



Capturing the psychological well-being of Chinese factory workers

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Title: **Capturing the psychological well-being of Chinese factory workers**

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Abstract

Purpose

Businesses are under pressure to ensure social responsibility in their globalised supply chains. However, conventional factory audits are not providing adequate data about production workers' well-being. Industry attempts to measure working conditions have shown bias and inconsistency and there is no consensus on what to measure, or how. Well-being can be intangible and difficult to capture without appropriate theoretical and methodological frameworks. This paper investigates factors influencing the well-being of a Chinese factory's workers, tests an innovative research method, and proposes interventions to improve well-being in factories.

Design/methodology/approach

This is a longitudinal study using the diaries of production workers at a large assembly manufacturing site in China. Workers left daily digital voice diaries about their day, which were analysed to identify factors related to their well-being at work.

Findings

The picture is more complex than the concerned Western narrative suggests. Workers' personal and professional concerns extend beyond the criteria currently measured in audits, tending to be more relational, and less about their physical state.

Practical implications

The current approach of auditing management practices neglects workers' well-being. This study offers a more comprehensive view of well-being and tests a new method of investigation.

Originality/value

This is the first study to use diary methods in a Chinese factory. It addresses an issue supported by little empirical evidence. It is the first longitudinal study to hear from factory workers themselves about how they are and what impacts their well-being daily.

Keywords

Supply chain, risk management, social sustainability, diary research, psychological capital, CSR, CSR audit.

1. Introduction

Rapid growth and industrialisation in China are driving a debate about workers' well-being. Since 1990, it has become viable for emerging economies such as China's to integrate into global commodity chains and production networks by supplying multi-national and transnational corporations (Yang and He, 2016). China has become known as 'the world's factory' as it supplies much of the textile, electronics and consumer goods industries (Yang and He, 2016).

However, this has been accompanied by growing concerns about the welfare of workers. Companies are under pressure to demonstrate that they are behaving in a way that is socially responsible, since businesses suffer both financial and reputational penalties from CSR violations in their supply chains (Locke *et al.*, 2007; Andersen and Skjoett-Larsen, 2009; Cruz, 2013; Görg *et al.*, 2018).

However, there are problems of transparency in global supply chains. It is difficult for businesses to know what is happening in factories. The most common form of self-regulation among global businesses manufacturing in the developing world is social audits conducted by third parties, but these do not provide an understanding of the needs and dissatisfactions of the workers (O'Rourke, 2003; Anner, 2012; Freise and Seuring, 2015; Sanders *et al.*, 2018) as they tend to focus on the visible, physical aspects of a factory rather than taking a more holistic view of worker well-being. Although there is an extensive body of research on workplace well-being in the West (Fisher, 2014) its concepts have not been tested in Chinese factories. The authors therefore identified two research problems: first, identifying the issues that are most important to workers; and second, identifying possible ways to improve their well-being.

This study addresses these problems by applying a novel longitudinal approach to understanding employees' satisfaction with their working conditions. Using digital diaries, workers describe daily events in their lives, and their feelings about these, providing qualitative data to be used to identify the issues important to their well-being. This data is analysed using a grounded approach to provide insights not only into individual well-being, but into the way in which this is influenced by relationships with co-workers and factory management and by the broader HR and operational systems of the factory. This provides a more nuanced understanding of the well-being of Chinese factory workers than that available through conventional methods. For example, Western news often describes factory violations in terms which are unrealistic, such as "*nightmarish conditions*", or vague, such as "*mistreating workers*" (Taylor, 2018). These articles are frequently framed around CSR responses from major brands, as opposed to the experiences of workers.

An important contribution of the research is the finding that the actual picture is more complex than the concerned Western narrative suggests (Chan, 2001; Jacka, 2014). Despite the importance of the physical environment for workers' well-being (Lamb and Kwok, 2016), this study shows that workers' personal and professional concerns tend to be more aspirational and relational, and less about their physical state, and to extend beyond the criteria currently measured in audits. It corroborates suggestions that psychological factors are of critical importance to workers' well-being (Rivkin *et al.*, 2018). This article argues that companies will need to be more thoughtful and active about investing in worker engagement and understanding the true needs and intrinsic motivations of the

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3 people who work in their factories. Specifically, the paper sets out to identify the
4 factors workers themselves consider important to their well-being and, by doing
5 so, to develop a model of well-being for Chinese factory workers that
6 incorporates the elements of psychological capital (Luthans and Youssef-Morgan,
7 2017) that can potentially lead to improved productivity, reputation and staff
8 retention for businesses. The study also applies an innovative method for
9 collecting primary data from workers, which can be used not only to inform new
10 approaches to audit but also to identify interventions that can be implemented to
11 improve well-being.
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14 The article is organised as follows. The next section presents an overview of the
15 current situation for Chinese factory workers and discusses the conflicting
16 narratives undermining a full understanding of their welfare. This is followed by
17 a section presenting the core theoretical basis of well-being from which the
18 study draws. The methodological aspects of the research are then presented, and
19 an innovative method for collecting data about factory workers' experiences
20 described. The next section presents findings and analysis, revealing the main
21 drivers of factory workers' well-being and identifying possible interventions to
22 improve their welfare. The paper concludes by situating these findings in the
23 context of previous research, discussing theoretical and practical implications
24 and proposing directions for further research.
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28 **2. The situation for Chinese workers: two conflicting narratives**

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30 In the past decade, China has surpassed the United States in terms of purchasing
31 power. It has been the world's largest exporter since 2009. Factory work, seen as
32 part of China's movement toward globalised modernity, has created a new
33 Chinese urban working class of more than 200 million migrants (Pun and Lu,
34 2010; Grayson and Nelson, 2013). Many of these people migrated to improve
35 their situation, citing the potential to take classes and learn skills to increase
36 their employability as a motivation for working in factories (Jacka, 2014). Pun
37 quotes a *dagongmei* or female migrant worker saying: "*Young people nowadays*
38 *no longer like tilling the fields. I didn't either.*" (Pun, 2005). For many in China,
39 choosing to work in a factory can be seen as an act of agency, and workers
40 choose to leave unsatisfactory factories and workplaces to find employment
41 elsewhere (Ma and Jacobs, 2010). In addition to promotion opportunities and
42 upward mobility, workers seek opportunities for skills development (Ma and
43 Jacobs, 2010). As Chinese factory work and access to information through
44 technology evolves, workers become increasingly concerned with achieving an
45 urban lifestyle and pursuing opportunities such as securing urban education for
46 their children (Unger and Siu, 2019).
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50 While this sounds positive, there are real concerns about the conditions these
51 factory workers face. These can be social: divide-and-rule tactics by leaders,
52 including hidden bartering systems (Siu, 2017), may undermine the potential
53 social capital of a collectivistic workplace (Earley, 1994). A fierce struggle for
54 upward advancement, for example to be line leaders, results from management
55 practices promoting divisiveness and individualism rather than solidarity, even
56 within a primarily collectivistic culture (Earley, 1994; Jacka, 2014; Siu, 2017).
57 They can also be physical: a lack of regulations has in the past allowed for
58 workplace injuries, illness due to insufficient health care and factory-based
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3 tragedies such as fires (Pun, 2005). Stories about such incidents in the media
4 pose a reputational risk to brands sourcing from these factories (Glendon, 2013;
5 Rogers, 2016).
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7 Welfare concerns raised in the Chinese and Western media also appear in the
8 academic literature. Scholars have rightly been concerned about workers' safety,
9 labour rights and pay. Articles detailing long hours, low wages, management
10 abuses, inhumane conditions and workplace injuries (Chan, 2013) appeal to
11 urban liberals' concern for social justice, applying moral pressure to advance
12 workers' rights (Chan, 2013; Jacka, 2014). The victimisation of migrant workers,
13 a frequent theme in Chinese tabloids, has entered the Western narrative for
14 similar reasons. While this narrative has inspired research among Western
15 management theorists, it does not provide useful data to inform remote decision-
16 making. Portraying the migrant worker as a victim may also perpetuate
17 stereotypes stigmatising the rural population (Jacka, 2014).
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20 Thus, there are two apparently contradictory stereotypes of the Chinese migrant
21 worker: the new member of the rising middle class, and the victim of
22 exploitation. It is difficult to test these two stereotypes because migrant workers
23 have relatively little voice. Other research from developing markets suggests that
24 worker voice has a dual role: first, it allows formal structures for complaint
25 (Zajak, 2017); and second, it can play a role in workplace well-being by allowing
26 workers to exercise and express their agency (Gunawardana, 2014). Unger and
27 Siu (2019) observe that technology such as mobile phones and chat rooms has
28 enabled Chinese migrant workers to improve their ability to share information
29 with each other about working conditions. However, this knowledge is not
30 necessarily reaching brands. Migrant workers may see silence as essential to
31 their survival (An and Bramble, 2017) and the main means by which brands
32 would find out about problems in their supply chain – strike action – is used only
33 as a position of last resort (Chan, 2017; Franceschini, 2020).
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37 Major international brands face a dilemma. They are under pressure to act in a
38 way that is socially responsible, and so need to find ways to understand workers'
39 conditions in the face of the conflicting narratives. However, as supply chains
40 become more complex, it is harder to know what is actually happening across the
41 entire system. The conventional way for a company to address this need to
42 understand the workers in their supply chain is through auditing factory and
43 workplace health and safety. However, these audits have two significant
44 limitations. First, their focus is primarily on physical conditions, to the exclusion
45 of psychological aspects of workers' well-being. Second, audit methods supply
46 data based on observations at a single point in time, whereas well-being is an
47 ongoing state.
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50 One reason for these limitations is that there is no standardised view of what
51 constitutes well-being for a Chinese migrant factory worker. The literature on
52 sustainable supply chain management, particularly following disasters such as
53 Rana Plaza, focuses on labour standards and codes of conduct (Köksal *et al.*,
54 2017) and on the relationships and interactions between buying organisations
55 and the stakeholders who take measures to hold them accountable for
56 sustainable production and development (Köksal *et al.*, 2017). These
57 frameworks do not incorporate theories from the existing bodies of literature
58 about workers' well-being.
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3. Theories of well-being

Despite the importance of well-being for mental and physical health (Diener, 2000), there is little agreement about how it should be defined and measured (Fisher, 2014). At the most fundamental level, the models draw from three distinct views of the drivers of well-being: the *hedonic* view, which focuses on pleasant experiences in life; the *eudaimonic* view, which focuses on inner growth and development; and the social view, which focuses on the relational aspects of well-being (Fisher, 2014). These three categories are related, and include a range of indicators that are not necessarily independent and can act in combination (Gallagher *et al.*, 2009). Thus, a variety of constructs are used in different combinations, in different contexts, by different scholars.

These views of well-being have been used in different ways to describe and measure aspects of life at work for nearly a century (Fisher, 2014). Much of the previous work in the area focuses on *hedonic* aspects of work life – for example, job satisfaction or positive affect at work. Indeed, job satisfaction is the most commonly researched phenomenon in organisational behaviour (Weiss and Brief, 2001; Wright and Nishii, 2006). However, there is an increasing body of literature examining *eudaimonic* aspects of work. This examines sources of well-being such as meaning at work (Pratt and Ashforth, 2003) and has its roots in work on positive psychology. Some *eudaimonic* phenomena, such as flow (Csikszentmihalyi, 1990) are also *hedonically* pleasurable, and so concern two different aspects of workplace well-being. In the last two decades there has also been a growth in studies of the social aspects of well-being at work, such as relationships with peers and leaders, and good quality relationships (Dutton, 2003). Figure 1 shows examples of different types of well-being that have been studied in life and in the workplace.

Figure 1: The drivers of well-being as seen in life and work

[Insert Figure 1 here]

These descriptions of well-being have led to two distinct paths of research: first, exploring the relationship between well-being and performance; and second, seeking to understand how well-being can be improved.

There is an established body of literature making a connection between workers' psychological well-being and their performance (Luthans *et al.*, 2005; Sein *et al.*, 2010; Newman *et al.*, 2014; Capasso *et al.*, 2018). This evidence suggests that improving some forms of well-being has benefits for the business as well as for the individual worker. Birdi and other scholars saw improved communication between workers and managers leading to autonomy and empowerment, motivating employees to work harder and more flexibly (Hackman and Oldham, 1976; Birdi *et al.*, 2008), encouraging "*thinking big*" and more "*initiative*" (Frese *et al.*, 1996; Birdi *et al.*, 2008; Frese, 2008) and practical, hands-on engagement, reducing supervision costs (Frese *et al.*, 1996; Parker *et al.*, 2001; Birdi *et al.*, 2008). Cottini found involving workers in setting work practices led to less attrition, avoiding rehiring costs while allowing workers to gain experience (Cottini *et al.*, 2011).

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3 Recent studies building on the literature on positive organisational behaviour
4 offer a framework to suggest the individual capabilities needed for psychological
5 well-being. Luthans' (2002) model of psychological capital (PsyCap) identifies
6 four elements – hope, self-efficacy, resilience and optimism – which improve a
7 range of outcomes, including problem-solving (Hsu and Chen, 2015),
8 organisational citizenship behaviour (Qadeer and Jaffery, 2014; Pouramini and
9 Fayyazi, 2015; Nolzen, 2018), and a “*mastery-oriented mindset toward training*”
10 (Luthans *et al.*, 2011). Even in challenging workplaces, PsyCap and well-being
11 can allow workers to feel less stressed and more resourceful and engaged,
12 enhancing productivity (Siu *et al.*, 2014; Mazzetti *et al.*, 2016; Joo and Lee, 2017).
13 Nel and Kotze (2017) found positive psychological capital, along with
14 psychological tools like mindfulness and meditation, able to alleviate extreme job
15 stresses, reducing levels of burnout.

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18 Unlike many of the concepts and models in the field of workplace well-being, the
19 PsyCap model has been tested in China. Luthans' studies in three Chinese
20 factories are the only examples to date applying the model in manufacturing in
21 the developing world. Two papers, published in 2005 and 2008, use PsyCap in
22 Chinese factories to investigate their workers' well-being, with a specific focus
23 on the relationship between an individual's psychological capital and their work
24 performance. Among workers at three factories, Luthans *et al.* (2005) found that
25 stimulating positive psychological states significantly boosted performance.
26 However, there are some methodological limitations to this work. To measure
27 PsyCap's correlation with performance, Luthans used surveys completed by
28 supervisors evaluating the workers. Management surveys are particularly fragile
29 to bias and can be manipulated. This is a particular risk in this research setting
30 where poor employee performance may reflect badly on the management.

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33 There is, however, a clear disconnect between these views of well-being and the
34 information available through factory audits. Audits only assess a few aspects of
35 physical, *hedonic* well-being, such as workstation comfort. This focus on physical
36 well-being is understandable, given that there have been cases where the basic
37 physical conditions of worker safety have not been achieved. However, it is clear
38 that well-being, which has material benefits for both the individual and the
39 employer, is much more complex and multi-dimensional. There is not, as yet, an
40 agreed, standardised model of employee well-being to form a baseline for more
41 comprehensive observations, audits or surveys (Locke, 2013; Vogel, 2010;
42 O'Rourke, 2003). Much of the research to date has been developed and tested in
43 the West, and so may miss important cultural aspects of well-being.

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46 Furthermore, most research has been conducted in contexts where there is a
47 clear delineation between workplace well-being and well-being in life. Chinese
48 migrant workers, by contrast, live alongside their colleagues in factory
49 accommodation, and so this distinction may be less sharply defined for them.

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51
52 One reason research on well-being to date has neglected Chinese factory
53 workers is that the research setting itself presents particular problems.
54 Factories are noisy and often overcrowded; they do not always allow for
55 transparent or accessible data capture. To truly understand workers' well-being
56 would involve enquiring about personal matters – such as feelings of safety –
57 which are difficult to observe or rank, and about which it may be difficult for
58 workers to be honest, given the imbalance of power between observer and
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3 observed (Chan, 2013; Anner, 2012; Egels-Zandén, 2014). Alternatives like
4 ethnography or covert observation may uncover this information but are difficult
5 and time-consuming. Survey and observation methods also tend to take their
6 measurements at a single point in time, whereas well-being is an ongoing
7 process. Longitudinal data would provide a better understanding of factory
8 conditions (Peterson *et al.*, 2011).
9

10 This study set out to identify the factors workers themselves consider important
11 to their well-being by listening to their daily reflections on what makes a good
12 day at work. By doing this, the researchers aimed to develop a model of well-
13 being for Chinese migrant factory workers and a method for collecting this data
14 that could be used, first to inform new approaches to audit, and second to
15 identify areas for intervention to improve well-being.
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19 **4. Method**

20 *4.1 The research context*

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22 Researching employee well-being in a Chinese factory presents very specific
23 methodological problems. This study required qualitative longitudinal data
24 reflecting the factors most important to workers. Factories are challenging
25 environments for worker interviews or observation due to noise, overcrowding
26 and a fear of repercussions if workers are seen talking to researchers about the
27 factory. Many conventional approaches to collecting qualitative data, such as
28 interviews, were judged unsuitable, as an earlier study by the first author had
29 found factory workers reluctant to talk to researchers. In some instances they
30 had been coached on suitable responses by their managers (Egels-Zandén, 2014;
31 Niforou, 2015).
32
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34 Diary research was selected for this study because longitudinal data, captured
35 close to real time using flexible and accessible methods, was a very good fit with
36 the conditions in factories. Since diary research has not been used before with
37 factory workers in China, a series of deliberate design decisions was required
38 (Snowden, 2015). Our aim was to replicate real diaries, like those documenting
39 the medical histories of patients, "*private worlds of politicians and the fictional*
40 *lives of characters like Adrian Mole and Bridget Jones*" (Taylor and Taylor, 2003;
41 Patterson, 2005) to gain a deep understanding of what working in a factory is
42 really like.
43
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45 The study comprised a 20-day pilot followed by the 100-day study, with monthly
46 meetings with participants to maintain momentum. The 100-day period was
47 chosen so that the study had ended by 30 days before Chinese New Year. In these
48 30 days factories are typically so busy that the workers would not have had time
49 to participate in the research, and the majority of workers start to leave before
50 the holiday for their hometowns.
51

52 *4.2 Data collection*

53 The data was all collected from workers in a single factory in Guangdong
54 province which makes bags for Western brands. This work is generally safe and
55 does not involve working with toxic materials. The factory is audited regularly
56 and is considered a safe working environment. The programme was advertised
57 in the factory, inviting all workers to volunteer, providing a self-selecting sample
58 of the factory's total worker population. 100 participants signed up on the day
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3 the research was opened, more than anticipated. Data from past survey research
4 in factories had included responses from 'fake workers' and management, or
5 multiple responses from single workers. Each volunteer was therefore
6 interviewed face-to-face at the factory to validate the sample, ensuring it actually
7 represented the factory's worker population and that participants gave informed
8 consent. The diarists are all migrants. 91% were working outside their province
9 of origin at the start of the study, with the remaining 9% from elsewhere in
10 Guangdong. 68% of the diarists have children (typically living with family
11 members in their place of origin), and 66% were under the age of 30.

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14 Phones in China are now ubiquitous, especially among migrant workers in South
15 China factories (Ngan and Ma, 2012; Peng and Choi, 2013). As well as
16 maintaining contact with families left behind in hometowns, they may be used as
17 a diary, for collecting contacts, conversations and lifestyle and entertainment
18 information. Since the majority of the factory workers did have mobile phones,
19 an innovative voice-diary method allowing for daily data collection was selected.

20
21 Diary methods relying on reading and writing had been judged potentially
22 problematic as some workers are not fully literate and most would be too tired
23 at the end of the working day to write a diary. Participants were therefore
24 invited to leave a daily voice message sharing 'what made them happy today' and
25 'what made them unhappy today' or anything they wanted to share about their
26 well-being or day. Using voice messages allowed all workers to participate,
27 regardless of their reading and writing ability, and reduced the time spent by the
28 workers on the diaries – leaving a daily voice message takes only seconds. By
29 enabling workers to make entries at any point in their day it also reduced recall
30 bias (Alaszewski, 2006). Workers were asked to keep their diaries even during
31 holidays and days off, both for continuity and in the hope it would become a
32 normal daily ritual, leading to more insightful, open and useful content.

33
34 For this diary research, the social-media platform WeChat was used. WeChat
35 (Chinese: 微信, literally, 'micro-message') is a Chinese multi-purpose social
36 media mobile application developed by Tencent. Released in 2011, by 2018 it
37 was reported in international media to be one of the largest stand-alone mobile
38 apps by monthly active users, with a billion users (83% of smartphone users) in
39 China, and a further 100 million internationally. It has been called China's 'app
40 for everything' because of its wide range of functions. It is censored and
41 monitored in China. WeChat has several features that made it suitable for this
42 research. It allows communities to be created, information to be posted and
43 voice messages to be left, and has a built-in instant translation tool, so that an
44 English-speaker can chat to someone in Chinese and vice versa. It supports
45 various instant messaging methods, including text and voice messages, walkie-
46 talkie and stickers.

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51 Diary entries were downloaded from WeChat daily and saved to Excel.
52 Translation software was used as part of a three-step daily process to convert
53 them into English: using the WeChat translator to produce an initial text, to be
54 checked using Google Translate, then audited by a native speaker. To preserve
55 anonymity, each worker was given a number and an animal name. This way they
56 could chat on the forum and leave their diaries without feeling concerned about
57 confidentiality. Only the first author has the list of names and aliases.
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3 Of the 100 volunteers, 33 actively left diaries throughout the research period. 67
4 participants dropped out within the first 30 days. Post-dropout interviews and
5 Human Resources data showed this to have been primarily due to a national
6 holiday in China. Mid-Autumn Festival is a week when some workers will go to
7 their hometowns. Of the 67 who dropped out, 58 did not return to that factory
8 after the break, either changing jobs or not returning to its location. The nine
9 other people who left the study said they were not finding the diary experience
10 rewarding, a few saying they felt uncomfortable talking about their feelings daily.
11 This suggests that the barriers to diary research in the factory were more
12 logistical than cultural. The 33 active diarists continued to report to their diaries
13 throughout the holiday period for the sake of consistency. Despite a higher-than-
14 expected dropout rate, the large volume of initial interest meant the information
15 collected was still considerable: the research participants left a total of 1,499
16 diary entries during the period of study.
17
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20 4.3 Data Analysis

21 The data was analysed using a grounded approach (Glaser and Strauss, 1967).
22 First, the entries were coded using open coding (Strauss and Corbin, 2008). The
23 codes were then grouped to form a data structure comprising first-order
24 concepts, second-order themes and a third level of aggregate dimensions (Gioia
25 *et al.*, 2013). There was a relatively large number of first-order concepts,
26 reflecting the diverse range of topics and emotions discussed in the diaries. 40%
27 of the first-order concepts related to day-to-day experiences for the diarists, such
28 as what the workers ate for lunch or the weather. While this allows for a
29 fascinating insight into daily life for a Chinese migrant factory worker, the focus
30 of this article is the 60% of concepts related to the workplace. This is not because
31 the other subject categories are unimportant; rather, it is because supervisors
32 can do very little to influence workers' personal lives, while there may be
33 concrete steps they could take within the workplace to improve well-being. The
34 findings related to work are therefore explored below.
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39 5. Findings

40 The data produced several new findings, presented below as follows. First is an
41 overview of the different types of well-being reported by the workers in their
42 work and their lives. Second, the article analyses the factors relating to
43 workplace well-being from three points of view: the workers' aspirations and
44 *eudaimonic* well-being in the long and short terms; their experiences of factory
45 operational problems impacting their well-being; and relationships in the factory
46 with implications for their social well-being. The section concludes with a
47 summary of the findings.
48
49

50 5.1 Hedonic, eudaimonic and social well-being in the factory

51 The diaries provide a broad picture of the factors involved in well-being,
52 including *hedonic*, *eudaimonic* and social aspects of both life and work.
53 Examples of the subjects diarists speak about in each of these categories are
54 shown in Figure 2.
55
56

57 *Figure 2: Types of well-being described in the diaries*

58 [Insert Figure 2 here]
59
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3 It is clear that many of the subjects that influence workers' well-being are
4 unrelated to work. Relationships with family and friends and overall health play
5 important roles in how workers feel. There are positive and negative sentiments
6 in each of the subject categories: feelings about the different subjects are not
7 uniformly positive or negative.
8

9 Despite the breadth of content of the diary entries, 60% of the first-order
10 concepts are directly related to the workplace. The full data structure for the
11 analysis of diary entries about the workplace is shown in Figure 3.
12

13 *Figure 3: Data structure*

14 [Insert Figure 3 here]
15
16

17 5.2 Sources of motivation for workers

18 Many of the diaries include comments about the worker's motivation to have a
19 better life. Workers are focused on the ways in which their long-term aspirations
20 can improve their own well-being and that of those around them – particularly
21 family members. These often long-term goals shape the way in which the diarists
22 think about their work. For example:
23
24

25 *"I want to open a small restaurant selling Sichuan-style hot and sour noodles.*
26 *I am inspired to work hard by this goal."*

27 Diarists also connect these long-term goals to the short-term conditions they face
28 in the factory:
29

30 *"I want to save money for a car and driving license, so that I can live and*
31 *work near my children and parents as a taxi-driver. I never meet my daily*
32 *targets in the factory though! I will never achieve my life's dream (sad*
33 *emoji)."*
34

35 This suggests that *eudaimonic* well-being is important to the diarists, and that
36 they take an instrumental view of their work at the factory as a means to
37 achieving their goals. The goals mentioned include: building a house for their
38 family; putting children through school; continuing their own education; and
39 setting up their own business. Some diarists also describe shorter-term
40 *eudaimonic* well-being arising from training or development in the factory.
41

42 *"For me, today, I've come into a new field and been asked to learn some new*
43 *things. So I'm a little nervous, afraid of making mistakes, but the prospect of*
44 *learning new things also gives me energy."*
45

46 In the short term, the diarists are focused on two different types of well-being:
47 *hedonic* well-being, which they associate with compensation; and social well-
48 being, associated with their relationships with colleagues and managers in the
49 factory.
50

51 These social relationships can be positive or negative. Figure 3, above, shows
52 that feeling appreciated by others can contribute to well-being. One diarist
53 comments:
54

55 *"Praised by the boss! I now wish to do even better, and will strive to rise to the*
56 *position of director."*
57

58 Positive team relationships are also motivating. At the end of a good day, one
59 diarists says:
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3 *"The employees are like a family. We all look out for each other. We set out to*
4 *work in a good mood every day."*
5

6 Other diaries suggest that workers do not start every day in a good mood, and
7 there are several descriptions of unsatisfactory interactions with co-workers.
8 One unexpected effect of this research method is that the workers started to see
9 their diaries as a type of relationship, and benefitted from the opportunity to talk
10 about their experiences knowing that someone would listen. This suggests that
11 social contact is a particularly important facet of well-being, particularly for
12 migrant workers who are separated from their families.
13

14 Workers are not only motivated by the camaraderie of team-work. They are very
15 focused on compensation as an enabler of their longer-term goals. The factory
16 where this research was conducted does pay its workers promptly, and they
17 appreciate this. However, pay is calculated based on production targets, and
18 there were many diary entries about operational problems leading to missed
19 targets. These fell broadly into two groups: issues about the production system
20 and problems leading to re-work.
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23 *5.3 Operational problems in the factory*

24 The diarists report a range of operational problems including: machine
25 breakdowns; engineers not coming to fix machines; raw materials arriving late
26 or with defects; and process bottlenecks leaving workers standing idle. These
27 can all be attributed to poor factory management. The workers show an
28 understanding of the systemic impacts of these problems:
29

30 *"Today, in the last hour of the evening overtime shift, the machine suddenly*
31 *broke down and it couldn't be repaired properly. It was still not working when*
32 *we finished, and a lot of goods have piled up. I hope he can repair it soon. I don't*
33 *know whether it will be repaired tomorrow morning or not. If not, it will be a*
34 *miserable day. This may impact other workers on the same line ... This makes*
35 *me feel dispirited."*
36
37

38 These problems also lead to some levels of overtime, a phenomenon that has
39 prompted concern in the press in recent years. While overtime is paid, and
40 therefore sometimes welcome, some diarists also report high levels of fatigue:
41

42 *"We are very busy every day. I really want to get off work very much. I'm so*
43 *tired."*
44

45 This is obviously a barrier to their physical, *hedonic* well-being.

46 Frequent re-working of products is another source of frustration reported in the
47 diaries.

48 *"Today at work the supervisor held a meeting to tell us that the handbags we*
49 *are making need more reworking. Most of the flaws are minor. Is it that people*
50 *are making mistakes because the shifts are so long? Many workers think they*
51 *are familiar with the bags, so they work ruthlessly and never think there will be*
52 *defects that need rework."*
53

54 The rework is caused by the lack of any pre-emptive quality management
55 process in the factory. Training is inconsistent or absent, so workers do not
56 always know how to make the products, or have not had time to practice
57 sufficiently. As one diarist says:
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3 *“My manager doesn’t tell us what we need to do properly. When we do the work*
4 *wrong, he is upset. I sometimes wonder if he understands himself what we*
5 *should be doing.”*
6

7 This leads to errors, which are compounded by time pressure or other sources of
8 stress such as operational problems. Rework and operational problems are both
9 resulting in workers having to work harder to meet their targets, which they find
10 demotivating.
11

12 *5.4 Working relationships*

13 While operational problems and reworking can both be attributed to poor
14 operational factory management, the diaries also reveal poor working
15 relationships with managers. In particular, diarists complain about being
16 ‘scolded’ or shouted at. Some also report unfair treatment, such as favouritism by
17 managers.
18

19 *“This morning I was scolded by my line leader. He treats us all very differently.*
20 *He’s nice to the workers he knows well and very impatient with everyone else.”*
21

22 In a context where it is clear that relationships and social contact matter to well-
23 being, this type of behaviour can be very detrimental. It not only leads to a loss of
24 a worker’s own self-worth, but can also lead them to resent and devalue
25 colleagues.
26

27 Diarists air several complaints about co-workers, which broadly fall into three
28 categories. In several diary entries, people blame others – or express worries
29 about being blamed – for production-line delays. Delays are felt keenly as they
30 impact compensation. There is also some resentment arising from the
31 preferential treatment they see some managers show to specific individuals,
32 particularly when this limits opportunities for others:
33

34 *“I was told that I could learn stitching, but the factory didn’t fulfill this*
35 *promise so I’m still only allowed to do odd, random tasks. I also get yelled at*
36 *from time to time.”*
37

38 Finally, an undercurrent of the social problems that tend to arise when people
39 live and work in close proximity is manifest in some diaries as complaints about
40 gossip, dormitory noise or interactions such as borrowing money.
41

42 *5.5 Summary of findings*

43 Analysis of the diaries shows that a complex web of factors – *hedonic, eudaimonic*
44 *and social* – influence the well-being of Chinese migrant factory workers. These
45 are not independent: operational factors influence productivity (and therefore
46 compensation) which can also impact relationships with colleagues and
47 supervisors. There are positive aspects to life in the factory: compensation, the
48 opportunity to develop and learn, and feeling appreciated through recognition
49 by supervisors and colleagues. It is clear that the matters important to factory
50 workers – the ability to progress toward their long-term vision for the future
51 through compensation and learning, and the quality of their relationships with
52 co-workers and supervisors – are not the factors made visible to brands by
53 factory audits.
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58 **6. Discussion**

59 *6.1. Theoretical implications*

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3 This complex picture suggests that both narratives about the Chinese migrant
4 factory-worker, as either someone acting with agency or a victim of exploitation,
5 are over-simplified. The workers in this study are very motivated by the
6 prospect of improving conditions for themselves and their families, but
7 frustrated in this ambition not by the physical conditions in the factory – which
8 are barely mentioned in the diaries – but by social and operational issues. To
9 some extent this is because the factory environment for the research setting was
10 acceptably safe. However, it also suggests that conventional methods for
11 assessing workplace well-being, such as surveys focused primarily on *hedonic*
12 factors or on job satisfaction, have both methodological and theoretical
13 limitations in this setting. Assessments of ‘job satisfaction’ typically exclude
14 frustration, which has only recently been identified as distinct from low
15 satisfaction (Longo *et al.*, 2016), yet feelings of frustration appear regularly in
16 these diaries.
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20 By contrast with conventional models of job satisfaction, the PsyCap model does
21 address some of the aspects of well-being discussed in the diaries. While all
22 components of the PsyCap model – hope, optimism, self-efficacy and resilience –
23 matter, two elements appear most important to our diarists. First, they speak
24 often about their hopes for the future, which are clearly motivational for them.
25 Second, their feelings of self-efficacy were noticeably impacted by the social and
26 operational conditions in the factory. Self-efficacy is defined as “*how well one can*
27 *execute courses of action required to deal with prospective situations*” (Bandura,
28 2012; Stajkovic and Luthans, 1998). The diaries suggest that workers’ feelings of
29 self-efficacy are undermined, first by their inability to address the operational
30 difficulties in the factory that in turn drive rework and inefficiencies, and second
31 by their treatment, and particularly scolding, by line supervisors and managers.
32
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34 This confirms the observation that worker well-being has an important
35 relational component, and that workplace practices can be influential in
36 improving worker affect. Chinese society has historically emphasised social
37 interests, collective action and shared responsibility (Chen *et al.*, 2015). Pun
38 (2005) quotes a worker saying about her experience of factory work: “*Every day*
39 *I would be worn out, all my energy gone. But I felt satisfied there. I had dozens of*
40 *relatives and friends, we chatted a lot and helped each other.*” The current study
41 reinforces this focus among factory workers on their need for positive
42 relationships in the workplace as well as with family and friends.
43
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45 These needs, for self-efficacy and for relatedness, have deep psychological roots.
46 Deci and Ryan (2000) identify autonomy (the ability to act voluntarily and to
47 have control over a situation), relatedness (ability to form human connections)
48 and competence (ability to feel effective in achieving a goal) as basic
49 psychological needs, fundamental to human thriving. It appears that their
50 framework is not culturally-specific, and it has been successfully tested in China
51 (Chen *et al.*, 2014). Evidence from the diaries suggests that these basic
52 psychological needs underpin the hope and efficacy elements of the PsyCap
53 framework, and that the frustration of these needs leads to a loss of well-being.
54
55

56 Thus, two elements of PsyCap, hope and self-efficacy, as underpinned in basic
57 psychological need theory by autonomy, relatedness and competence, are here
58 identified as important to the well-being of migrant factory-workers in China.
59 However, the problem that motivated this paper remains: how can brands
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3 ensure the well-being of the factory-workers in their supply chains?
4 Psychological states are, by their nature, not visible, yet the main method for
5 assessing factory conditions – audit – focuses entirely on aspects that can be
6 seen. To resolve this problem, research needs to identify the visible practices
7 that can create an environment that allows PsyCap to flourish.
8

9 6.2 Practical implications

10 While previous studies using PsyCap have suggested that self-efficacy can be
11 improved by training, relationships or encouragement and support from
12 managers (Du *et al.*, 2015; Rego *et al.*, 2019) this study suggests that it can also
13 be improved by creating a more efficient operating environment, in which
14 workers are not frustrated in their goals by systemic failures. It can therefore be
15 addressed by working to resolve the operational problems in factories and to
16 improve HR systems to support, for example, supervisor behaviour and learning
17 opportunities. These interventions have three potential benefits: first, they
18 address the underlying barriers to well-being by reducing frustration; second,
19 they have the potential to improve overall factory performance; and third, they
20 may be visible to auditors.
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24 Figure 4, below, shows how interventions at the factory line level (for example,
25 providing training for supervisors and workers) can lead to fewer of the
26 incidents associated with workers' dissatisfaction, and stronger feelings of
27 personal development. This, in turn, creates stronger self-efficacy, which
28 improves psychological capital. This is, of course, beneficial for moral reasons,
29 but previous studies have also suggested tangible business benefits from these
30 interventions, including reduced turnover rates and increased productivity
31 (Luthans *et al.*, 2008; Karatepe and Karadas, 2014; Park *et al.*, 2016; Adler *et al.*,
32 2017).
33

34
35 *Figure 4. Potential impact, via PsyCap, of interventions on worker well-being*

36 [Insert Figure 4 here]
37
38

39 The proposed interventions are, at this stage, untested, while the proposal is
40 predicated on previous studies conducted in different contexts. However, adding
41 questions to audits to focus attention on the provision of training and on
42 operational efficiency might improve factory performance, and so reduce the
43 frustration experienced by workers.
44

45 7. Conclusion

46 This is the first study to use longitudinal digital diary methods in a factory
47 setting. It highlights a gap in the way in which worker well-being is audited by
48 Western brands sourcing goods from China. It makes three main contributions to
49 the literature on psychological capital as a source of well-being. First, it
50 demonstrates that two elements of the PsyCap model – self-efficacy and hope –
51 play an important role in *eudaimonic* well-being for Chinese factory workers.
52 Second, while previous studies have suggested that self-efficacy can be improved
53 by interpersonal interventions such as training or encouragement and support
54 from managers, this study suggests that it can also be improved by reducing the
55 frustration arising from frequent practical problems in the factories. Third, it
56 proposes a theoretical model illustrating how selected interventions can
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3 improve well-being, and potentially performance, through improving self-
4 efficacy. The study is not without limitations. It is on a relatively small scale, and
5 was undertaken to identify the factors that Chinese factory workers in particular
6 find important to their well-being.
7

8 One of the main findings – that workers value personal development, and are
9 frustrated by inefficient factory operations – can be further developed in two
10 ways. First, there are opportunities to develop more robust methods for using
11 self-efficacy as a measure of well-being in factories. Second, this article proposes
12 testing action-learning programmes in factories to see which interventions can
13 most effectively improve well-being and productivity. Furthermore, the method
14 used in this study may also be applicable in other settings involving people who
15 are otherwise difficult to reach, are under-represented in research or have
16 limited voice.
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19 As well as these implications for further research, the study has implications for
20 practice. It is becoming increasingly important for Chinese businesses to refocus
21 from technological development and financial capital onto human resources
22 (Luthans *et al.*, 2008). The mobility of the contemporary Chinese worker,
23 coupled with a willingness demonstrated by the latest generations to repeatedly
24 switch jobs (Pun and Lu, 2010), poses challenges for the employer/employee
25 contract and requires businesses to invest in workers to retain them: “*Simply*
26 *competing on the basis of low-cost labour is no longer sufficient in a China that is*
27 *now in the mainstream of the global economy with increasing wages and*
28 *competition for talent”* (Luthans *et al.*, 2008; Warner, 2013). China's continued
29 growth and competitive advantage hinges on worker training and an updated
30 understanding of human resources management (Luthans *et al.*, 2008). This,
31 coupled with increasing demands from Western customers that companies pay
32 attention to employee welfare, suggests that there is a real need for a better way
33 to audit factories which can direct attention to the factors that matter for
34 workers.
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IJOPM Cover Letter

Dear Professor Blome

Ref: IJOPM-06-2019-0492

Thank you for allowing us the opportunity to revise our article 'Capturing the psychological well-being of Chinese factory workers'. We found the feedback from the reviewers extremely constructive, and believe this process has considerably improved the work. This letter outlines the revisions we have made in response to that feedback. In it, we address four main topics: the theoretical framing; data analysis; discussion; and some broader editorial corrections.

Your first recommendation was to broaden our literature review beyond the supply chain management / operations management literature in order to more clearly frame our contribution to the study of well-being. In response, we have revised the theoretical sections extensively to include a review of theories of well-being and to clarify the relationship of this literature to Psychological Capital theory. This enabled us to clarify the need for the research, improve the logical flow of the argument, and narrow and focus the contribution of this paper.

Second, the second reviewer strongly encouraged us to revise our analytical approach and to review the data as qualitative rather than quantitative. We have therefore extensively revised the analysis and findings sections and used the Gioia method to structure the data. As suggested, we have introduced sub-headings to clarify the structure of this section. While this involved extensive re-writing, we believe it makes the link between the literature, the data and the contribution much clearer and so strengthens the argument of the paper.

As a result of this reframing, we have also re-written the discussion section. One of your recommendations was to strengthen the theoretical discussion, to make the paper less 'pracademic'. Situating our findings in the context of the well-being literature has enabled us to develop the theoretical discussion more fully. We have also restructured this section and included sub-headings to distinguish the research implications from the practical implications of the work.

It is our view that these three major changes have significantly improved the overall flow and clarity of the paper while maintaining its distinctiveness and its fit with the aims and style of the IJOPM. We have also addressed a series of smaller but also important points raised by the reviewers. In particular we have: removed the original Figure 1 and some related comments on the supply chain literature; included more commentary on physical well-being, and in particular safety (the focus of previous work on factory workers' well-being); and made some revisions to the style of the paper to make it more congruent with that of the IJOPM.

We believe the suggested changes have significantly improved the quality of the manuscript and that it will be judged suitable for inclusion in your Special

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3 Edition. We very much appreciate the constructive feedback from you and the
4 reviewers, and look forward to hearing your views on this latest version.
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7 Best wishes.
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	Hedonic well-being	Eudaimonic well-being	Social well-being
Life well-being	Positive affect Negative affect Life satisfaction	Autonomy Personal growth Purpose in life Self-acceptance	Social acceptance Social integration Positive relations with others
Well-being at work	Job satisfaction Positive/negative affect Organisational commitment	Job involvement Work engagement Meaning at work Calling at work	Relationships with peers and leaders Social support Group cohesion
Flow Intrinsic motivational states			

Figure 1: The drivers of well-being as seen in life and work

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	Hedonic well-being	Eudaimonic well-being	Social well-being
Life well-being	Improved financial situation (pay debts, buy house) Health Food (local food and healthy food) Live in hometown	Personal ambitions and aspirations - acquire life skills, marriage, children, care for parents Experiences - travel, food Learning - go back to school	Community in hometown Family relationships Romantic relationships Friendship
Well-being at work	Reworking constantly - tasks too complex, bad quality raw materials Delays - machine breakdowns, slow colleagues, raw materials late Work environment stressful - shouting, fighting	Hard work and efforts at work are fruitless - targets not met Reduced sense of self-worth - development opportunities (negative) Short- and long-term aspirations not achieved - no promotion or learning	Relationships with co-workers (negative) Relationships with leaders (negative) No team spirit or camaraderie in factory

Figure 2: Types of well-being described in the diaries

1st Order Concepts

2nd Order Themes

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- Professional goals (eg. set up business)
- Personal goals (eg. new experiences)
- Family goals (eg. reunite, or pay for family needs)



Goals beyond the factory

- Recognition by peers or supervisors
- Learning / development opportunities
- Participation in the diary programme
- Compensation is paid on time



Workers feel appreciated

- Not enough machines, machines breaking down
- Not enough raw materials, raw materials arrive late or are defective
- Co-workers cause delay in the process



Production delays

- Inadequate instructions to complete task
- Inadequate time to practice task
- Stress and pressure to work fast on complex tasks



Re-work

- Disrespectful manner eg. scolding, yelling
- Favouritism
- Lack of opportunities to learn



Workers feel devalued by supervisors / managers

- Blame for delays in factory
- Resentment based on favouritism
- Annoying behaviour (eg. noise, gossip)



Workers feel devalued by colleagues

Long- and short-term motivations

Hard work without meeting targets is demotivating

Reduced sense of self-worth

Figure 3: Data structure

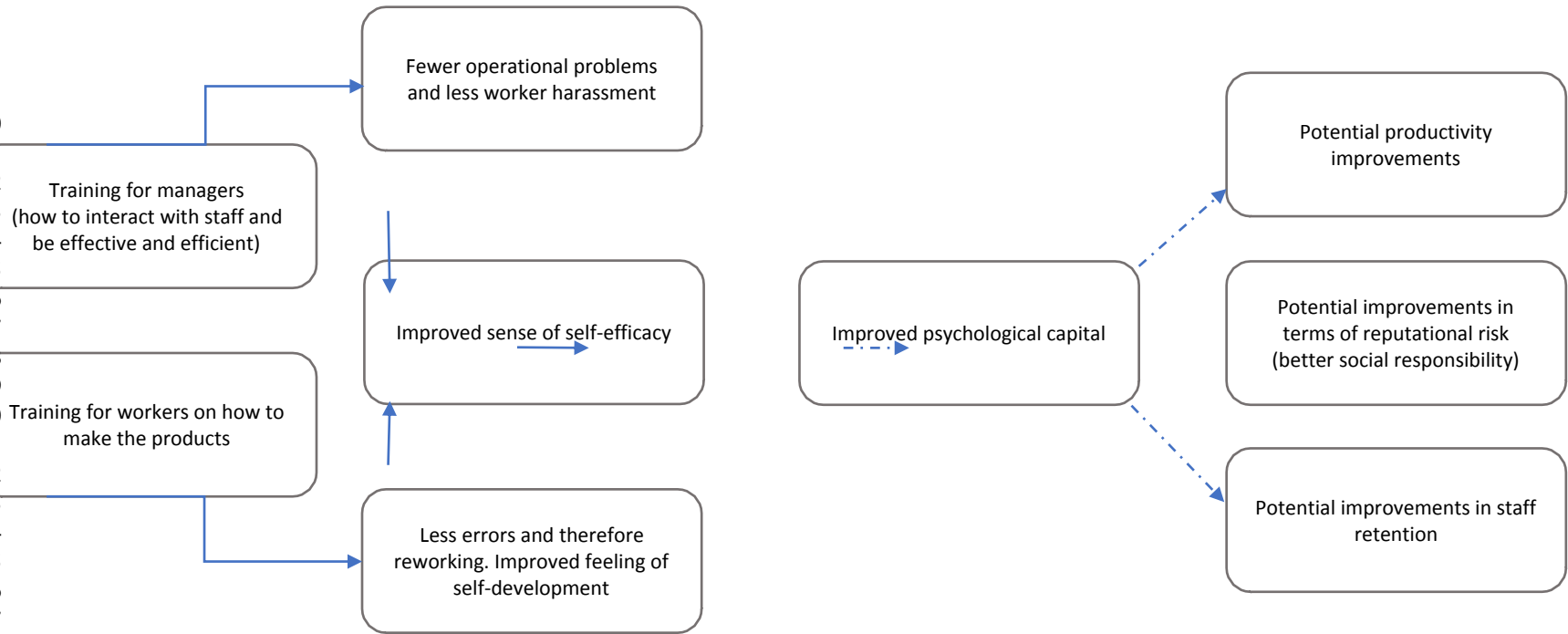
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Figure 4. Potential impact, via PsyCap, of interventions on worker well-being

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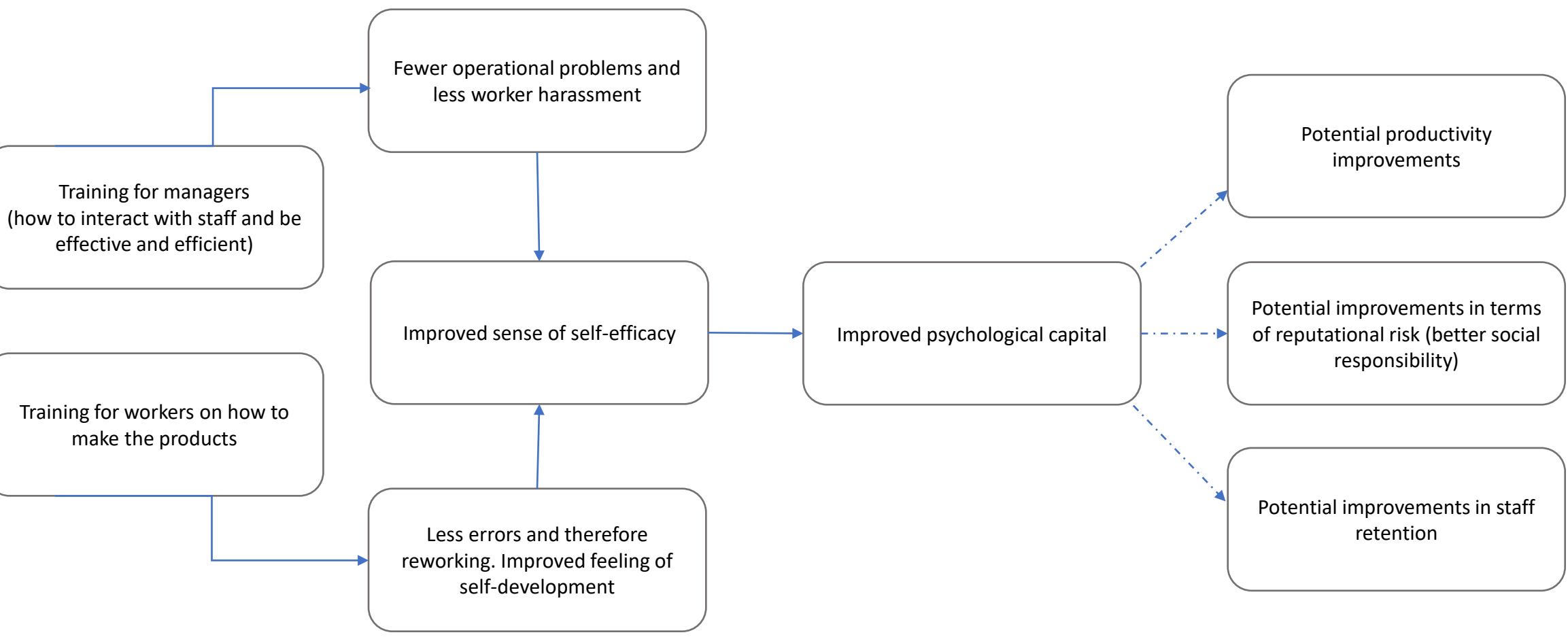


Figure 4. Potential impact, via PsyCap, of interventions on worker well-being