

Environmental sustainability and the happy-productive worker: examining the impact on employee well-being and work performance in educational institutions

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Abstract

Purpose – The happy-productive worker hypothesis posits that employee well-being is an important factor in work performance. Educational institutions around the world are facing both internal and external pressures to integrate sustainability into their practices, with the goal of protecting the planet and ultimately boosting profits. This paper explores the potential wider benefits of sustainability, including its relationship with employee well-being and performance, by investigating the influence of organisational sustainability on the happy-productive worker hypothesis.

Design/methodology/approach – Educational institution employees from the UAE and USA (n = 199; 66.3% teachers) completed an online questionnaire measuring their well-being, perceptions of their organisations' environmental sustainability and three self-reported job performance measures (task performance, contextual performance and counter-productive workplace behaviours). Regression and mediation analyses were conducted to test hypothesised relationships.

Findings – Both well-being and sustainability were positively associated with work performance. Furthermore, sustainability accounted for additional variance in performance beyond that accounted for by well-being. Sustainability partially mediated the relationship between well-being and performance, providing evidence of the importance of sustainability in the workplace.

Originality/value – This study contributes to an emerging field by investigating the relationship between an organisation's sustainability and benefits of this for employees in terms of well-being as well as work performance. The findings provide further support for the happy-productive worker hypothesis and also the first evidence that educational institutions' sustainability can mediate this relationship.

Keywords - Work performance, Well-being, Environmental sustainability, Organisational practices, Happy-productive worker hypothesis

Paper type - Research paper

1. Introduction

In recent years, research into teacher well-being has become a topic of growing interest (Dreer, 2023), in part because of the link between well-being and performance. The happy-productive worker hypothesis (HPWH) posits that happy workers perform better than unhappy workers (Taris and Schreurs, 2009). Evidence within educational contexts indicates that happier teachers have higher levels of performance (Amirian *et al.*, 2023) and importantly happier, more engaged students (Dreer, 2023). Furthermore, teacher performance has been linked to overall school effectiveness as well as positive student outcomes including achievement and well-being (Bilal *et al.*, 2021; Fernández and Martínez, 2022; Özgenel, 2019). In turn, this results in higher levels of institutional success.

Additionally, due to rapidly growing ecological concerns and the pressure for sustainable development, organisations around the world are increasing their environmental sustainability. In an educational context, this has resulted in the integration of sustainability into the curriculum as well as management practices (Magzamen *et al.*, 2017). More broadly, it has also resulted in a search for positive outcomes related to sustainability. For example, the implementation of green practices has been shown to increase institutional competitive advantage (Por and Khlok, 2024); reduce operating costs, via increasing resource efficiency and decreasing waste (Elkhapery *et al.*, 2021); and improve health and well-being of staff and students, through increased indoor air quality and exposure to nature (Geng *et al.*, 2019). This paper proposes, therefore, that the performance of employees is influenced by their organisation's environmental sustainability. That is to say, the more sustainable the employee perceives their organisation to be, the higher they will report their performance to be. Furthermore, we test the hypothesis that perceived sustainability provides one of the mechanisms by which employee well-being influences performance.

1.1 Employee well-being and performance

The World Health Organisation (WHO) estimates the cost of poor mental health to the global economy is around USD 1 trillion annually (WHO, 2022). This has led the UN to include well-being in their Sustainable Development Goals (SDG) to foster physical and mental health for all. SDG3 is to "Ensure healthy lives and promote well-being for all at all ages" (United Nations, 2022). In line with SDG3, the importance of well-being has been steadily growing across many disciplines including psychology, management and education. Subjective well-being (SWB) is

an individual's evaluation of their quality of life which encompasses emotional, physical, social and developmental dimensions, essentially both feeling good and functioning well (Diener *et al.*, 1999). Employees are some of an organisation's most valuable resources and are undoubtedly crucial to the success of an organisation (Na-Nan *et al.*, 2016). Given employee well-being (EWB) has a range of positive and sought-after outcomes in the workplace, employees and employers alike have heightened their interest in EWB in recent years (Zheng *et al.*, 2015). Higher reported EWB is associated with lower levels of presenteeism, absenteeism, depression, anxiety, stress, burnout and turnover intention, leading to an increased focus on well-being by employing organisations (Goetzel and Ozminkowski, 2006; Pescud *et al.*, 2015). Furthermore, higher levels of EWB have long been associated with higher levels of performance (Warr and Nielsen, 2018).

Campbell *et al.*'s 1970 definition of work performance as behaviours or actions that are relevant to the goals of the organisation, has survived with no major disagreements and remains a commonly used definition (Campbell, 2012). Traditionally, therefore, work performance focused solely on task performance, namely the proficiency of individuals performing tasks essential to their job (Koopmans *et al.*, 2011; Soto-Pérez *et al.*, 2020). In an education context, examples of task performance might include subject knowledge, teaching ability and lesson design. Two further facets of performance are important in measuring work performance more comprehensively: contextual performance and counterproductive work behaviours (CWB) (Koopmans *et al.*, 2014). Contextual performance consists of behaviours that support the organisational, psychological and social environment, for example helping coworkers with projects. CWB are behaviours that harm the organisation, for example, creating conflict with coworkers.

1.2 The Happy-Productive Worker Hypothesis

The happy-productive worker hypothesis holds that happy workers, those who report high levels of well-being, have higher levels of performance than their less happy counterparts. This hypothesis was first conceived in the 1930s (Sender *et al.*, 2021) and there is substantial evidence of a positive association between well-being and performance (Warr and Nielsen, 2018). There are a number of theoretical rationales for the HPWH. Equity theory, for example, proposes that individuals both invest in and benefit from relationships (Adams, 1963). In a work context, employees invest their time, effort, skills and knowledge in the relationship with their

employer. In return, they benefit by receiving rewards such as salary, job security and a supportive organisational culture. Equity occurs when employees perceive their investment to be equal to the rewards they receive. The happier the employees feel at work (i.e the more satisfied they are with the benefits they are receiving), the more they feel they should invest in their organisation (i.e the higher their level of performance) in order to reach a point of equity (Taris and Schreurs, 2009).

The broaden and build theory also bears similarities with the HPWH. The theory proposes positive emotions broaden an individual's awareness and encourage curiosity and exploration that builds a library of useful skills and resources (Fredrickson, 2001). Furthermore, individuals experiencing positive emotions are more likely to be helpful and cooperative as well as less likely to engage in conflict, improving performance in collaborative work contexts (Zelenski *et al.*, 2008). Additionally, positive emotions may enhance creative problem-solving skills, leading to increased performance in complex tasks (Madjar *et al.*, 2002). In other words, similar to HPWH in focusing on the happy worker, the broaden and build theory tells us positive emotions can be expected to result in higher levels of performance in both individual and collaborative contexts.

The HPWH is commonly supported at the individual level – the level this paper focuses on (Taris and Schreurs, 2009). Meta-analyses have repeatedly shown that, at the individual level, well-being is positively associated with general performance (Judge *et al.*, 2001; Petty *et al.*, 1984; Sender *et al.*, 2021). Literature also shows evidence of the HPWH in the education context. A study involving over 2000 junior high school teachers found higher levels of well-being resulted in higher levels of student academic achievement, a common measure of teacher performance (Caprara *et al.*, 2006). Teachers with high levels of well-being also feel more engaged whilst teaching, resulting in improved quality of their teaching practice (Turner and Theilking, 2019). Furthermore, in terms of job performance facets, well-being is positively correlated with both task and contextual performance and negatively correlated with CWB (Choi *et al.*, 2024; Koopmans *et al.*, 2014). It should be noted that support for the HPWH is varied (see Iaffaldano and Muchinsky, 1985; Sender *et al.*, 2021) with the majority of criticism coming from literature focusing on group-level performance, or higher. Critics make the argument that just because individual employees have high levels of well-being, does not mean a group of employees, or the organisation as a whole, will show higher levels of performance, in other words, the HPWH may not generalise beyond individuals (Taris & Schreurs 2009).

The relationship of well-being with performance is also known to be influenced by organisational factors such as working conditions and level of organisational support (Hanushek and Rivkin, 2007; Rhoades and Eisenberger, 2002). Additionally, employee experiences of work, such as employee perceptions of communication, can influence performance (Sutton and Atkinson, 2023). Building on this, we suggest an employee's perception of their organisation's environmental sustainability may be involved in the relationship between well-being and performance.

1.3 Sustainability

Environmental sustainability means ensuring there is enough for all, forever, which implies managing and protecting natural resources to ensure they are not overused and depleted and thus guaranteeing their availability for future generations (Goodland, 1995). In this paper, the term 'sustainability' refers exclusively to environmental sustainability thus excluding social or economic dimensions of sustainability and centring on the impact that organisations have on the natural environment. With concern for sustainability growing globally, organisations across all sectors are showing an increased interest in becoming more sustainable (Rowe, 2007; Ruepert *et al.*, 2016). An organisation's level of sustainability is especially important in the education sector as students are a key stakeholder group. Students are known to hold stronger environmental values and report higher levels of concern for environmental issues (Milfont *et al.*, 2021).

Several studies have also noted a positive relationship between an organisation's sustainability and organisational performance (Pinzone *et al.*, 2015; Schrettle *et al.*, 2014). Recent research indicates organisations' eco-friendly environments also have a positive influence on their employees' performance (Sadick and Kamardeen, 2020; Yu *et al.*, 2020). This may be explained by some consequences of sustainable actions also increasing profitability, for example, reduced operating costs and increased competitive advantage (Elkhapery *et al.*, 2021; Por and Khlok, 2024). Similarly at the individual level, sustainability has been found to have a positive effect on performance (Bohlmann *et al.*, 2018). Sustainable practices often create better working conditions, for example, increased air quality and reduced noise pollution, which have been linked to increased focus, energy levels and ultimately performance (Geng *et al.*, 2019; Mohezar *et al.*, 2021). Moreover, employee perceptions of their employer's sustainability may

increase performance as they feel they are doing good for the environment, providing them with a sense of purpose and motivation in their work because it is contributing to a greater cause, sustainability, especially if the employee holds strong environmental values (Nusraningrum *et al.*, 2024; Yong *et al.*, 2022). In this paper, therefore, we first test whether the perceived sustainability of the organisation influences performance beyond the effect of well-being expected from the HPWH, hypothesing:

H1: *Perceived sustainability will predict variance beyond what is predicted by well-being in: (a) task performance, (b) contextual performance, and (c) counterproductive work behaviour*

1.4 Expanding on the happy-productive worker hypothesis

Besides its role in enhancing job performance, well-being is also positively associated with sustainability. Research examining the relationship between sustainability and well-being tends to show the relationship has bidirectional causality, meaning sustainability both influences and is influenced by well-being (Barrington-Leigh, 2016). For the relationship of sustainability to well-being, regularly spending time in natural environments is associated with good health and well-being (White *et al.*, 2019). Furthermore, carrying out pro-environmental behaviours has a positive relationship with both well-being and quality of life (Su and Swanson, 2019; Zhang and Tu, 2021). At an organisational level, positive correlations have been found between well-being and the presence of green ambient conditions as well as green items and areas in the workplace (Han *et al.*, 2021).

Whilst acknowledging this endogeneity, recent research has argued well-being has an influence on sustainability. Using data from 18 countries ($n= 31598$) Sulemana (2016) found happiness to have a positive influence on environmental concern, a common predictor of partaking in sustainability efforts. Similarly, research has found the happier individuals reported themselves to be, the more likely they were to engage in environmental action (Kushlev *et al.*, 2020).

Given the relationship between well-being and sustainability, in this paper, we propose that the HPWH pathway includes sustainability. It is important to note, in the present study we are measuring employee perceptions of how environmentally sustainable they see their institution to be. As such we suggest individuals who report higher well-being, will also report seeing their

institutions as more sustainable. We make this suggestion based on the following rationale. Firstly, evidence from national to individual levels, suggests happier people care more about the environment (Sameer *et al.*, 2021; Sulemana, 2016), and are therefore more aware of their organisation's sustainability efforts. Secondly, we draw on mindfulness literature that tells us well-being fosters a positive emotional state, encouraging mindful awareness of one's surroundings (Garland *et al.*, 2015). When an employee is aware of their surroundings they, in turn, are aware of their organisation's sustainability efforts.

Specifically, we suggest that employee perceptions of their employer's sustainability mediates the relationship between well-being and performance. Based on the well-established positive correlation between an individual's well-being and their levels of environmental concern and awareness of their surroundings (Garland *et al.*, 2015; Sulemana, 2016) we suggest employees with higher levels of well-being are more aware and therefore more appreciative of their organisation's sustainability efforts; resulting in a positive influence on employee performance. Therefore, we hypothesise

H2: *Perceived sustainability will partially mediate the relationship between well-being and:*

(a) task performance, (b) contextual performance, and (c) counterproductive work behaviour

1.5 Present study

In summary, there is a large pool of evidence that well-being is positively related to performance, also known as the HPWH: employees who report higher levels of well-being are found to have higher levels of performance. Similarly, recent research provides evidence that sustainability is also positively related to performance. However, much of the existing research on sustainability focuses solely on its environmental or societal impacts, with limited attention to how employees' perceptions of organisational sustainability influence workplace outcomes. Despite the increased global focus on sustainability, well-being and performance in the workplace, sustainability's role in the well-established HPWH is yet to be investigated. This gap in the literature is particularly notable given the growing emphasis on sustainability's importance to organisations and the potential for sustainability to shape employee attitudes and behaviors. Without examining the relationships between well-being, sustainability, and performance, our understanding of the mechanisms that drive workplace success remains

incomplete. In this paper, we test whether employee perceptions of organisational sustainability account for variance in performance beyond what is accounted for by well-being. Additionally, this paper tests whether sustainability has a mediating role in well-being's influence on performance. That is, well-being influences performance at least partially via the organisation's sustainability.

2. Method

2.1 Ethical Considerations

This study was conducted in accordance with APA ethical guidelines for research involving human participants. Prior to the commencement of data collection, ethical approval was gained from the first author's institutional human research ethics board. All participants provided informed consent prior to participation, after reviewing a detailed information sheet outlining 1) the purpose of the study, 2) their rights as participants, and 3) the measures taken to ensure confidentiality and anonymity. Participants were informed that their participation was voluntary and that they could withdraw from the study at any time without penalty.

2.2 Participants and procedure

Data were collected from employees working in the education sector ($n = 247$). Employees were recruited in two ways: firstly, individuals employed in the UAE's education sector were invited to participate through snowball methodology, starting with the first author's educational sector contacts ($n = 124$). The UAE was chosen due to the country's increased focus on sustainability and dedication to maintaining a high standard of education, additionally, data were collected during the UAE's 'Year of Sustainability', a national initiative focused on promoting sustainability, innovation and collaboration to address climate change and protect natural resources. Secondly, individuals who indicated they were employed in the USA's education sector were recruited through Prolific, an online crowdsourcing platform ($n = 125$). This sample was chosen to ensure data completeness. Following participant recruitment challenges, the USA was chosen as a second sample location as the U.S. Department of Education is committed to ensuring environmental sustainability in schools through several initiatives and commitments as outlined in their Sustainability Report and Implementation Plan (2020) and Climate Change Adaption Plan (2021). After data cleaning (outlined in 2.3), data from 199

participants were retained for analysis. Demographics were as follows: 63.4% female, 34.2% male, 1.5% other/prefer not to say. The age of participants ranged from 18 to 83 ($M = 40.7$, $SD = 10.56$). The majority of participants (66.3%) were employed as teachers, 13.6% as administrators, 11.1% as learning support/teaching assistants and the remaining 9% as management or consultants, with a mean tenure of 7.73 years ($SD = 7.60$).

2.3 Measures

Employee well-being was measured using the Employee Well-Being Scale (Zheng *et al.*, 2015). The scale consists of three subscales (6 items each) covering facets of well-being in a workplace setting. Life well-being (LWB) includes items relevant to employees' lives both inside and outside of work e.g. "I am in a good situation". Work well-being (WWB) includes items relevant to employees' thoughts and feelings at work, e.g. "I find real enjoyment in my work". Psychological well-being (PWB) includes items that focus on employees' psychological needs, e.g. "I handle daily affairs well". Participants responded to the scale's items using a 6-point Likert scale ranging from 1 "never" to 6 "all of the time". In the present study the internal reliability was found to be good ($\alpha = .94$).

Performance was measured using the Individual Work Performance Questionnaire (IWPQ) (Koopmans *et al.*, 2012). The IWPQ is an 18-item self-report measure of individual performance at work across three facets, task performance (5 items), the proficiency with which individuals perform tasks central to their job, e.g. "I planned my work optimally"; contextual performance (8 items), behaviours that aid the organisation through enabling it to function effectively and efficiently, e.g. "I took on extra responsibilities"; and CWB (5 items), behaviours that detract from the organisation's goals or result in negative consequences for the organisation and/or its stakeholders, e.g. "I complained about unimportant issues at work". The IWPQ asks participants to think about the last three months when answering and respond on a Likert scale ranging from 0 "seldom" to 4 "always" for the task and contextual performance subscales, and from 0 "never" to 4 "often" for the CWB subscale. In the present study, the internal validity of all three scales was found to be good ($\alpha = .84$, $.89$ and $.82$ respectively).

Sustainability is challenging to measure due to a lack of standardisation in the area (Hall *et al.*, 2022). In the present study, we measured perceived sustainability by combining two domains: perceived protection of the natural environment and perceived organisational support towards the environment. The combined measure captures employee perceptions of both the direct

environmental actions undertaken by their employer and the frameworks in place to support environmental actions, resulting in a comprehensive measure of sustainability.

Perceived protection of the natural environment focuses on the direct actions employees perceive their organisations to take in order to protect the environment and conserve resources. It was measured using the Natural Environment subscale taken from the Corporate Stakeholder Responsibility Scale (CStR-NE; El Akremi et al., 2018). The CStR-NE is a unidimensional 7-item measure that asks participants how environmentally sustainable they perceive their organisation to be, e.g. “Our company contributes toward saving resources and energy (e.g., recycling, waste management)”. Participants were asked to indicate how much they agreed or disagreed with the items and answered using a 6-point Likert scale ranging from 1 “strongly disagree” to 6 “strongly agree”.

Perceived organisational support toward the environment (POS-E) measures the structural and cultural aspects of an organisation that promote sustainability and was measured using Lamm et al.’s (2015) scale. The scale is unidimensional and measures employees’ perceptions of how much support their organisation provides them to be environmentally sustainable. An example item from the scale is “My organization provides an incentive for me to reduce the use of non-renewable resources”. Participants’ responses were recorded using a 7-point Likert scale ranging from 1 “strongly disagree” to 7 “strongly agree”.

Sustainability was therefore calculated using the mean of CStR-NE and POS-E items. As the POS-E was scored using a 7-point scale, before calculating the mean, POS-E was reduced from a 7-point response to a 6-point response via linear interpolation. To confirm the model fit for a single latent variable a confirmatory factor analysis (CFA) was run and it was found the 12-item model fit was borderline unsatisfactory (CFI = .934, RMSEA = .117, SRMR = .039). To improve model fit, Wieland et al.’s (2017) scale purification suggestions were followed. After removing four items (see Table S1 in supplementary info for all items, and inclusion/exclusion decisions), identified by the modification indices and residuals matrix, an 8-item model with good fit was created (CFI = .988, RMSEA = .064, SRMR = .020). Furthermore, the new 8-item combined measure of perceived environmental sustainability was found to have high internal consistency ($\alpha = .94$).

2.4 Data Analysis

Data were cleaned using a four-step process. First, data were excluded if participants answered *no* to the commitment check question: “We care about the quality of our survey data. For us to get accurate measures, it is important that you answer the following questions carefully and honestly. Do you commit to answering all questions carefully and honestly?”. Two respondents answered no and were excluded. Second, participants who completed less than 95% of the survey were excluded ($n = 42$), as suggested by Schafer (1999). Lastly, participants who completed the survey too quickly were excluded ($n = 5$), the cut-off value used was 50% faster than the median completion time, as suggested by Greszki et al. (2014). A Mahalanobis distance test was run to identify and exclude multivariate outliers; no such outliers were identified.

Data analysis began with descriptive and correlation analyses to discover the relationships between all variables. To test our hypotheses, hierarchical linear regression analyses were conducted to determine whether perceived sustainability accounted for additional variance in performance beyond that accounted for by well-being. Finally, regression mediation analysis was conducted to test for the mediating effect of perceived sustainability on the relationship between well-being and performance.

3. Results

3.1 Descriptives and correlations

Relationships between well-being, sustainability and the three facets of performance (task performance, contextual performance and CWB) are shown in Table 1. Well-being was found to have a significant positive correlation with sustainability ($r = .38, p < .001$), task and contextual performance ($r = .40, p < .001$; $r = .54, p < .001$, respectively) and a significant negative relationship with CWB ($r = -.38, p < .001$). Furthermore, sustainability was found to correlate positively and significantly with task and contextual performance ($r = .15, p = .031$; $r = .39, p < .001$, respectively), and negatively with CWB ($r = -.44, p < .001$). Given the correlations found between variables and the cross-sectional self-report methodology, Harman’s test was run to check for common method variance (CMV). The unrotated single-factor model accounted for 30.8% of variance, far under the 50% cutoff (Fuller et al., 2016), indicating CMV is not a pervasive issue in the study.

Table 1

Descriptive statistics and correlations between well-being, sustainability and environmental attitudes (N = 199)

	Total					M	SD	Skewness	Kurtosis
	1	2	3	4	5				
1. Well-being	(.94)					4.55	.862	-.897	1.107
2. Sustainability	.380**	(.96)				3.57	1.297	.137	-.941
3. Task performance	.403**	.155*	(.84)			3.96	.762	-.530	-.428
4. Context performance	.540**	.399**	.531**	(.89)		3.69	.828	-.285	-.628
5. Counterproductive work behaviour	.377**	.445**	.367**	.387**	(.82)	2.20	.788	.144	-.509

Note. Cronbach's alpha values shown in parentheses, all skewness Std. error = .172 , all kurtosis Std. error = .343 , ** p<0.01, * p<0.05.

Source: Authors own work

3.2 Hierarchical linear regression

Hierarchical linear regression analyses were run to determine the extent to which well-being and sustainability accounted for performance. Three analyses were run, using task performance, contextual performance and CWB as the respective outcome variables. Predictor variables were included in two blocks, the first comprising of the control variable, sample country, and well-being. In the second block, sustainability was added. As shown in Table 2 (Model 1), well-being was significant in accounting for 22.1% of variance in task performance ($R^2 = .221$, $F(2,196) = 27.722$, $p < .001$), 31% of variance in contextual performance ($R^2 = .310$, $F(2,196) = 44.115$, $p < .001$), and 14.2% in CWB ($R^2 = .142$, $F(2,196) = 16.264$, $p < .001$). When sustainability was added in Model 2, no significant increase in variance accounted for in task performance was found (the results did not support H1a), however, an additional, 2.6% of variance was accounted for in contextual performance (R^2 change=.026, $F(2,196) = 32.964$, $p = .006$), beyond the variance accounted for by well-being, supporting H1b. Furthermore, an additional 11.5% of variance was accounted for in CWB, R^2 change=.115, $F(2,196) = 22.550$, $p < .001$), beyond the variance accounted for in Model 1 by well-being, supporting H1c.

Table 2

Results of multiple hierarchical linear regression analyses to determine variance accounted for by sustainability in the three facets of performance, beyond the variance predicted by well-being (N = 199)

Outcome	Predictors	Model 1				Model 2				ΔR^2	ΔR^2 Sig
		<i>B</i>	<i>SE</i>	β	<i>p</i>	<i>B</i>	<i>SE</i>	β	<i>p</i>		
TP	Constant	2.061	.269		< .001	1.974	.276		< .001		
	UAE or USA	.381	.100		< .001	.425	.105		< .001		
	Well-being	.365	.056	.414	< .001	.335	.060	.379	< .001		
	Sustainability					.055	.042	.094	.194		
	R^2			.221				.228		.007	.194
CP	Constant	1.507	.275		< .001	1.322	.278		< .001		
	UAE or USA	-.238	.102		.021	-.143	.106		.206		
	Well-being	.512	.057	.533	< .001	.448	.061	.466	< .001		
	Sustainability					.117	.042	.184	.006		
	R^2			.310				.336		.026	.006
CWB	Constant	3.780	.291		< .001	4.150	.279		< .001		
	UAE or USA	-.014	.108		.900	-.202	.106		.048		
	Well-being	-.345	.061	-.378	< .001	-.215	.061	-.236	< .001		
	Sustainability					-.234	.043	-.388	< .001		
	R^2			.142				.258		.115	<.001

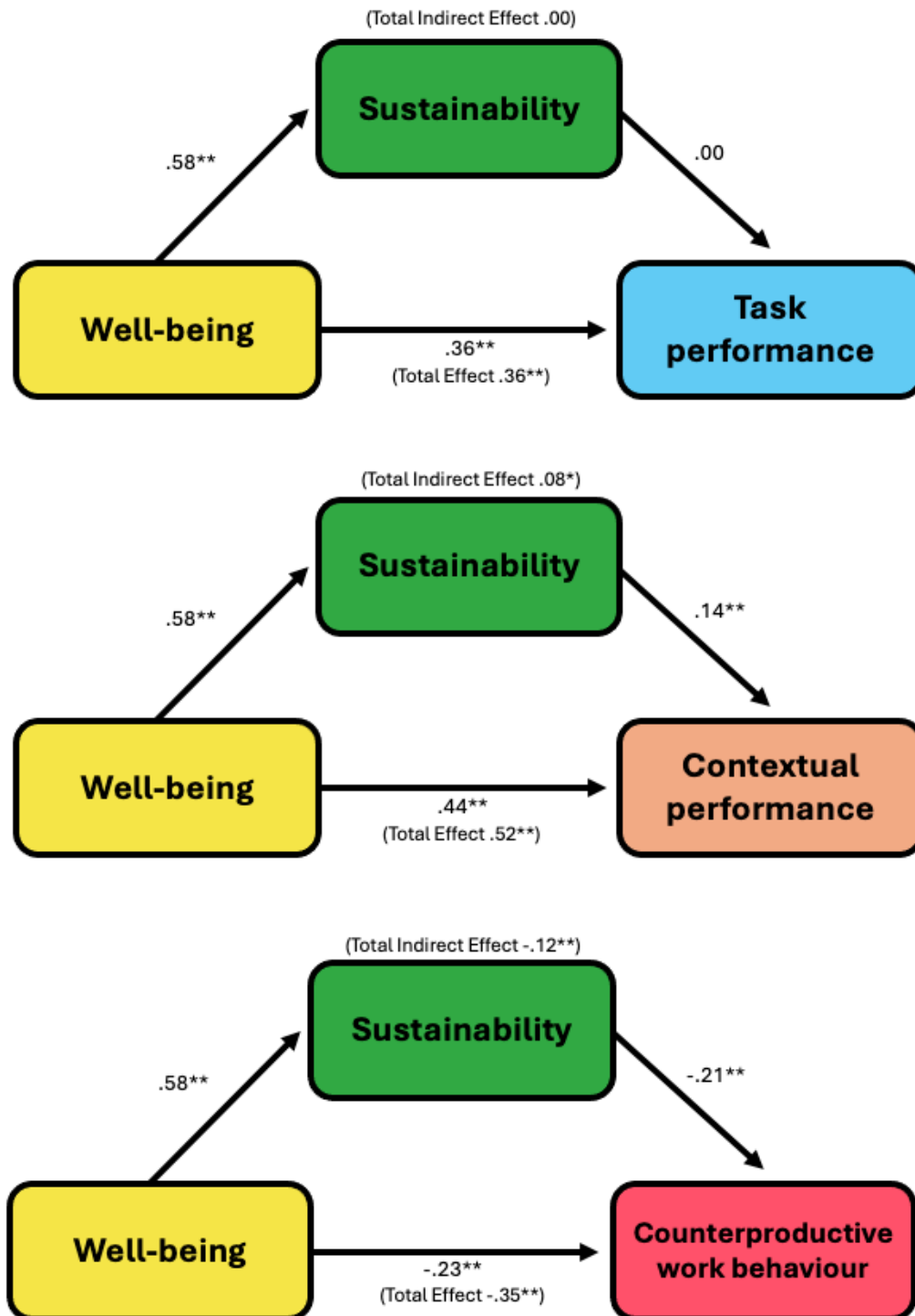
Source: Authors own work

3.3 Mediation

Mediation analyses were conducted, using PROCESS (Hayes, 2013), to test for the mediating effects of sustainability on the relationship between well-being and performance (see Figure 1). As shown in Table 3, sustainability was not found to mediate the relationship between well-being and task performance, as such, H2a was not supported. However, sustainability was found to have partially mediated the relationship between well-being and contextual performance ($B = .078$, 95% CI [.026, .130]), as well as CWB ($B = -.119$, 95% CI [-.180, -.059]), confirming H2b and H2c.

Figure 1

Mediation diagrams showing the mediating effect of sustainability on the relationship between well-being and the three facets of performance



Note. Path coefficients shown, total effects (direct and indirect) shown in parentheses.

* $p < .05$, ** $p < .001$

Source: Authors own work

Table 3

Results of mediation analyses between well-being (X), sustainability (M), and the three facets of performance: task performance (Y¹), contextual performance (Y²) and counterproductive work behaviour (Y³) (N =199)

Performance facet	Total effects	Model	B	SE	z	p	95% CI		Mediation
							LL	UL	
Task performance	Direct	Well-being ► Task performance	.356	.062	5.743	< .001	.243	.477	ns
	Indirect	Well-being ► Sustainability ► Task performance	.000	.024	.024	.998	-.046	.046	
Contextual performance	Direct	Well-being ► Contextual performance	.441	.060	7.314	< .001	.323	.559	Partial
	Indirect	Well-being ► Sustainability ► Contextual performance	.078	.027	2.934	.003	.026	.130	
Counterproductive work behaviour	Direct	Well-being ► Counterproductive work behaviour	-.225	.061	-5.745	< .001	-.462	-.227	Partial
	Indirect	Well-being ► Sustainability ► Counterproductive work behaviour	-.119	.031	-3.855	< .001	-.180	-.059	

Source: Authors own work

4. Discussion

4.1 General discussion

In support of the HPWH (DeNeve and Cooper, 1998), we found well-being to account for significant variance in all three facets of performance, task performance, contextual performance and CWB, (22.1%, 31% and 14.2% respectively) supporting the HPWH's applicability within the education sector. Whilst the predictive influence of well-being on performance has been extensively researched (Sender *et al.*, 2021; Taris and Schreurs, 2009), including in educational settings (Dreer, 2023), sustainability's influence on performance remains vastly understudied. Therefore, this paper also investigated whether sustainability accounted for variance in performance beyond that accounted for by well-being alone. Our findings suggest sustainability is an important factor associated with performance in unique ways; we found sustainability to significantly predict further variance, after controlling for wellbeing, in contextual performance (additional 2.6%) as well as CWB (additional 11.5%), although not in task performance. Congruent with past research (Chuah *et al.*, 2021; Sadick and Kamardeen, 2020; Yu *et al.*, 2020), our results support the claims that sustainability has a positive influence on two key facets of performance, going the extra mile via contextual performance and reducing behaviours or actions that harm the organisation via CWB. The findings also align with Fredrickson's broaden and build theory (2001) whereby positive emotions (i.e pride, interest, awe) arising from working for a sustainable organisation may

account for employees displaying increased cooperation and helpfulness as well as lower aggression, resulting in both higher levels of contextual performance and lower levels of CWB (Zelenski *et al.*, 2008).

It is important to understand the significance of the relationships we found sustainability to have with contextual performance and CWB. Employee contextual performance is seen as a key element to the success of an organisation as it shapes the social, psychological and organisational contexts that in turn shape overall performance (Borman and Motowidlo, 1997). An example of contextual behaviour in the education sector is helping other staff to prepare classrooms before the beginning of term, this enhances the institution's collaborative culture and sense of community. Essentially, by increasing contextual performance, an organisation builds a culture of helping others in the organisation to complete tasks.

Conversely, CWB is a broad concept that encompasses all actions or behaviours that can harm an organisation, its employees or its stakeholders. Examples include taking days off without a valid reason, talking about negative aspects of the job with coworkers, substance abuse, theft and even espionage (Dalal, 2005). In an educational context, an example of CWB is falsifying records, such as student attendance or grades, either to meet institutional goals or to avoid reprimand. Regardless of the type of CWB, its influence on organisational performance is negative. Furthermore, CWBs have been found to contribute to several negative outcomes for individuals including burnout as well as reduced well-being, task and contextual performance (Koopmans *et al.*, 2014; Makhdoom *et al.*, 2019) and decreased organisational effectiveness and performance (Dalal, 2005). This paper's findings suggest sustainability has positive effects on contextual performance and CWB, and thereby can positively contribute to organisational performance.

Given our findings provide evidence that sustainability influences performance in ways distinct from well-being, we then turned to consider whether sustainability could be integrated into the HPWH. Our findings show the relationships between well-being and both contextual performance and CWB are partially mediated by sustainability. The PROCESS results further confirm well-being's direct relationship with both task and contextual performance (in other words, further confirming the HPWH) but arguably of greater importance, also tell us that sustainability is an important mechanism for the positive effect of well-being on performance.

One possible explanation of the finding that sustainability is positively associated with performance is that when organisations carry out sustainable practices, working conditions are often improved, therefore performance is increased. For example, sustainability efforts that increase air quality and decrease noise pollution can boost employee performance through increasing focus, energy levels and creativity (Geng *et al.*, 2019; Mohezar *et al.*, 2021). Similarly, a work environment that fosters a connection with nature, for example, has window views and images of nature, restores attention, in turn, further aiding the influence on performance (Kuo, 2015).

A possible explanation of the mediating effect we found is employees with higher levels of well-being are likely to also have higher levels of environmental concern as well as mindful awareness (Garland *et al.*, 2015), resulting in greater attentiveness to their institution's sustainability efforts and therefore, higher reported perceptions of how sustainable their employer is (Kushlev *et al.*, 2020). When an employee is both concerned for the environment and aware of the actions their institution is making to protect the environment, equity theory suggests this may tip the balance of the employee/employer relationship resulting in employees increasing their performance. Furthermore, research has found that happier individuals are more likely to make income sacrifices and take environmental actions (Sulemana, 2016), aligning with, and providing further explanation for our findings that well-being increases perceived sustainability. This, in turn, increases contextual performance, that is, going the extra mile and performing work tasks that help coworkers and the organisation without receiving an additional monetary reward.

4.2 Implications

This paper makes both theoretical and practical contributions to the area of job performance, EWB and organisational sustainability in an educational context. Our findings confirm the HPWH applicability by showing significant amounts of variance in the three domains of performance are accounted for by well-being in a sample of educational institution employees. Further to supporting HPWH as a well-established theory, this paper aimed to extend the HPWH by showing that, in addition to well-being, sustainability is a key factor contributing to job performance. We found that sustainability not only uniquely contributes to two domains of job performance but also mediates the abundantly studied relationships between well-being

and both contextual performance and CWB. This presents an important development of the HPWH by identifying a mechanism by which well-being influences performance.

Despite the endogeneity between well-being and sustainability, this paper's focus remains on understanding how well-being may shape perceptions of organisational sustainability, and in turn performance. Research suggests well-being influences sustainability (Sulemana, 2016) and increases individual's general and environmental awareness (Garland *et al.*, 2015; Kushlev *et al.*, 2020) which may lead to increased awareness and appreciation of organisational sustainability efforts, in turn positively influencing both contextual performance and CWB. Our results confirm the possibility of this chain of influence through significant partial mediation.

Practically, this paper's findings suggest organisations may benefit from focusing on both employee well-being and sustainability initiatives, not only as important stand-alone factors but also as a means to enhance the job performance of employees. With pressures mounting for schools to become more sustainable (Magzamen *et al.*, 2017) and the growing importance placed on employee well-being (Dreer, 2023), it is likely in the coming years we will see more educational institutions focus on increasing sustainability and developing a supportive, caring workplace. This study's findings suggest these efforts will improve not only their sustainability and their employees' well-being but also some facets of employee job performance. This could lead to increased organisational performance and, in an educational context, positive student outcomes.

4.3 Limitations and future research

This study was not without limitations. First, we note that this study did not measure actual environmental sustainability; instead, we measured employee perceptions of the sustainability of the institution they work for, and this should be borne in mind when interpreting results. While we demonstrate the relationships between well-being, perceived sustainability and performance, we acknowledge this does not necessarily mean the same relationships exist between well-being, performance and actual sustainability, that is, in terms of the organisation's environmental policies and practices. However, measurement of actual sustainability generally occurs through self-administered environmental audits using indicators chosen by the organisation (Pham *et al.*, 2020). Hence, apparently more objective measures of an organisation's environmental sustainability are costly, lack consistency, subjective and prone to bias (e.g., only measuring indicators where the organisation is succeeding). Future

research could investigate differences in employee outcomes influenced by both perceived and actual sustainability.

Furthermore, data were collected using a self-report and cross-sectional design. As participants only responded at one time point, we were unable to test for causality or the long-term influence of sustainability with the HPWH. Given that our study highlights the positive influence of sustainability within the HPWH framework, future research may benefit from exploring this further through longitudinal and experimental designs, as well as measuring performance using other sources, such as supervisors, peers, direct reports and—for education—student ratings and results. Finally, given our suggestion that the mediation pathway of sustainability may be due to well-being creating greater awareness of sustainability efforts, future research could focus on testing this using research designs that seek to raise employee awareness of environmental sustainability.

5. Conclusion

We investigated the HPWH in an educational context and extended it by testing the mediating influence of sustainability. Our findings add to the well-established body of evidence showing the positive relationship between well-being and performance. Additionally, we established sustainability is related to performance in unique ways; accounting for variance in two types of performance beyond that accounted for by well-being alone. Furthermore, we found sustainability to mediate the HPWH, for both contextual performance and CWB, providing evidence of sustainability's importance in the workplace. We hope this paper inspires further research into sustainability's impact on the HPWH and provides further motivation for educational organisations seeking to increase their sustainability.

6. References

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Table S1

Items from the POS-E and CSTR-NE scales included/excluded from the sustainability measure following a CFA

Scale	Item #	Item
Support (POS-E)	1	I feel that I am able to behave as sustainably as I want to at the organization where I currently work.
	2	My organization does not care about whether I behave in a sustainable manner or not. (<i>reverse-scored</i>)
	3	My organization provides an incentive for me to reduce the use of non-renewable resources.
	4*	I do not feel that I make a positive environmental impact through work at my organization. (<i>reverse-scored</i>)
	5*	My actions toward sustainability are appreciated by my organization.
CSTR-NE	1	Our company takes action to reduce pollution related to its activities (e.g., choice of materials, eco-design, and dematerialization).
	2	Our company contributes toward saving resources and energy (e.g., recycling, waste management).
	3	Our company makes investments to improve the ecological quality of its products and services
	4*	Our company respects and promotes the protection of biodiversity (i.e., the variety and diversity of species).
	5	Our company measures the impact of its activities on the natural environment (e.g., carbon audit, reduction of greenhouse gas emissions, global warming).
	6*	Our company invests in clean technologies and renewable energies.
	7	Our company encourages its members to adopt eco-friendly behaviour (sort trash, save water and electricity) to protect the natural environment.

Note. * indicates items removed from sustainability scale following CFA

Source: Scales by Lamm et al., 2015 (POS-E) and El Akremi et al., 2018