP participation research and found participation levels ranging between 10% and 64% with a median of 33%. Assessment of predictors of WHP is important for an understanding as to what variables determine variation in participation rates and what WHP programme characteristics influence participation levels (Glasgow et al., 1993; Robroek et al., 2012). Beyond WHP effectiveness, participation in WHP is important to understand from a financial perspective, as WHP initiatives that are wide-reaching are more cost-effective to implement (Robroek et al., 2009). Much employer health-care spending can be attributed to health factors able to be prevented or modified (Goetzel et al., 2012) and evidence is growing to support positive return on investment from employers introducing WHP schemes (Goetzel & Ozmlnkowski, 2008). In a review of WHP return on investment, (Baxter, Sanderson, Venn, Blizzard, & Palmer, 2014) found a weighted return of investment of 138% across 51 studies. Positive financial outcomes are commonly reported, and even subtle savings:costs ratios warrant employing methods to maximise employee participation and save money spent on employee health care and absenteeism (Spence, 2015).

**Determinants of Participation: Personal Characteristics.** Characteristics of the target population account for variance in participation rates (Brill et al., 1991; Robroek et al., 2012). For example, Glasgow et al. (1993) in an early review found men and blue-collar workers to be less likely to participate, showing a preference for women and white-collar

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workers to participate. Robroek et al. (2009) found that generally, women are more likely to participate than men, but other demographic characteristics showed no consistent patterns. Other personal characteristics such as age (Kilpatrick et al., 2015; Lakerveld et al., 2008; Robroek et al., 2009), marital status (Franklin, Rosenbaum, Carey, & Roizen, 2006; Lakerveld et al., 2008; Lerman & Shemer, 1996), and level of education (Brill et al., 1991; Heaney & Inglish, 1995; Knight et al., 1994) have also been shown in research to be related to participation in health promotion activities. While practitioners implementing health promotion activities should remain aware of the influence demographic variables have over participation, care should be taken when these personal characteristics are used as predictors of participation when they may be proxy measures of other variables of interest. More importantly, personal characteristics do not lend themselves to organisational intervention (Kilpatrick et al., 2015), thus are not within the scope of what the current research seeks to answer.

**Health-Related Factors.** Health-related factors also contribute to WHP participation. The success of WHP programmes is contingent on the engagement of the employees, particularly those who are identified as being at risk of poor health (Jorgensen, Villadsen, Burr, Mortensen, & Holtermann, 2015; Persson et al., 2013). However, numerous studies assessing participation in WHP identify that employees with suboptimal health, health risk factors, or perceived poor health status, are less likely to engage with activities available to them (Jorgensen et al., 2015; Kilpatrick et al., 2015; Lakerveld et al., 2008; Persson et al., 2013). This trend is alarming as WHP is often not reaching the proportion of employees who would benefit the most from the positive outcomes WHPPs may offer (Persson et al., 2013). Interestingly, those who avoid WHP initiatives and have suboptimal health do not do so because they don't believe they need to change as a higher proportion of these nonusers actually report wanting to adopt a healthier lifestyle (Persson et al., 2013). Although recognising the need for change, these employees may not perceive the interventions to be a solution to their

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problem (Persson et al., 2013). Nonusers may also attribute nonparticipation to being able to better manage their own health, laziness, and the way in which the programmes are delivered (Persson et al., 2013). As at-risk individuals clearly need to be targeted for engagement in WHP, such programmes need to be made accessible and available to these participants and address their motivations around positive health change.

## **Organisational Factors Affecting Participation**

Organisations play an important role in facilitating participation in WHP as they have some control over the environment employees work in, and organisational factors affecting participation in WHP are more malleable and subject to deliberate change from the organisation (Kilpatrick et al., 2015). An understanding of how to tailor the organisation to better support employees and improve participation in WHP is foundational to programme success as well as ensuring return on investment. Such an understanding can ensure organisations are adequately equipped to administer WHP programmes and can experience the various positive outcomes to their full potential.

Organisational factors have been studied with regard to their influence on employee participation in WHP (e.g., (Jorgensen et al., 2016; Kilpatrick et al., 2015; Lakerveld et al., 2008; Person et al., 2010; Robroek et al., 2009; Rongen et al., 2014) but further research is required to develop a broader understanding of how to build a WHP-supportive work environment. The aim of the present research is to evaluate how organisational factors are related to participation in a wellbeing activity. In order to achieve this, the study will examine two categories of organisational variables: Variables pertaining to how work is perceived, and variables pertaining to how work is structured. The Work Perceptions Model will assess the emotional work demands employees face, how supported they are by their supervisors in daily work activities, the degree of trust they have in their organisation, and the satisfaction of their psychological needs of relatedness, competence, and autonomy. The Work Structure Model

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will assess how WHP is made available and supported at work, the workload employees have, and the variability in employee work schedules.

## Work Perceptions Model

**Emotional Work Demands.** One's emotional involvement in work and the emotional demands they face can be highly demanding and lead to exhaustion and negative health outcomes (Bakker, Demerouti, & Schaufeli, 2003). Emotionally demanding work may fuel emotional exhaustion (Lee & Ashforth, 1996), and in the face of low control over emotionally demanding work, may lower participation rates (Jorgensen et al., 2016). While jobs themselves are difficult to change and in some tasks emotional situations may not be avoided, the organisation may be able to generate a work environment to better support employees facing emotional work demands (Jorgensen et al., 2016). Such support would help employees avoid emotional exhaustion and participate in WHP activities that improve their health. Emotional work demands have not been extensively studied in previous WHP participation research (Jorgensen et al., 2016), thus more research is needed to assess its contribution to WHP participation.

**Supervisor Support.** Social support has been positively associated with participation in WHP (Jorgensen et al., 2016) and positive human relations and cohesiveness are important for WHP and general wellbeing at work (Gunnarsdóttir & Björnsdóttir, 2003). Crump, Earp, Kozma, and Hertz-Pannier (1996) concluded that organisational factors such as management support and supportive social environment are determinants of employee participation in a WHP initiative. Additionally, Jorgensen et al. (2016) found low social support was significantly associated with low participation in exercise facilities. Some form of social support is a prerequisite component of WHP (Jorgensen et al., 2016) and such support should be tailored and relevant to the employee (Kilpatrick et al., 2015). As the present study aims to assess organisational factors which may affect participation and may be subject to change by

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the organisation, employee perceptions of supervisor support will be assessed in terms of how employees perceive their supervisors support them in daily work activities through actions that may be outlined in a supervisor's job description.

Organisations may become more socially supportive environments through changing workplace norms, which may be possible through clear, observable modelling of behaviour (supervisors and CEO being supportive) and making supervisors and senior leaders advocates of the WHP programmes (Spence, 2015). Generally, an organisation's interest in employee health and provision of health promotion services is positively received by organisational members (Persson et al., 2013). Supervisor support in employees' daily work activities is suggested to be a precursor to participation intentions through catalysing a positive social work environment.

**Organisational Trust.** Organisational trust encompasses beliefs that the organisation has benevolent motives, is able to meet obligations to the employee, demonstrates acceptable levels of integrity with regard to fair treatment, and behaves in predictable and reliable ways (Dietz & Den Hartog, 2006). Employees with low organisational trust are likely to perceive an introduced WHP as a tool to enhance the organisation and its image, or as a human relations stunt to garner the commitment of employees (Spence, 2015). As the human resources functions shift away from employee welfare and professional development, and more toward strategic goals and performance management, employees may see human resources professionals promoting WHP as an execution of a strategic agenda as opposed to an investment in employee health and wellbeing (Spence, 2015). Employees may resist WHP efforts as they may see these programmes as being a means of corporate social control, moulding the workforce through WHP to make it more productive, less costly, more harmonious, and more profitable (Spence, 2015).

**Psychological Needs Satisfaction.** Employees who feel that their basic psychological needs are being satisfied may be more receptive to employer-sponsored opportunities to improve their health and wellbeing (Spence, 2015). Self-Determination Theory (SDT) theorises that the innate psychological needs for autonomy, competence, and relatedness are required for individuals to flourish, and fulfilment of basic psychological needs is a motivation mechanism to direct behaviour (Deci & Ryan, 2000). Fulfilment of psychological needs has positive organisational outcomes including intrinsic motivation and internalisation of extrinsic motivation, leading to persistence, increased performance, job satisfaction, positive work attitudes, organisational commitment, and psychological wellbeing (Gagné & Deci, 2005). If employees' psychological needs are fulfilled by the organisation, they may feel more receptive and motivated to engage in WHP (Spence, 2015). Having basic needs fulfilled by the organisation builds trust as employees believe the employer safeguards their best interest (Stone, Deci, & Ryan, 2009). Psychological needs satisfaction is thus suggested to affect employee participation in a wellbeing initiative.

### **Work Structure Model**

**WHP Availability.** One commonly reported barrier to participation in a WHP is not perceiving such programmes to be available (Grosch, Alterman, Petersen, & Murphy, 1998). For employees to participate in a WHP programme, they first need to see the programme as being a feasible commitment around their other work commitments. In an interview study exploring barriers to participation in a WHP programme, Person et al. (2010) found that time and location issues were frequently reported by employers. Similarly, Lakerveld et al. (2008) found that time investment, costs, and distance to intervention were motivational barriers reported by non-participants more so than participants. Thus it is important to assess whether organisations make WHP accessible around work commitments.

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Not being able to leave work to engage in healthy activities and costs associated with such activities are also commonly reported barriers to participation (Bright et al., 2012; Lakerveld et al., 2008). Employees may feel helpless to engage in healthy activities when the workplace strictly monitors work and break time (Edmunds, Hurst, & Harvey, 2013). Having WHP available during paid hours rather than during leisure hours may reduce barriers imposed by leisure time duties (Jorgensen et al., 2016). Costs associated with WHPPs is an issue organisations may be able to alter to make WHP more available to employees. Financial costs have been found to discourage participation in a clinical health trial (Lakerveld et al., 2008). These findings indicate it is important for WHP to be accessible with regard to work hours and costs.

Accessibility to WHP is one of the most dominating factors associated with participation (Jorgensen et al., 2016), and making WHP equitably available and accessible is an essential precursor to any programme successful implementation (Kilpatrick et al., 2015). Through tailoring the work environment to make WHP more accessible, motivations for nonparticipation in WHP such as difficulties organising transport or costs may be combatted (Persson et al., 2013). The research supports organisations making WHP activities accessible through covering costs, providing ample time, and taking an interest in employee health.

**Workload.** The job demands of time pressure and high workload have been reported as discouraging potential participants (Bright et al., 2012; Lakerveld et al., 2008; Person et al., 2010). While quantitative work demands (having lots of tasks) and work pace were not found to be significantly associated with participation by Jorgensen et al. (2016), Spence (2015) argues that time and work pressures are aspects of organisational cultural norms that discourage WHP participation, and changing workload norms such as through increasing work breaks etc. may improve receptivity of WHP.

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**Work Schedule.** Employees often have limited control over their own work schedule (e.g. Monday to Friday vs. variable work schedules), however, organisations may be able to organise work to be more consistent for employees so that they may better engage with WHP around these hours. In a survey assessing attitudes of employees toward a work wellness clinic, 63.7% of respondents indicated that work schedules were barriers to participation, which was the most frequent barrier listed (Bright et al., 2012). Having a variable work schedule (not Monday to Friday) was significantly associated with lower WHP participation by Kilpatrick et al. (2015). This may be because these individuals find variable work hours tiring or have difficulties planning health activities around such arrangements. Having work structured in a way that results in variable schedules is suggested to impede intentions to participation in a wellbeing initiative.

Knowledge of factors affecting participation allows for the development of strategies to ensure maximum participation such as by adjusting the work environment (Jorgensen et al., 2016; Kilpatrick et al., 2015), ensuring implementation is honest and fair (Spence, 2015), increasing information and accessibility of WHP (Persson et al., 2013), addressing employee motives (Lakerveld et al., 2008) and attitudes (Bright et al., 2012), and reducing barriers to participation (Edmunds et al., 2013; Jorgensen et al., 2016; Person et al., 2010; Rongen et al., 2014). As organisational factors are somewhat subject to change (Kilpatrick et al., 2015), the work environment may be tailored to be supportive of WHP activities and initiatives (Jorgensen et al., 2016). The first research question this study aims to answer is how the organisational factors discussed above contribute to intentions to participate in a wellbeing initiative offered. Intentions will be assessed as a prerequisite to actual behaviour as per the theory of planned behaviour (Ajzen, 1991), and WHP research should assess both participation intentions and actual participation due to the gap that often exists between them (Rongen et al., 2014).

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*Research Question 1: What is the relationship between the organisational factors of Emotional work demands, supervisor support, organisational trust, psychological needs satisfaction, WHP availability, workload, work schedule, and employee intentions to participate in a wellbeing initiative?*

### Work Control as a Moderator

Work control may decrease an employee's ability to organise their work to accommodate health promotion activities (Jorgensen et al., 2016). Jorgensen et al. (2016) assessed the influence of control on WHP participation by examining the ratios of job control to quantitative work demands, physical work demands, and emotional work demands in a binary regression where participation/nonparticipation was the outcome. This was assessed by investigating quantitative, physical, and emotional work demands relative to the degree of decision latitude in how employees respond to these demands, forming three new variables which were the ratio of each of these demands to work control. Having a high ratio of physical demands to control, and a high ratio of emotional demands to control was associated with lower participation in some WHP activities, such as healthy diet, and more contact with health professionals (Jorgensen et al., 2016). Having the freedom in organising one's own work may give employees the ability to adjust their work in order to participate in WHP.

The influence of work control on WHP participation is built on the premise that work control buffers against imposed work demands. The Psychological Demand-Decision Latitude Model theorises that high job strain results from having high psychological demands and low decision latitude (control), however having high decision latitude allows employees develop new behaviour patterns and adapt to high demands (Theorell & Karasek, 1996). Figure 3 shows the Psychological Demand-Decision Latitude Model as it is presented by (Theorell & Karasek, 1996). Having high control gives employees a feeling of mastery which inhibits perceptions of stress (Theorell & Karasek, 1996) thus may be an important addition to WHP participation

## Participation in WHP

research as work control may buffer against stressors which could normally discourage participation in WHP.

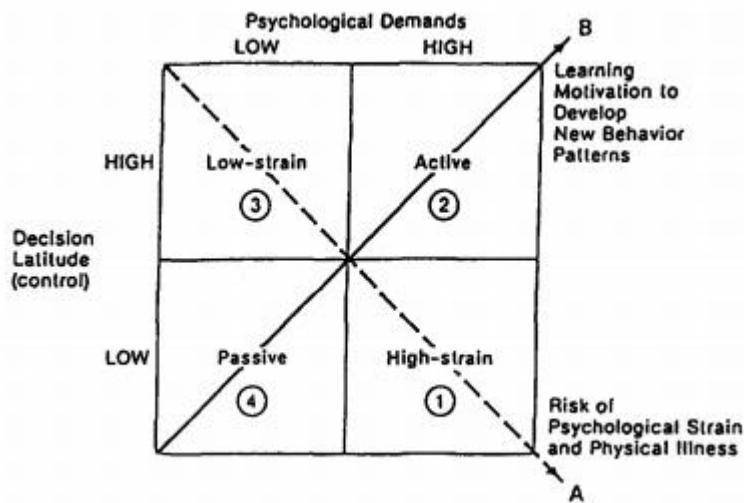


Figure 3: The Psychological Demand-Decide Latitude Model as presented by Theorell and Karasek (1996).

While the first research question assesses how organisational factors affect intentions to participate, work control may be an organisational factor that influences participation through its buffering effects.

*Research Question 2: Does work control moderate the relationship between organisational factors and participation intentions?*

## The Theory of Planned Behaviour in Workplace Health Promotion

While it may be possible for researchers and practitioners to assess and change the impact of the organisational factors in the Work Perceptions and Work Structure Models, research needs to evaluate how these changes translate into behaviour change. The theory of planned behaviour (Ajzen, 1991) highlights that intentions to behave precede actual behaviour as intentions are decisions to behave, and behavioural intentions indexes a person's motivation to perform a behaviour. While often used as a proxy measure of behaviour (in this context, participation), research indicates that behavioural intentions explain approximately 28% of the

## Participation in WHP

variance in actual behaviour (Sheeran, 2002). To understand the role of intentions for participation in WHP, and to gain insight into the gap that exists between them, both intentions and actual behaviour need to be included and measured in research (Rongen et al., 2014). The Theory of planned behaviour has been utilised in research of WHP, as Rongen et al. (2014) separated participation intentions and actual participation by first measuring intentions and following up with actual participation data for participants six months later. Rongen et al. (2014) found that of those who indicated they intended to participate, 21% followed through by actually participating, suggesting that an intention-behaviour gap exists in WHP and that intentions cannot be used a proxy measure of behaviour.

The observed gap between intention to participate and actual participation is not unexpected, but it is important to assess why it occurs so that it may be minimised. One way to assess this is to differentiate those with positive intentions from those with negative intentions and assess whether those with positive intentions follow through (Orbell & Sheeran, 1998). In a review of papers assessing behaviour change using this approach, Sheeran (2002) found the median percentage of intenders who fail to enact was 47%, whereas the median percentage of non-intenders who abstain from behaviour was 7%, suggesting the gap between intentions and behaviour can be largely attributed to those with positive intentions not following through. Various mechanisms may contribute to this gap, such as lack of control in behaviours leading to goals or behavioural expectations being mixed with behavioural intentions (Sheeran, 2002). An understanding of the Theory of Planned Behaviour and the intention-behaviour gap is important in the implementation of successful WHP to ensure that those with positive behavioural intentions follow through with participation.

The current study aims to extend the findings of Rongen et al. (2014) by examining whether intentions to participate precede objective measures of participation, thus avoiding using intentions as a proxy measure of participation and furthering the research of the theory

## Participation in WHP

of planned behaviour in a WHP context. This will be achieved by examining participation intentions as a mediator of the path between organisational factors and actual participation in a wellbeing initiative.

*Research Question 3: Do intentions to participate in a wellbeing initiative act as a mediator between organisational factors and actual participation?*

## Methods

### Procedures

Responses were obtained using an electronic survey administered on Qualtrics Survey Software. The survey assessed demographic variables, as well as the organisational factors of emotional work demands, supervisor support, organisational trust, psychological needs satisfaction, WHP availability, workload, work schedule, and work control. Finally, the survey assessed intentions to participate in a wellbeing initiative, and offered participants a link to The Wellbeing Game (Mental Health Foundation of New Zealand, n.d.) to check if those who say they intended to participate followed the link and logged activities on The Wellbeing Game website. The Wellbeing Game data is kept on a database accessible by those with administrative rights and was accessed one month after the final respondents finished the survey.

Participants were recruited through poster advertisements (Appendix A) which were posted on the university campus and on social media (Facebook and LinkedIn), as well as through receiving course credit for an introductory psychology paper at the University of Canterbury. Participants were entered into a draw to win one of five \$100.00 shopping vouchers as incentive to participate. Participants consented to participate by continuing with the survey. The information sheet shown to participants as well as the consent details is displayed in Appendix B.

## Participants

137 participants completed the survey, however two participants were removed for not providing an e-mail address with which Wellbeing Game data could be found, and a further 10 participants were removed for not proceeding past consent or demographic variables, leaving a total of 125 participants used for analyses.

This sample was comprised of 36 males and 89 females, with 70% being aged 18-24, 22% aged 25-39, 4% aged 40-55, and 4% aged older than 55. Regarding ethnicity, 76% identified as being New Zealand European (Pakeha), 2% Maori, 2% Pacific Island, 9% Asian, 5% European, and 7% as unspecified others. For highest academic achievement, 52% of participants identified high school certificate(s), 6% had trade certificates or diplomas, 42% had a university degree or equivalent tertiary qualification, and one participant did not specify, possibly because no options applied to them. 39% of participants were employed full-time, 39% part-time, 14% casual, and 7% identified as ‘other’.

## Materials

All survey items are included in Appendix C. Measures which were designed to be assessed on a 5-point Likert-type scale were recorded on a 7-point scale to ensure all measures were consistent for ease of response and to allow for a greater range of responses. For organisational factors, respondents were asked to respond according to the last 2 months. All scales chosen had previously demonstrated high reliability and had established validity.

Prior to distribution of the survey, several subject matter experts from the intended participant population examined the survey for feedback on item wording and comprehensibility. Any changes to item wording is described in the scale descriptions below.

The measurement properties of each scale were assessed using Cronbach’s alpha and exploratory factor analysis (principal axis factoring with oblique rotation). This was to check the internal consistency for each scale and that items measured a common factor. The guideline

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for Cronbach's alpha suggested by DeVellis (2012) is alpha values between .60 and .70 is acceptable, between .70 and .80 is respectable, and above .80 is very good.

**Emotional Work Demands.** Emotional work demands was assessed using a 6-item emotional demands scale from (Bakker et al., 2003). An example item is “Do you face emotionally charged situations in your work?”. Some items were reworded to remove the word “client” as this may limit the scale to employees who deal directly with clients, and in these cases, the word was replaced with “people” to broaden the scope of who could respond. A 7-point Likert-type scale was adopted ranging from “1 = Never” to “7 = Always”. Factor analysis extracted two factors, where three items pertaining to emotionally demanding situations (e.g. “Do you face emotionally charged situations in your work?”) loaded on to one factor, and three items pertaining to emotionally demanding people (e.g. “In your work, do you have to deal with demanding people?”) loaded on to another factor. The first factor was thus labelled Emotional Situation Demands, and the second factor labelled Emotional People Demands. The Emotional Situation Demands subscale had an alpha value of .90, and Emotional People Demands had an alpha value of .90. Responses were averaged in each subscale to provide composite scores and high scores correspond with having a high degree of emotional situation demands and emotional people demands.

**Supervisor Support.** 6 items from the Supervisor Support measure developed by Greenhaus, Parasuraman, and Wormley (1990) was implemented to measure supervisor support. An example item is “My supervisor makes sure I get the credit when I accomplish something substantial on the job”. A 7-point Likert scale where “1 = Strongly disagree” to “7 = Strongly agree” was utilised and responses were averaged to provide a score of supervisor support. A high score means the respondent felt they receive a high degree of supervisory support with regard to performance feedback, challenging work assignments, and work opportunities to promote development and visibility. This scale had an alpha of .89.

**Organisational Trust.** A 7-item scale developed by Robinson and Rousseau (1994) assessed organisational trust. This scale measures trust an employee feels toward their organisation with regard to the organisational trust bases of integrity, motives and intentions, behavioural consistency, openness and discreteness proposed by Gabarro and Athos (1976). An example item is “My employer is open and upfront with me”. A 7-point Likert scale was adopted ranging from “1 = Strongly disagree” to “7 = Strongly agree.” Responses were averaged to provide an organisational trust score, where a high score is indicative of a high degree of trust in the employer with regard to the above bases of organisational trust. This scale yielded an alpha value of .89.

**Psychological Needs Satisfaction.** The Work-related Basic Needs Satisfaction Scale (W-BNS; Van den Broeck, Vansteenkiste, De Witte, Soenens, & Lens, 2010) was used to measure psychological needs satisfaction. 18 items assessed the fulfilment of the psychological needs of relatedness, competence, and autonomy in a work setting with 6 items assessing each subscale. An example item from the relatedness subscale is “At work, I feel part of a group”. An example item from the competence subscale is “I really master my tasks at my job”. An example item from the autonomy subscale is “If I could choose, I would do things at work differently”. Responses were obtained on a 7-point Likert scale ranging from “1 = Strongly disagree” to “7 = Strongly agree”, and responses were averaged to provide scores of autonomy, competence, and relatedness needs satisfaction, and high scores are indicative of better needs satisfaction. Factor analysis yielded three distinct factors as expected with 6 items loading on to each scale, and the subscales for relatedness, competence and autonomy had alpha values of .87, .90, and .80 respectively.

**Workplace Health Promotion (WHP) Availability.** Four items were developed to assess whether organisations provide time and financial support to engage in workplace health promotion. These items were “My organisation covers the costs of wellbeing initiatives”,

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“Activities that enhance my wellbeing get in the way of my work tasks” (reverse scored), “My organisation allows me to access activities such as The Wellbeing Game during work hours”, and “My employer(s) care about our health and wellbeing at work”. A 7-point Likert-type scale ranging from “1 = To no degree” to “7 = To a very high degree” was adopted. One item was removed for having negative correlations with other items and for demonstrating poor face validity (not actually measuring WHP availability but measuring interference of WHP in work activities). This item was “Activities that enhance my wellbeing get in the way of my work tasks” and was reverse scored. High scores correspond with organisations making wellbeing initiatives available with regard to covering costs, allowing time at work, and caring for employee health/wellbeing.

**Workload.** Workload was assessed using a 7-item job demands subscale developed by Karasek (1979) which assesses job demands of workload. An example item is “To what extent does your job require you working fast?”. This was assessed on a 7-point Likert-type scale ranging from “1 = Never” to “7 = Extremely often.” Responses were averaged to provide a mean workload score, and a high score is indicative of having high workload. This scale had a Cronbach’s Alpha of .90, thus demonstrated internal reliability. Factor analysis extracted a single factor as expected.

**Work Schedule.** A single item assessed the variability in employees’ work schedules. Participants were asked to indicate their typical work schedule according to work schedules over the last two months, picking from one of the following choices: “I work a consistent work schedule (e.g. Monday to Friday)”, “I sometimes have variable work schedules, but not always”, and “I have variable work schedules”. In the analyses, these responses were dummy coded into two new variables for somewhat variable work schedule vs. no variability, and variable work schedule vs. no variability.

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**Work Control.** The Decision Authority subscale from the Job Demands and Decision Latitude Scale developed by Karasek (1979) was used to measure work control. This scale is intended to measure employee's authority to make job-related decisions. This subscale had 4 items, and an example item is “To what extent do you have freedom to decide how to organise your work?”. Responses were obtained on a 7-point Likert-type scale where “1 = Never” and “7 = Extremely often”. Composite Work Control scores were obtained by averaging the decision authority items, and a high score is indicative of having a high level of authority in making decisions at work and freedom in organising work. The alpha coefficient for this scale was .85.

**Intentions to Participate.** Degree of intention to participate in The Wellbeing Game was assessed on a 5-point scale ranging from “1 = Not at all likely” to “5 = Very likely.” Respondents were given a description of The Wellbeing Game and asked “How likely are you to participate in The Wellbeing Game being offered to you?”. A high score corresponds with having high intentions to participate in The Wellbeing Game.

**Actual Participation.** Actual participation data was taken from The Wellbeing Game database one month after the last participant took the survey. Actual participation was assessed by looking at whether respondents made a Wellbeing Game login. Those who did not make a login were coded 0, and those who used The Wellbeing Game service at least once were coded 1.

**Other variables.** Life circumstances and time availability outside of work that could affect participation was also measured in case it covaried with organisational factors and could be used for follow-up analyses. This is because employees with little time outside of work or who have a demanding lifestyle, such as having a child or hobbies, may have less time to engage in activities such as The Wellbeing Game outside of work. Four items to assess time availability and demanding lifestyle were developed as not having time to participate is a

## **Participation in WHP**

common barrier to participation (Lakerveld et al., 2008; Person et al., 2010). An example item is “Outside of the workplace, I have the time to engage in activities that enhance my wellbeing”. These items were assessed on a 7-point Likert-type scale ranging from “1 = To a very low degree” to “7 = To a very high degree.” Items were averaged to provide a composite time availability score. Those who score high on these items are those who perceive their life outside of work to be very busy or time demanding.

## **The Wellbeing Game**

The Wellbeing Game is an online intervention run by the Mental Health Foundation of New Zealand (Mental Health Foundation of New Zealand, n.d.) and involves players logging activities that tap into one or more of the five ways to wellbeing: To give, be active, keep learning, connect, and take notice (Aked et al., 2009), and recording how long the activity took and whether it was done with other Wellbeing Game group members. For example, the activity “walked the dog” could take one hour, and involves being active and taking notice. Activities of The Wellbeing Game are logged on The Wellbeing Game website when players click the ‘play’ button. If it is a players first time, instructions on how to play will appear. Players need to detail what they did, how long it took, which of the five ways to wellbeing they used in the activity, any Wellbeing Game teammates that were involved, and may attach a photo if they choose. The activity is logged by clicking the “Play!” button. The Wellbeing Game requires an e-mail to sign up which are kept on a database, and if an e-mail on the database matched the e-mails given in the survey, a participant was coded as having participated.

## **Data Analysis**

Statistical analyses were conducted using SPSS version 24 for Windows 10 operating system. PROCESS v2.16.3 (Hayes, 2013), a plugin for SPSS, was used for analysis of mediation and moderation. PROCESS also bootstraps results to provide bootstrapped 95%

## Participation in WHP

confidence intervals. Bootstrapping is a robust regression method which provides confidence intervals and significance tests of model parameters to combat the detrimental effects of regression assumption violations such as normality and homoscedasticity (Field, 2013).

Prior to analysis, the dataset containing 125 cases was assessed for outliers and influential cases that may affect results. Univariate outliers were assessed using boxplots which identified three potential outliers, however closer examination of the data indicated that these individuals answered one scale particularly extremely each. It was concluded that these outliers were not mistakes or lazy responding, they may have felt particularly strongly about some of the measures. While it may be argued that such cases are biased and negatively affect regression results (Field, 2013), closer examination showed that these cases were genuine and removal of the cases could result in removal of participants' genuine views and opinions.

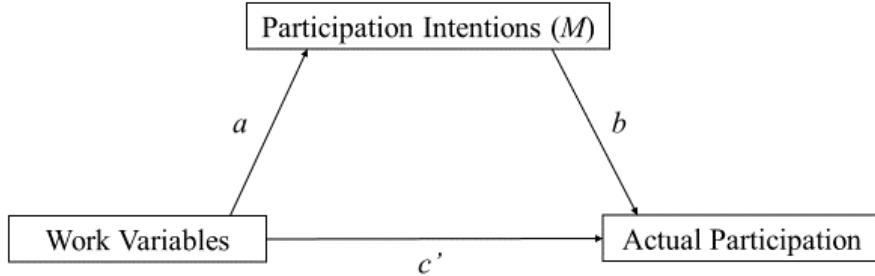
Multivariate outliers were also examined as these cases may have an influence on regression models. Two methods were employed to identify multivariate outliers: Mahalanobis distance and Cook's distance. This was done separately for The Work Perceptions and Work Structure Models, and 9 cases from the work structure variables and 12 items from the work perception variables were identified. Closer identification of responses showed respondents were not responding lazily and had strong opinions of their workplace. As responses appeared genuine, they were kept so that the dataset was representative of all respondents' views on their workplaces and those with strong views were not removed just for the purpose of improving the regression models.

The first research question sought to understand the relationship between organisational factors and intentions to participate in The Wellbeing Game, and the second research question sought to assess whether work control moderates this relationship. In order to answer these questions, a moderated multiple regression was conducted for the Work Perceptions Model and Work Structure Model. Organisational factors in the Work Perceptions Model and Work

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Structure Model were added at step 1 one to predict participation intentions, then interaction terms between each work variable and work control were added at step 2 to assess the influence of work control as a moderator and the increased explained variance with inclusion of the moderator.

The third research question concerns whether behavioural intentions lead to actual behaviour; in this case, participation in The Wellbeing Game. This will be assessed using logistic mediated regression where the outcome is Wellbeing Game participation or nonparticipation, and behavioural intentions will be assessed as a mediator variable, linking work variables to participation via behavioural intentions. Both the Work Perceptions Model and Work Structure Model were tested, and assessment of the indirect path assesses whether participation intentions is the mechanism through which work variables affect actual participation. Model fit was assessed using McFadden  $R^2$  (McFadden, 1973) and Cox & Snell  $R^2$  (Cox & Snell, 1989), both of which are provided on PROCESS in the form of  $p$  values. The total effects ( $C$ ) is the sum of the direct effects of work variables on participation ( $c'$ ) and indirect effects through the mediator, participation intentions ( $ab$ ). The direct effect specifies how the dependent variable, actual participation, varies as a function of the independent variable(s) (work variables). The indirect effect quantifies the change in the dependent variable as a function of the independent variable(s) affecting the mediator ( $M$ ), and the mediator affecting the dependent variable. The path coefficients are displayed in Figure 4. Mediation was present when the indirect effect was statistically significant, evidenced by the confidence interval not containing 0.



*Figure 4:* Participation intentions mediating relationship between work variables and actual participation with path coefficients.

## Results

Means, standard deviations, and Pearson's correlations are presented in Table 1. Moderation and mediation analyses were conducted separately for the Work Structure Model and the Work Perceptions Model with the same outcomes: Intentions to participate in The Wellbeing Game, and actual participation in The Wellbeing Game.

### Moderation Analyses

Research Question 1 assessed the relationships between organisational variables in the Work Perceptions and Work Structure Models and intentions to participate The Wellbeing Game. Research Question 2 assessed the impact of work control as a moderator of these relationships, and whether the addition of work control as a moderator explained more variance in intentions to participate in The Wellbeing Game.

**Work Perceptions Model.** For Research Questions 1 and 2 of the Work Perceptions Model, the main effects model for the first step of the regression was statistically significant ( $R^2 = .13$ ,  $F(8, 112) = 2.10$ ,  $p < .05$ ; Table 2). The model at step 2 with the addition of interaction terms was statistically significant ( $R^2 = .20$ ,  $F(15, 105) = 1.77$ ,  $p < .05$ ; Table 2).

In addition to  $R^2$ , which may not be the best metric for understanding the size of a moderation effect (Dawson, 2014), effect size was also calculated. To test the size of the moderation effect, the ratio of variance explained by the interaction term ( $R^2$  change) to the

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unexplained variance in the second model ( $1 - R^2_{Step\ 2}$ ), known as  $f^2$  provides a better estimate. The size of the effect of work control moderation the Work Perceptions Model was .09 (Table 2), and although according to the effect size rules of Cohen (1988) that small, medium and large effect sizes are .02, .15, and .35 respectively, a review of moderation effect sizes by Aguinis, Beaty, Boik, and Pierce (2005) found that moderation effect sizes are typically much smaller (mean observed moderation effect size of .009 across 261 studies), thus the observed effect size of this moderation effect is substantial. While  $R^2$  change was not statistically significant, this is likely due to shared variance, and the effect size observed justifies the interpretation of work control being a moderator in the Work Perceptions Model.

Regarding path coefficients, supervisor support was positively related to intentions to participate ( $B = .24, p < .05$ ; Table 2), thus higher supervisor support was related to higher participation intentions. The interaction between emotional people demands and work control was also statistically significant ( $B = -0.15, p < .05$ ; Table 2), suggesting that the relationship between emotional people demands and intentions to participate in The Wellbeing Game was moderated by work control. Figure 5 shows that when work control was low but emotional people demands were high, employees had higher intentions to participate in The Wellbeing Game and when emotional people demands were low, employees had lower intentions to participate. When work control was low, the relationship between emotional people demands and participation intentions was positive, and when work control was high, this relationship was negative. Figure 5 shows the mean of participation intentions was 0 as variables were centred for interpretation of coefficients as variables did not have natural 0 points, thus results are displayed as deviations from the mean.

## Participation in WHP

Table 1  
*Descriptive statistics and Pearson's correlations matrix.*

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 Availability Cost	3.20	1.77																		
2 Availability Work Hours	2.61	1.69	.64**																	
3 Availability Org Cares	4.42	1.76	.54**	.52**																
4 Workload	4.69	1.12	.14	-.02	-.13	(.90)														
5 Emotional Situation Demands	4.01	1.51	.05	.07	-.10	.33**	(.90)													
6 Emotional People Demands	4.46	1.60	-.19	-.19*	-.27**	.22*	.40**	(.90)												
7 Supervisor Support	4.49	1.32	.42**	.44**	.53**	-.07	.05	-.26**	(.89)											
8 Work Schedule – Some Variability	-	-	.08	.06	.10	-.08	-.05	-.14	.04											
9 Work Schedule – Variable Schedule	-	-	-.19*	-.15	-.07	-.06	.06	.10	-.04	-.35**										
10 Organisational Trust	4.85	1.23	.34**	.29**	.60**	-.28**	-.04	-.33**	.60**	.10	.05	(.89)								
11 PNS – Relatedness	4.65	1.36	.26**	.19*	.25**	.09	.01	-.14	.35**	.15	-.05	.21*	(.87)							
12 PNS – Competence	5.26	1.08	.10	-.04	.07	-.06	.15	.10	.24**	.05	-.07	.24	.39**	(.90)						
13 PNS – Autonomy	4.08	1.18	.35**	.30**	.48**	-.06	.05	-.35**	.58**	.20*	-.10	.47**	.49	.35**	(.80)					
14 Work Control	4.12	1.23	.36**	.30**	.36	.10	.12	-.22*	.48**	-.03	-.18	.30**	.31	.24**	.55**	(.85)				
15 Intentions to Participate	2.92	0.11	.18*	.12	.14	.14	.16 <sup>+</sup>	.07	.25**	-.03	-.14	.01	.21	.14	.17 <sup>+</sup>	.18 <sup>+</sup>				
16 Actual Participation	-	-	-.13	-.20*	.00	.03	.06	.13	-.18*	-.03	-.11	-.04	-.04	-.01	-.09	.04	.11			
17 Gender	-	-	-.04	-.02	.08	-.09	.07	-.09	.07	-.01	-.01	.13	.07	.10	.13	.02	.24**	.11		
18 Time Availability and Circumstance	4.11	1.15	.20*	.17 <sup>+</sup>	.09	-.08	-.09	-.17 <sup>+</sup>	.20*	-.12	.10	.13	-.03	.01	.14	.17 <sup>+</sup>	-.19*	-.25**	-.37**	
																			(.72)	

Note. Listwise *N* = 125. Cronbach's alpha in italicised brackets. PNS=Psychological Needs Satisfaction. Variables not measured on a 7-point scale include: Intentions to Participate (1-5), Actual Participation (0-1), Gender (0-1).

\*\**p*<0.01, \**p*<0.05, <sup>+</sup>*p*<.10 (two tailed)

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Table 2

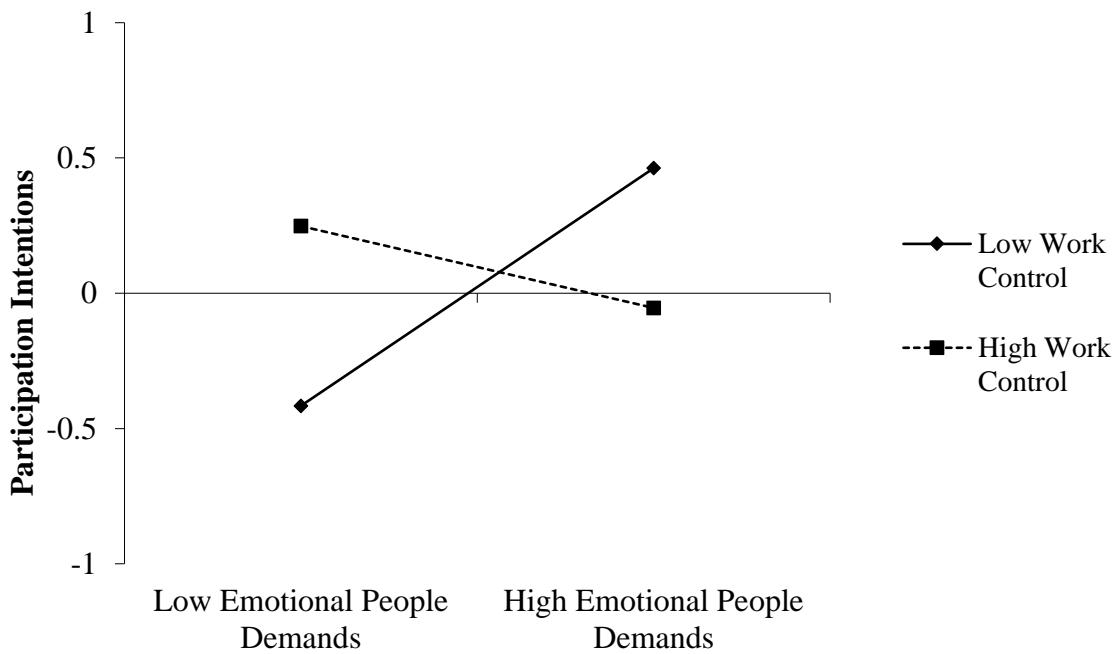
*Regression coefficients and model summaries for moderated regression analysis testing Work Perceptions Model.*

Variable	Participation Intentions		
	B	SE	p
<i>Step 1</i>			
Constant	0.01	0.11	.95
Emotional Situation Demands	0.07	0.08	.40
Emotional People Demands	0.07	0.09	.45
Supervisor Support	0.29*	0.12	.02
Organisational Trust	-0.19	0.14	.10
PNS Relatedness	0.12	0.10	.23
PNS Competence	0.02	0.12	.90
PNS Autonomy	-0.01	0.15	.97
Work Control (Moderator)	0.06	0.12	.60
R <sup>2</sup>	.13*	1.20	.04
<i>Step 2</i>			
Constant	0.06	0.13	.65
Emotional Situation Demands	0.06	0.09	.47
Emotional People Demands	0.09	0.09	.31
Supervisor Support	0.24*	0.12	.05
Organisational Trust	-0.13	0.12	.27
PNS Relatedness	0.11	0.10	.28
PNS Competence	0.03	0.12	.81
PNS Autonomy	0.04	0.16	.81
Work Control	0.03	0.12	.80
Emotional Situation Demands × Work Control	-0.02	0.07	.77
Emotional People Demands × Work Control	-0.15*	0.06	.02
Supervisor Support × Work Control	-0.12	0.09	.20
Organisational Trust × Work Control	0.04	0.10	.69
PNS Relatedness × Work Control	-0.08	0.09	.39
PNS Competence × Work Control	0.08	0.09	.42
PNS Autonomy × Work Control	-0.02	0.11	.83
R <sup>2</sup>	.20*	1.19	.05
R <sup>2</sup> change	.07		.24
Moderation effect size ( $f^2$ )	.09		

*Note.* Listwise N = 120. SE = Standard error. R<sup>2</sup> is unadjusted.

\*\*  $p < 0.01$ , \*  $p < 0.05$ , +  $p < 0.10$

## Participation in WHP



*Figure 5:* Interaction between emotional people demands and work control in predicting participation intentions. Variables centred around mean.

**Work Structure Model.** In testing the Work Structure Model, the main effects model from step 1 was not statistically significant ( $R^2 = .09$ ,  $F(7, 110) = 1.52$ ,  $p = .17$ ; Table 3) and no variables had statistically significant coefficients. At step 2, the addition of interaction terms did not provide a statistically significant model ( $R^2 = .11$ ,  $F(13,104) = 0.95$ ,  $p = .51$ ; Table 3), and no coefficients or interaction terms were statistically significant. The  $R^2$  change with the addition of interaction terms was not significant ( $R^2$  change =  $.02$ ,  $p = .92$ ; Table 3) and had an effect size  $f^2$  of  $.02$ , so a small effect size for the moderation was obtained. No interaction terms approached statistical significance, suggesting that while the addition of work control as a moderator improves the model and explains more variance in intentions to participate in The Wellbeing Game, this change was not enough to justify the interpretation of work control being a moderator. The variables in the Work Structure Model thus did not predict participation intentions, and none of the relationships tested were moderated by work control.

## Participation in WHP

Table 3

*Regression coefficients and model summaries for moderated regression analysis testing Work Structure Model.*

Variable	Participation Intentions		
	B	SE	p
<i>Step 1</i>			
Constant	0.16	0.17	.35
Availability – Cost	0.08	0.09	.42
Availability – Work Hours	-0.01	0.09	.95
Availability – Org Cares	0.04	0.09	.63
Workload	0.12	0.11	.28
Work Schedule – Somewhat Variable	-0.33	0.33	.33
Work Schedule – Variable Schedule	-0.36	0.26	.17
Work Control (Moderator)	0.11	0.11	.32
R <sup>2</sup>	.09	1.23	.17
<i>Step 2</i>			
Constant	0.14	0.19	.47
Availability – Cost	0.07	0.10	.48
Availability – Work Hours	-0.01	0.11	.96
Availability – Org Cares	0.04	0.09	.68
Workload	0.13	0.11	.23
Work Schedule – Somewhat Variable	-0.29	0.34	.40
Work Schedule – Variable Schedule	-0.32	0.27	.23
Work Control	0.18	0.16	.27
Availability - Cost × Work Control	0.05	0.09	.62
Availability – Work Hours × Work Control	0.00	0.08	.96
Availability – Org Cares × Work Control	-0.05	0.08	.56
Workload × Work Control	-0.03	0.10	.74
Work Schedule – Somewhat Variable × Work Control	-0.32	0.29	.28
Work Schedule – Variable Schedule × Work Control	-0.07	0.23	.28
R <sup>2</sup>	.11	1.25	.51
R <sup>2</sup> change	.02		.92
Moderation effect size ( $f^2$ )	.02		

*Note.* Listwise N = 117. SE = Standard error. R<sup>2</sup> is unadjusted.

\*\*  $p < 0.01$ , \*  $p < 0.05$ , +  $p < 0.10$

## Mediation Analyses

Research Question 3 focused on the mediating role of intentions to participate between organisational factors and actual participation. Mediation analyses were also separated into testing the Work Perceptions Model and Work Structure Model.

**Work Perceptions Model.** The results of the mediation analysis of the Work Perceptions Model are displayed in Table 4. The path between work variables and the mediator (path  $a$ ), participation intentions, was statistically significant with an  $R^2$  of .13 ( $p = .03$ ). At this

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stage, two coefficients were statistically significantly related to participation intentions: Supervisor support ( $B = 0.30, p < .05$ ) and organisational trust ( $B = -0.19, p < .10$ ). Supervisor support was positively related to participation intentions, as in the moderation analysis above, thus higher supervisor support was related to higher intentions to participate. Organisational trust was negatively related to participation intentions, thus having more trust in the organisation was associated with lower intentions to participate in The Wellbeing Game.

In testing direct paths between organisational factors and actual participation (path  $c'$ ) and between participation intentions and actual participation (path  $b$ ), two paths were statistically significant. Supervisor support had a statistically significant direct effect on actual participation ( $B = -0.59, p < .05$ ), thus those with higher supervisor support were less likely to actually play The Wellbeing Game. Participation intentions had a statistically significant direct effect (path  $b$ ) on actual participation ( $B = 0.40, p < .10$ ). No indirect relationships (path  $ab$ ) were statistically significant using the 95% confidence interval. However, when utilising a 90% confidence interval, supervisor support had a significant indirect effect ( $LLCI = .005, ULCI = .341$ ), suggesting that supervisor support affects actual participation via participation intentions. The significance of  $R^2$  in predicting actual participation directly from work variables (path  $c'$ ) and participation intentions (path  $b$ ) was statistically significant at the  $p < .10$  level of significance as the McFadden and Cox Snell estimates of logistic regression  $R^2$  extracted a  $p$  value of .08, thus the Work Perceptions Model predicts actual participation with work perception variables as well as participation intentions as a mediator.

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Table 4

*Results of mediation analysis predicting actual participation via participation intentions for Work Perceptions Model. Unstandardised coefficients and standard errors (SE).*

Work variable	Mediator			Dependent Variable			Indirect effects (ab)		CI Indirect effects	
	Participation Intentions			Actual Participation			Coefficient	SE	LLCI	ULCI
	Coefficient	SE	p	Coefficient	SE	p				
Constant	0.00	0.11	.97	-1.68**	.27	.00				
Emotional Situation Demands	0.08	0.08	.34	0.01	0.18	.98	0.03	0.05	-0.03	0.15
Emotional People Demands	0.06	0.08	.48	0.16	0.20	.42	0.02	0.05	-0.06	0.17
Supervisor Support	0.30*	0.12	.01	-0.59*	0.27	.03	0.12	0.12	-0.01	0.39
Organisation Trust	-0.19 <sup>+</sup>	.11	.10	0.34	0.26	.19	-0.08	0.09	-0.31	0.01
PNS – Relatedness	0.12	0.10	.23	-0.00	0.22	.98	0.05	0.07	-0.03	0.22
PNS – Competence	0.01	0.12	.91	0.10	0.27	.71	0.01	0.07	-0.13	0.17
PNS – Autonomy	0.02	0.14	.86	-0.05	0.32	.89	0.01	0.08	-0.15	0.17
Participation Intentions				.40 <sup>+</sup>	0.23	.08				
R <sup>2</sup>	.13*		.03							
R <sup>2</sup> McFadden						.08				
R <sup>2</sup> Cox Snell						.08				

*Note:* Listwise N = 121. LLCI = lower limit of 95% confidence interval, ULCI = upper limit of 95% confidence interval. R<sup>2</sup> is unadjusted.

\*\* p<.01. \* p<.05. <sup>+</sup>p<.10, two tailed

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**Work Structure Model.** The results of the mediation analysis for the Work Structure Model are displayed in Table 5. The relationships between organisational factors and participation intentions (path *a*) were not statistically significant with an  $R^2$  of .08 ( $p = .15$ ). No coefficients were statistically significant in predicting participation intentions.

Two variables were significantly related to actual participation: Workplace health promotion availability (work hours) ( $B = -0.44, p < .05$ ) and variable work schedule ( $B = -0.98, p < .10$ ). Providing employees with time to engage with workplace health promotion activities during work hours and variable work schedule were both negatively related to actual participation. No significant indirect effects were observed, and participation intentions was not significantly related to actual participation in the Work Structure Model ( $B = .27, p = .20$ ).

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Table 5

*Results of mediation analysis predicting actual participation via participation intentions for Work Structure Model. Unstandardised coefficients and standard errors (SE).*

Work variable	Mediator Participation Intentions			Dependent Variable Actual Participation			Indirect effects (ab)		CI Indirect effects	
	Coefficient	SE	p	Coefficient	SE	p	Coefficient	SE	LLCI	ULCI
Constant	0.18	0.17	.30	-1.25**	0.36	.00				
Availability – Cost	0.09	0.09	.35	-0.20	0.19	.29	0.02	0.04	-0.02	0.18
Availability – Work Hours	-0.00	0.09	.97	-0.44*	0.22	.04	-0.00	0.03	-0.08	0.06
Availability – Org Cares	0.09	0.08	.45	0.25	0.18	.16	0.02	0.03	-0.03	0.13
Workload	0.13	0.11	.22	0.11	0.24	.66	0.04	0.05	-0.02	0.21
Schedule – Somewhat Variable	-0.36	0.33	.28	-0.41	0.75	.58	-0.10	0.15	-0.58	0.06
Schedule – Variable Schedule	-0.39	.25	.13	-0.98 <sup>+</sup>	0.59	.09	-0.11	0.13	-0.50	0.03
Participation Intentions				0.27	0.21	.20				
R <sup>2</sup>	.08		.15							
R <sup>2</sup> McFadden						.12				
R <sup>2</sup> Cox Snell						.11				

Note: Listwise N = 118. LLCI = lower limit of 95% confidence interval, ULCI = upper limit of 95% confidence interval. R<sup>2</sup> is unadjusted.

\*\* p<.01. \* p<.05. <sup>+</sup>p<.10, two tailed

## Follow-up Analyses

One finding from the moderation analysis was that work control moderated the relationship between emotional people demands and participation intentions. This moderation was tested in the mediated Work Perceptions Model by testing a moderated mediation analysis with work control as a moderator of the relationship between emotional people demands and the mediator, participation intentions (path *a*), with actual participation as the overall outcome. In this analysis,  $R^2$  in predicting participation intentions with the Work Perceptions Model, as well as the interaction between emotional people demands and work control, was .16 ( $p < .05$ ). Additionally, the interaction term between emotional people demands and work control was significant ( $B = -0.11, p < .05$ ) in predicting participation intentions, however emotional people demands did not have a significant indirect effect at different levels of work control. Work control thus moderated the relationship between emotional people demands and participation intentions, and participation intentions was positively related to actual participation.

Another finding from the moderation and mediation analyses was that supervisor support positively predicted participation intentions, that participation intentions positively predicted actual participation, but that supervisor support negatively directly predicted actual participation. Testing mediation models assumes consistent mediation, which is that positive indirect effects have positive direct effects (and vice versa) (MacKinnon, Krull, & Lockwood, 2000). When direct and indirect effects have opposite signs, such as that between supervisor support and actual participation, the result may be inconsistent mediation (Davis, 1985). Inconsistent mediation may be explained by a suppression effect, whereby the relationship between variables is changed or reduced due to the relationship a third, suppressing variable, has with the dependent and independent variables (MacKinnon et al., 2000). Suppression was assessed to explain the inconsistent mediation and determine why supervisor support was

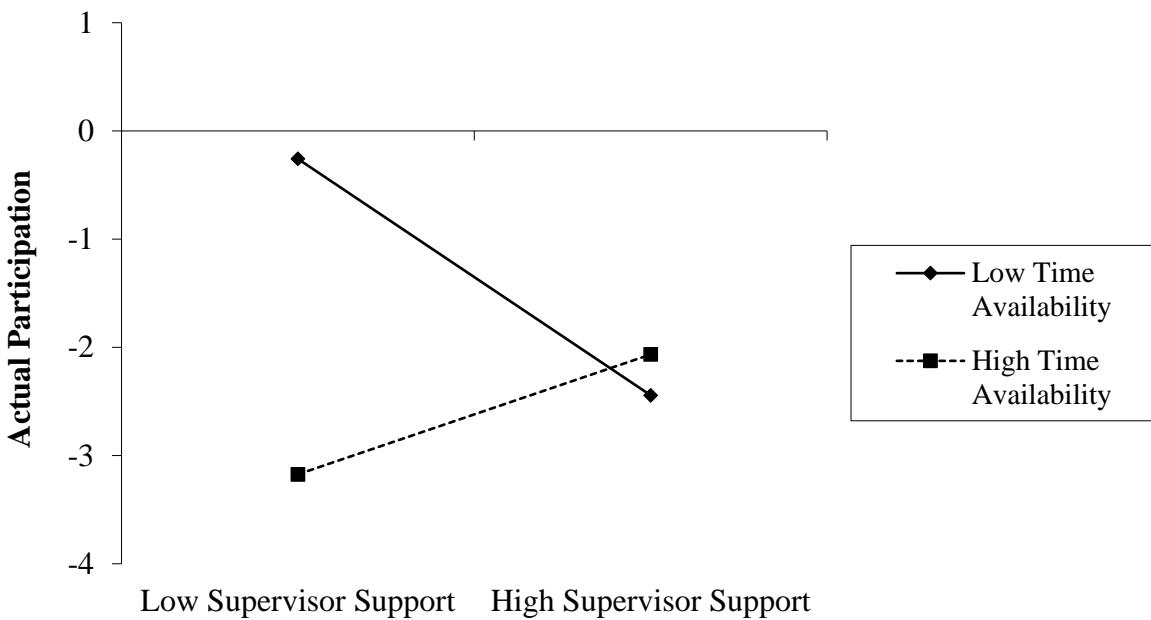
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negatively related to actual participation while positively related to participation intentions.

Several demographic variables, as well as work variables from the Work Structure Model, were tested as moderators of the relationship between supervisor support and actual participation.

The results of these analyses showed that time availability moderated this relationship.

When time availability was added as a moderator to the path between supervisor support and actual participation, supervisor support was no longer a significant predictor ( $B = -0.20$ ,  $p = .52$ ), however the interaction term, supervisor support  $\times$  time availability, was significant ( $B = 0.54$ ,  $p < .05$ ). The interaction effect is shown in Figure 6, indicating that the relationship between supervisor support and actual participation was different depending on levels of time availability outside of work. For those with less time availability outside of work, the relationship between supervisor support and actual participation was negative, but for those with more time available outside of work, the relationship was positive. Those with more time availability outside of work and low supervisor support were least likely to actually participate, however those with low supervisor support and low time availability outside of work were most likely to actually participate. There was not a large difference between those who had high supervisor support and low time availability, and those who had high supervisor support and high time availability.



*Figure 6:* Interaction between supervisor support and time availability outside of work in predicting actual participation.

Please note Actual Participation was dichotomous, and scale shown in figure is hypothetical, but used to illustrate the relationship between supervisor support and actual participation at different levels of the time availability outside of work.

## Discussion

The current research sought to provide a strategy that organisations can adopt in order to ensure maximal participation in WHP programmes offered. Such a strategy requires knowledge of what factors the organisation can monitor and/or modify that are related to participation in WHP programmes irrespective of employees' personal characteristics. Research question one sought to understand the relationship between organisational factors and intentions to participate in The Wellbeing Game. Research Question 2 assessed work control as a moderator of the relationship between these organisational factors and participation intentions. Finally, Research Question 3 assessed the mediating role of intentions to participate between organisational factors and actual participation in The Wellbeing Game. Analyses separated organisational factors into two models: The Work Perceptions Model and the Work Structure Model.

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Results from the Work Perceptions Model suggested that this model accounted for differences in participation intentions, and specifically that supervisor support was positively related to participation intentions and organisational trust was negatively related to participation intentions. Results from the Work Structure Model did not find any statistically significant predictors of participation intentions. Work control moderated the relationship between organisational factors and participation intentions in the Work Perceptions Model, but not the Work Structure Model. Specifically, work control moderated the relationship between emotional work demands and participation intentions. In assessing participation intentions as a mediator between organisational factors and actual participation, intentions acted as a mediator in the Work Perceptions Model but not the Work Structure Model. In the Work Structure Model, organisational factors appeared to directly predict actual participation without going through the mediator, participation intentions. This model concluded that availability of WHP during work hours was negatively related to actual participation, and that having a variable work schedule was negatively related to actual participation. One particular finding showed inconsistent mediation: Supervisor support was positively related to participation intentions and participation intentions were positively related to actual participation, but supervisor support was negatively directly related to actual participation. These findings have several theoretical and practical implications for research into WHP participation.

## Theoretical Implications

The first implication the current research has for research into WHP participation is that supervisor support is an organisational factor related to both participation intentions and actual participation. Social support from management and a supportive social work environment are established determinants of employee participation in WHP programmes (Crump et al., 1996). Jorgensen et al. (2016) found that social support was significantly associated with participation in exercise facilities, and the current research extends this finding by examining support from

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supervisors and utilising an intervention that focuses on mental wellbeing. The current research indicates that perceiving supervisors to provide support in the form of performance feedback, challenging work assignments, and provision of work assignments to promote development and visibility, increases an employee's intentions to participate in a WHP initiative offered, and may indicate that supervisors can be positive advocates of WHP through their supportive behaviours. Supervisors who feel supported by the organisation reciprocate support to subordinates (Shanock & Eisenberger, 2006), thus providing support to employees is a top-down process whereby social support is reciprocated throughout the organisation if the organisation is supportive of its incumbents. Through the clear, observable modelling of supportive behaviours, organisations may become more socially supportive environments and supervisors and senior leaders may become advocates of WHP (Spence, 2015).

The link between organisational trust and participation intentions indicated that employees who perceive their organisations acts with integrity, openness, discreteness, without ulterior motives, and does so consistently, have less intentions to participate in The Wellbeing Game. This finding was unexpected as Spence (2015) theorised that not trusting an organisation would discourage participation. Despite previous research suggesting this relationship would be positive, the observed negative relationship may have theoretical implications in terms of organisational trust vs. corporate social control. Spence (2015) argued that organisational trust facilitates WHP participation through employees perceiving WHP being introduced to benefit them and not the organisation's public image (benevolence), be used with integrity and preserving employee privacy (integrity), giving consistent messages about health and WHP (predictability) and having requisite skills to successfully manage programmes (ability). The current study however assessed organisational trust in general, not trust of WHP administration. The negative relationship observed could be attributed to employees who lack organisational trust needing to engage in activities that enhance their

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wellbeing. Corporate social control and organisational trust of organisations administering WHP may obtain the result expected by Spence (2015), however the current research finds the opposite for general organisational trust.

Work control was found to moderate the relationship between emotional people demands and intentions to participate in The Wellbeing Game. Specifically, the relationship found that for those reporting low work control, the relationship between emotional people demands and participation intentions was positive, and for those reporting high work control this relationship was negative. Two results can be extrapolated from this finding. Firstly, facing emotionally demanding people at work did not appear to discourage participation intentions as participation intentions were highest for those with high emotional people demands. Secondly, work control did not act as a buffer as participation intentions were highest when work control was low coupled with high emotional people demands. This is opposite to the findings of Jorgensen et al. (2016) who found that high emotional demands coupled with low job control was associated with low participation in WHP activities. This also contradicts the Psychological Demand-Decision Latitude Model of Theorell and Karasek (1996) that having job control encourages the development of new behaviour patterns empowering employees to rise above psychologically challenges. This model categorised jobs with high psychological demands and low decision latitude (control) as being high strain and detrimental to health (Theorell & Karasek, 1996). The implication of this finding is that people who face emotionally demanding people with low control over how their work is conducted perceive more of a need for a wellbeing intervention, thus having more intentions to engage with such an initiative. Individuals dealing with people-related emotional demands with low work control may be a reason for intending to participate in The Wellbeing Game, but for people with high work control that may not be the case.

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In testing participation intentions as a mediator of the relationship between organisational factors and actual participation, it was found that participation intentions mediated the Work Perceptions Model but not the Work Structure Model. This finding was expected following the principles of the Theory of Planned Behaviour that behavioural intentions are a prerequisite to actual behaviour (Ajzen, 1991). This result is indicative that behavioural intentions are a precursor to enacted behaviour (in this case, participation) when intentions are formed on the basis of work perceptions. Additionally, this relationship was not perfect and shows that participation intentions do not perfectly account for actual participation, supporting the claim of Rongen et al. (2014) that WHP research needs to assess both participation intentions and actual participation, without using behavioural intentions as a proxy measure of actual behaviour.

The Work Structure Model found that two variables were directly related to actual participation without participation intention mediating the relationship. Making WHP available through provision of time during work hours was one of these relationships, however the relationship was negative. This result is contrary to the assertion that WHP programmes need to be perceived as being available to enable participation (Grosch et al., 1998). Not having time available is a commonly reported barrier to WHP participation (Bright et al., 2012; Lakerveld et al., 2008; Person et al., 2010). While Jorgensen et al. (2016) suggested that having WHP available during work hours rather than during leisure hours may reduce the impact imposed by not having time to engage in WHP, this suggestion is not supported in the current study. This may be because employees do not believe wellbeing activities should be accessed during work hours or that engaging in wellbeing activities should not be part of work. Also, individuals from organisations that make WHP less available during work hours may be more likely to play a Wellbeing Game when it is offered to perhaps compensate for a lack of wellbeing-improving activities at work. The theoretical implication of this finding is that WHP is complex

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and requires a deeper understanding of through what mechanisms an organisation can make WHP more available and accessible and what type of initiatives are appropriate to offer during work or outside of work hours.

The other direct relationship was between variable work schedules and actual participation. This result confirms that work schedule variability is a barrier to participation (Bright et al., 2012; Kilpatrick et al., 2016; Rongen et al., 2014). This finding contributes to existing research that variable work schedules may result in employees not being able to plan health-promoting activities, and WHP research needs to consider the nature of employee work schedules. As this relationship was direct with being mediated by participation intentions, it suggests that variable work schedules affect an employee's ability to participate regardless of their intentions to do so.

The inconsistent mediation between supervisor support and actual participation showed two positive path coefficients between supervisor support, participation intentions, and actual participation, but a negative path coefficient between supervisor support and actual participation. To probe the negative direct relationship further, time availability to engage in activities that enhance wellbeing was added as a moderator. The moderation showed that for individuals with low time availability outside of work to participate in activities such as The Wellbeing Game, the relationship between perceived supervisor support and actual participation was negative. For individuals with high time availability outside of work to participate in activities such as The Wellbeing Game, this relationship was positive. Participation was highest for those with low supervisor support coupled with low time availability outside of work. This could be attributed to the time availability measure inadvertently capturing whether the individuals have the time to explore wellbeing activities that work best for them, other than The Wellbeing Game. Individuals who don't have a lot of time to explore wellbeing activities could be more inclined to participate in a wellbeing activity

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conveniently offered, such as The Wellbeing Game. Additionally, the low supervisor support could indicate a need for a wellbeing boost, whereas those with high supervisor support and high time availability outside of work may already have higher wellbeing levels or have had time to find activities outside of work that they use to enhance their wellbeing. The indirect effect from the mediation does however suggest that supervisor support is related to actual participation via the mediating effect of participation intentions, thus perceived supervisor support should be examined in terms of its positive effects on participation intentions rather than its direct effects on actual participation.

## Practical Implications

An understanding of organisational factors and participation in a wellbeing initiative provides vital information for organisations introducing similar WHP initiatives. Participation in WHP depends somewhat on the working environment (Jorgensen et al., 2016), and the current study has identified several organisational factors that may require ongoing monitoring and adjustment in order to ensure maximum participation so that employees and the organisational itself may reap the benefits.

Firstly, organisations may need to foster a socially supportive organisation through supporting supervisors and senior leaders who may reciprocate support to subordinates and model clear, observable supportive behaviours. This support does not necessarily need to be specific to WHP as supervisor support in the form of performance feedback, challenging work assignments, and provision of work assignments to promote development and visibility was found to be positively related to intentions to participate in The Wellbeing Game, which in turn was positively related to participation in The Wellbeing Game. Regular measurement of employees' perceived supervisor support and training for supervisors in how to provide on-the-job support could improve employee intentions to participate in a wellbeing initiative.

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While organisations should be clear as to why they implement WHP activities, organisational trust in general was not found to be related to higher participation. Rather, it was found that those with lower organisational trust had higher intentions to participate in The Wellbeing Game, possibly due to those lacking organisational trust being more receptive to activities that enhance their wellbeing. In this case, it should be in an organisation's best interests to offer WHP activities to employees who have low organisational trust or low wellbeing as a means of improving their wellbeing status, however future research is needed to garner a better understanding of the mechanisms through which organisational trust predicts WHP participation.

For employees who face emotionally demanding people in their work and have little control over how their work is conducted, organisations should consider WHP as a means of boosting wellbeing as these employees may be particularly receptive to wellbeing initiatives. Jobs with low emotional people demands and high work control may not require a wellbeing initiative, thus employees may need to be targeted with other WHP activities.

Participation intentions as a mediator in the Work Perceptions Model requires an understanding of how organisations can translate intentions to participate into actual participation, as participation intentions was not a strong predictor of actual participation. This also indicates that behavioural intentions should not be used as a proxy measure of behaviour because not all those who intend to participate will follow through on these intentions (Rongen et al., 2014), thus organisations implementing WHP should consider the responses of employees participation intentions as this is likely an underestimation of actual participation when WHP is introduced. The gap between behavioural intentions and actualised behaviour is a common occurrence in the Theory of Planned Behaviour, however this gap may be bridged by implementation intentions (Sheeran, 2002). Implementation intentions involve propositions of "I intend to do X in situation Y", and by attaching behavioural intentions to a situational

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trigger, implementation intentions demonstrate an increased likelihood of actualised behaviour compared to control studies (Sheeran, 2002). Implementation intentions could address the intention-behaviour gap and be a suitable addition of a WHP implementation strategy, as organisations could encourage employees demonstrating an interest in WHP to create situational triggers to participate in WHP.

Beyond organisations needing to increase employees intentions to engage in WHP, the current study offers insight in how they may directly improve participation. Firstly, for employees working in jobs where they might not be able to engage in WHP during work hours, organisations may need to offer WHP activities that are easily accessible, such as The Wellbeing Game. Additionally, organisations may need to restructure jobs to reduce variable work schedules, possibly by making weekly schedules somewhat more consistent and find ways employees may engage with WHP when they are unable to plan activities in advance. By reducing variability in work schedules, employees may be more likely to actually participate.

## Limitations

This study does however have limitations that hinder theoretical and practical implications. A common issue of regression analysis is interpretations of direction and causality. While the results and conclusions outlined above indicate statistically significant relationships in terms of predictor variables predicting outcomes, these results cannot all necessarily be assumed to be causal in nature. The regression coefficients used as evidence provide an estimate of how an outcome changes as a function of a predictor variable (Field, 2013), however as an experimental design was not employed it cannot be assumed that work variables cause participation intentions. Despite this, actual participation was assessed after the survey was completed, thus organisational factors as well as participation intentions can be assumed to predict actual participation.

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Analyses were conducted without controlling for demographic variables or other personal attributes that may affect participation intentions or actual participation, beyond the organisational factors measured. Studies have identified that personal attributes including gender, age, education, or marital status account for variation in participation rates in WHP (Brill et al., 1991; Robroek et al., 2009), and that health-related factors affect WHP participation (Jorgensen et al., 2015; Persson et al., 2013). While implementation of WHP requires consideration into who is trying to be reached and what their health status is, these attributes do not lend themselves to organisational intervention (Kilpatrick et al., 2015), thus were not central to the current study. The use of control variables is often for purification of findings, and these controls are commonly proxies for variables that are of real theoretical interest (Spector & Brannick, 2011). Inclusion of statistical control because they have observed relationships with substantive outcomes is insufficient justification of their inclusion in statistical analyses, and instead, variables of theoretical importance to the purpose of the study should be the primary focus on analyses (Spector & Brannick, 2011). For this reason, demographic variables and health-related variables were left out of statistical analyses to isolate organisational factors that answer the research questions posed.

The measurement of organisational factors and participation intentions also posed three limitations: Self-report bias, acquiescence bias, and common method variance. Self-report bias is common in organisational behaviour research as incumbents respond in social desirable ways (Donaldson & Grant-Vallone, 2002). Respondents are not necessarily conscious of exaggerating their impression in surveys as their inflated scores may be a case of self-deceptive enhancement (Paulhus, 1986). Scores for organisational factors that make employees appear to be good organisational members, such as organisational trust, may thus be somewhat inflated. Additionally, anonymity in self-reported data may decrease motivation to respond in socially desirable ways (buffering against self-report bias) but does not necessarily increase accuracy

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of data as respondents may respond in ways that fulfil the minimum requirements in order to finish faster (Lelkes, Krosnick, Marx, Judd, & Park, 2012) such as through responding with general agreement or disagreement, as is the case in acquiescence and counter-acquiescence (Rammstedt & Farmer, 2013). Finally, common method variance is a common problem in studies where information is obtained using the same source (such as online survey) as correlations between constructs may be inflated due to the method employed (Shultz, Whitney, & Zickar, 2013). The use of self-report across organisational factors and participation intentions impacts the validity of measures, and thus the conclusions drawn (Shultz et al., 2013). Actual participation however was an objective measure obtained from a database online by looking at whether participants had made a website login, thus was free from these issues.

The Wellbeing Game itself posed a challenge to the project. The Wellbeing Game was employed as the WHP activity because it was free, easily accessible, and available for research use. A review by Robroek et al. (2009) found that WHP programmes that focus on multiple components of health without focusing on a single aspect yield greater participation. The Wellbeing Game however focuses on wellbeing and the Five Ways to Wellbeing (Aked et al., 2009), it does not focus on other aspects of health such as physical fitness, disease prevention etc. Different WHP programmes have different target groups and is thus self-selecting in nature (McGillivray, 2002). The Wellbeing Game may not have matched the needs of the participants in this study, thus nonparticipation may be partly attributed to respondents not seeing The Wellbeing Game as an initiative that applied to them or helped/improve their wellbeing compared to other, more appropriate initiatives. This highlights the importance of needs assessment when planning WHP programmes in order to match introduced WHP initiatives to employee needs and wants.

## Future Research

While the current research provides further insight into how organisational factors influence employees' intentions to participate in a wellbeing initiative and actual participation in a wellbeing initiative, further research can extend the findings of this paper by examining the mechanisms through which organisational factors affect participation and addressing the limitations from this study.

Organisational factors were measured in general terms, i.e. supervisor support was measured as on-the-job supervisor support, and organisational trust was measured as general organisational trust, not specific to the administration of WHP. Future research examine whether relationships change when organisational factors are worded specific to WHP. Additionally, organisational trust was largely believed to affect participation through employees seeing WHP as a means of improving organisational functioning, however this was not captured in this study. Future research should also examine corporate social control to assess whether organisational trust and corporate social control have different relationships with WHP, as both may be important determinants of participation.

Future research could also gain a richer understanding of the mechanisms through which organisational factors affect participation intentions and actual participation. This could be through examining organisational factors such as supervisor support and organisational trust by looking at the different dimensions of these variables, how they affect other determinants of participation, and how these interactions lead to increased or decreased participation. For example, organisational trust was believed to be related to participation intentions in this study through people with low trust requiring a wellbeing booster, so organisational factors could be assessed with regards to their relationship with wellbeing.

Future research in WHP participation regarding organisational variables should also address the limitations of this study. Data should be gathered from sources other than online

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surveys and could compare self-report measures with other sources, such as supervisor-rated measures. An experimental design could be adopted where organisational factors are manipulated in a waitlist-control study, assessing the effect of organisational factor changes on participation outcomes to provide more certainty in direction of causality.

Finally, research should examine how organisational factors relate to participation outcomes considering the different WHP programmes that are available, as different target groups will self-select into different WHP programmes. The Wellbeing Game could be assessed alongside other interventions, such as gym memberships, food interventions, smoking cessations workshops etc. This may help researchers and practitioners gain an understanding of the differential impact organisational factors have on different forms of WHP.

## Concluding Remarks

This study contributed to the WHP research by assessing how perceptions of work and how work is structured affects intentions to participate in a wellbeing activity, and whether intentions to participate lead to actual participation. Jorgensen et al. (2016) asserted that employee participation in WHP programmes is dependent on the work environment. The current study supports this claim by finding that supervisor support and organisational trust are related to intentions to participate in a wellbeing initiative, and that the relationship between emotional people demands and participation is moderated by work control. WHP being made available during work hours as well as variable work schedules were found to be directly linked to actual participation. The link found between participation intentions and actual participation in the Work Perceptions Model justifies the application of the theory of planned behaviour in WHP, as participation intentions account for variance in actual participation, however the gap between the two may need to be addressed using methods such as implementation intentions. Future research in WHP participation should address the limitations of this study as well as assess the mechanisms through which organisational factors affect participation outcomes.

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This research offers a preliminary strategy for organisations implementing WHP programmes by highlighting organisational factors that require assessment and modification and highlighting the need for strategies to ensure positive intentions are enacted upon.

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## Appendices

### Appendix A – Advertisement

The advertisement features five colorful speech bubbles with the following text:

- CONNECT**: TALK & LISTEN, BE THERE, FEEL CONNECTED
- Give**: Your time, your words, your presence
- TAKE NOTICE**: REMEMBER THE SIMPLE THINGS THAT GIVE YOU JOY
- KEEP LEARNING**: EMBRACE NEW EXPERIENCES, SEE OPPORTUNITIES, SURPRISE YOURSELF
- BE ACTIVE**: DO WHAT YOU CAN, ENJOY WHAT YOU DO, MOVE YOUR MOOD

**CALL FOR PARTICIPANTS**

Designed by the Mental Health Foundation of New Zealand, the Wellbeing Game is an easy to use tool to be mindful of your wellbeing.

The Wellbeing Game is about noticing the things that make life a little brighter and taking pleasure in them.

Play solo, with friends, or with colleagues, and accumulate happiness one activity at a time!

As part of my Masters research, I am looking into how the workplace might affect engagement with games such as this.

I am looking for individuals who are working and not self-employed, and have been in their current role for at least 3 months.

**Participation** involves completing a short survey, which should take 15-20 minutes. You will be provided with a link to the Wellbeing Game at the conclusion of the survey, which you may access at your leisure.

Those who complete the survey may enter a draw to win **one of five \$100.00 shopping vouchers!**

Follow this link to take the survey and go in the draw:

<https://tinyurl.com/wellbeinggame>



E-mail: [jordan.mayes@pg.canterbury.ac.nz](mailto:jordan.mayes@pg.canterbury.ac.nz) for more information.

<a href="https://tinyurl.com/wellbeinggame">tinyurl.com/wellbeinggame</a> <a href="mailto:jordan.mayes@pg.canterbury.ac.nz">jordan.mayes@pg.canterbury.ac.nz</a>							

## Appendix B – Information Sheet and Consent

Department of Psychology  
Telephone: +64 22 678 4572  
Email: jordan.mayes@pg.canterbury.ac.nz

### Organisational Factors that Influence Participation in a Wellbeing Initiative.

My name is Jordan Mayes, and I am a current postgraduate student at the University of Canterbury studying toward a Master of Science degree in Applied Psychology. As part of a research project, I am recruiting employees to take part in a study examining the relationship between organisational factors and participation in workplace health promotion.

If you choose to participate in this study, your involvement in this project will be:

- To complete this survey and provide your e-mail address, which could take approximately 20 minutes of your time.
- Your e-mail address is required so that you may be contacted if you have won the prize draw, if you have requested a summary of results, and to match your survey responses with how many times you log in to The Wellbeing Game website. Your e-mail address will be removed from the dataset on 6<sup>th</sup> of October when data analysis begins.
- At the conclusion of the survey, you will be provided with a link to The Wellbeing Game website.
- The Wellbeing Game is an online game developed by the Mental Health Foundation of New Zealand, and involves logging activities throughout the day which are linked to your personal wellbeing.
- Participation in this game is optional and voluntary.
- Should you choose to engage with the game, registration with the game should take two minutes, and logging activities should take no more than five minutes per day, depending on how much you choose to engage.

This survey will ask questions about aspects of your organisation you may find sensitive and distressing. Should the act of completing the survey or engaging in The Wellbeing Game cause you any distress, I have included the number of several phone services below to provide support and information.

Participation in this study is voluntary and you have the right to withdraw at any stage without penalty. You may ask for your raw data to be returned to you or destroyed at any point. If you withdraw, I will remove information relating to you, however once analysis of raw data has started on the 6<sup>th</sup> of October it will become increasingly difficult to withdraw your raw data.

The results of the project may be published, but you may be assured of the complete confidentiality of data gathered in this investigation: Your identity will not be made public without your consent. To ensure anonymity and confidentiality, your e-mail address will be stored separately from survey data, and will only be used for the purpose of matching survey data to Wellbeing Game data, thus the protection of the identity of each employee is guaranteed. You may be contacted if you have won one of the \$100.00 shopping vouchers, or if you have requested the results of the study. Raw data will be accessible by the research team, including myself and three supervisors. Data is stored on a password protected personal computer and external hard drive, and backed up on

## Participation in WHP

the university servers. Raw data is deleted 5 years after the project is completed. Overall findings will be included in a written Masters' dissertation and may be included in future academic publications or conferences. A thesis is a public document and will be available through the UC Library.

This project is being carried out as a requirement of a Masters' dissertation by Jordan Mayes under the supervision of Katharina Näswall, who can be contacted at [katharina.naswall@canterbury.ac.nz](mailto:katharina.naswall@canterbury.ac.nz). She will be pleased to discuss any concerns you may have about participation in the project.

This project has been reviewed and approved by the University of Canterbury Human Ethics Committee, and participants should address any complaints to The Chair, Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch ([human-ethics@canterbury.ac.nz](mailto:human-ethics@canterbury.ac.nz)).

The following services are free to phone and available 24/7 should any aspects of the survey or The Wellbeing Game cause you distress.

**Lifeline:** 0800 543 354  
For counselling and support.

**Depression Helpline:** 0800 111 757  
To talk to a trained counsellor.

**Tautoko Suicide Crisis Helpline:** 0508 828 865  
If you're in distress, or worries about someone else.

**Healthline:** 0800 611 116  
For advice on health-related issues from trained registered nurses.

Or contact your GP.

For more information on mental health and wellbeing, please visit **New Zealand Health Foundation of New Zealand**: <https://www.mentalhealth.org.nz/>

I have been given a full explanation of this project and have had the opportunity to ask questions.

I understand what is required of me if I agree to take part in the research.

I understand that participation is voluntary and I may withdraw at any time without penalty. Withdrawal of participation will also include the withdrawal of any information I have provided should this remain practically achievable. Opting out of the survey is possible by exiting/closing the browser before submission.

I understand that any information or opinions I provide will be kept confidential to the researcher and supervisors, and that any published or reported results will not identify the participants or their organisations. I understand that a thesis is a public document and will be available through the UC Library.

I understand that all data collected for the study will be kept in locked and secure

## Participation in WHP

facilities and/or in password protected electronic form and will be destroyed after five years.

I understand the risks associated with taking part and how they will be managed.

I understand that I can contact the researcher [Jordan Mayes, jordan.mayes@pg.canterbury.ac.nz] or supervisor [Katharina Näswall, katharina.näswall@canterbury.ac.nz] for further information. If I have any complaints, I can contact the Chair of the University of Canterbury Human Ethics Committee, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz).

I understand I can request a summary of the results of the project at the end of this survey.

By clicking continue, I agree to participate in this research project.

## Appendix C – Survey Items

### Demographics

Please select the option that applies to you for each question.

- 1) Please identify your gender:
  - a. Male
  - b. Female
  - c. Other
- 2) Please identify your age:
  - a. 18-24
  - b. 25-39
  - c. 40-55
  - d. 55+
- 3) Please identify your ethnicity:
  - a. New Zealand European (Pakeha)
  - b. Maori
  - c. Asian
  - d. European
  - e. Pacific Island
  - f. Other
- 4) Level of education:
  - a. No qualifications or certificates
  - b. High school certificate(s)
  - c. Trade certificate or diploma
  - d. University degree or equivalent tertiary qualification

### Perceptions of time availability and circumstance

The following questions assess your availability and busyness outside of your work. For the following statements, please indicate where you perceive yourself on the provided scale.

Please answer considering your personal life outside of work, e.g. family, children, partners, hobbies, commitments etc., according to the last 2 months.

(1 = *To a very low degree* to 7 = *To a very high degree*).

- 5) Outside of the workplace, I have lots of extra time to myself.
- 6) Outside of the workplace, I have the time to engage in activities that enhance my wellbeing.
- 7) Outside of the workplace, I have other commitments that prevent me from doing things for myself.
- 8) My lifestyle outside of work is very demanding.

### WHP Availability

The following questions assess how you perceive your organisation to support wellbeing initiatives such as The Wellbeing Game. For the statements below, please indicate to what degree your organisation assists in making such initiatives available to you using the scale provided.

(1 = *To no degree* to 7 = *To a very high degree*).

- 1) My organisation covers the costs of wellbeing initiatives.

## Participation in WHP

- 2) Activities that enhance my wellbeing get in the way of my work tasks.
- 3) My organisation allows me to access activities such as The Wellbeing Game during work hours.
- 4) My employer(s) care about our health and wellbeing at work.

## Workload

For the following questions, please indicate to what extent you experience the following.  
Please answer according to your work experiences over the last 2 months only.

(1 = Never to 7 = Extremely often).

- 5) To what extent does your job require your working fast?
- 6) To what extent does your job require your work hard?
- 7) To what extent does your job require a great deal of work to be done?
- 8) To what extent is there not enough time for you to do your job?
- 9) To what extent is there excessive work in your job?
- 10) To what extent do you feel there is not enough time for you to finish your work?
- 11) To what extent are you faced with conflicting demands on your job?
- 12) To what extent do you have the freedom to decide how to organise your work?
- 13) To what extent do you have control over what happens on your job?
- 14) To what extent does your job allow you to make a lot of your own decisions?
- 15) To what extent are you assisted in making your own decisions?

## Emotional Work Demands

For the following questions, please indicate to what extent you experience the following.  
Please answer according to your work experiences over the last 2 months only.

(1 = Never to 7 = Always).

- 16) Is your work emotionally demanding?
- 17) In your work, are you confronted with things that personally touch you?
- 18) Do you face emotionally charged situations in your work?
- 19) In your work, do you deal with people who incessantly complain, although you always do everything to help them?
- 20) In your work, do you have to deal with demanding people?
- 21) Do you have to deal with people who do not treat you with the appropriate respect and politeness?

## Supervisor Support

For the following statements, please indicate to what level you agree with the statements.  
Please answer according to your work experiences over the last 2 months only.

(1 = Strongly disagree to 7 = Strongly agree).

- 22) My supervisor makes sure I get the credit when I accomplish something substantial on the job.
- 23) My supervisor gives me helpful feedback about my performance.
- 24) My supervisor gives me helpful advice about improving my performance when I need it.
- 25) My supervisor supports my attempts to acquire additional training or education to further my career.

## Participation in WHP

- 26) My supervisor provides assignments that give me the opportunity to develop and strengthen new skills.
- 27) My supervisor assigns me special projects that increase my visibility in the organisation.

### Work Schedule

- 28) Please indicate your typical work schedule from one of the following options. Please answer according to your work schedules over the last 2 months.
  - a. I work a consistent Monday to Friday schedule.
  - b. I have variable work schedules.
  - c. I sometimes have variable work schedules, but not always.

### Organisational Trust

For the following statements, please indicate your level of agreement on the scale provided. Please answer according to your work experiences over the last 2 months.

(1 = *Strongly disagree* to 7 = *Strongly agree*).

- 29) I am not sure I fully trust my employer.
- 30) My employer is open and upfront with me.
- 31) I believe my employer has high integrity.
- 32) In general, I believe my employer's motives and intentions are good.
- 33) My employer is not always honest and truthful.
- 34) I don't think my employer treats me fairly.
- 35) I can expect my employer to treat me in a consistent and predictable fashion.

### Psychological Needs Satisfaction

For the following statements, please indicate your level of agreement on the scale provided. Please answer according to your work experiences over the last 2 months.

(1 = *Strongly disagree* to 7 = *Strongly agree*).

- 36) I don't really feel connected with other people at my job.
- 37) At work, I feel part of a group.
- 38) I don't really mix with other people at my job.
- 39) At work, I can talk with people about things that really matter to me.
- 40) I often feel alone when I am with my colleagues.
- 41) Some people I work with are close friends of mine.
- 42) I don't really feel competent in my job.
- 43) I really master my tasks at my job.
- 44) I feel competent at my job.
- 45) I doubt whether I am able to execute my job properly.
- 46) I am good at the things I do in my job.
- 47) I have the feeling that I can even accomplish the most difficult tasks at work.
- 48) I feel like I can be myself at my job.
- 49) At work, I often feel like I have to follow other people's commands.
- 50) If I could choose, I would do things at work differently.
- 51) The tasks I have to do at work are in line with what I really want to do.
- 52) I feel free to do my job the way I think it could best be done.
- 53) In my job, I feel forced to do things I do not want to do.

### **Work Control**

For the following questions, please indicate where you perceive yourself on the scale provided, considering your work experiences over the last 2 months.

(1 = *Never* to 7 = *Extremely often*).

- 54) To what extent do you have the freedom to decide how to organise your work?
- 55) To what extent do you have control over what happens on your job?
- 56) To what extent does your job allow you to make a lot of your own decisions?
- 57) To what extent are you assisted in making your own decisions?

### **Intentions to participate**

- 58) How likely are you to play The Wellbeing Game being offered to you?
  - a. Not at all likely.
  - b. Not very likely.
  - c. Neither likely nor unlikely.
  - d. Somewhat likely.
  - e. Very likely.