

A relational analysis of the impact of corporate green transformation on employee well-being.

Yi Ran^{1,3}, Kong Fande^{1,3}, Li Xinyu³, Liu qi-jia^{1,2,3*}

¹Korea-China Economic Development Institute , Mental Health Development Department ,Gyeonggi University , Seoul, South Korea

² Social Psychology Institute , Shinhan University, Seoul, South Korea

³ Department of Global Trade and Management, Shinhan University, Gyeonggi-do, South Korea

* Liu qi-jia: Liuqijia679@gmail.com

Abstract

This paper presents new evidence linking different aspects of employee psychological behaviour (life satisfaction, work attitudes, job autonomy, organisational identity, economic coercion and mental health status) to employee well-being. Using survey data from Chinese transitioning firms, we investigated the relationship between psycho-behavioural aspects, employee well-being and broader psycho-behaviour of Chinese employees (N = 471) in the process of corporate green transition. Exploratory structural equation modelling identified the structural relationships between the factors of employee psychological behaviour. The results suggest that a sense of economic duress during corporate green transformation can have a negative effect on employees' psychological well-being. Chinese employees' life satisfaction in the process of corporate transformation affects employees' work attitudes. Work attitudes in turn affect employees' sense of organisational identity and employee well-being. The study guides the humanistic care strategy of enterprise green transformation: the study points out that the sense of economic coercion in the process of enterprise green transformation will have a negative impact on the psychological health of employees. This suggests that companies need to fully consider the economic and psychological capacity of employees when developing green transition strategies, and avoid overly compressing costs or increasing employee work pressure, in order to ensure that the transition process is smooth and the well-being of employees is maintained.

Keywords: Green Transformation, Psychological Behaviour, Employee Happiness, Employees, Humanistic Care.

1 Introduction

In the face of intensifying global environmental problems, the shift to a green paradigm has become a key strategy for companies to achieve sustainable development goals(1). This transition is not a smooth one, and it is accompanied by many uncertainties and challenges, especially in terms of the impact on employee psychology and behaviour(2). Most of the previous studies have focused on the economic benefits of green transformation, technological innovation and environmental protection, while less attention has been paid to the environmental cognitive load and spatial anxiety of employees in the transformation process(3). This paper aims to fill this research gap and provide a humanistic perspective on the transformation strategy of enterprises by deeply analysing the relationship between changes in the working environment and employees' psychological conditions and well-being in the context of the uncertainty of enterprise green transformation.

In the context of corporate green transformation, employees face a series of changes in the work environment, including the adjustment of job duties, the improvement or deterioration of the work environment, and potential economic threats(4). These changes not only affect employees' work efficiency and performance, but also profoundly affect their psychological state and sense of well-being(5). In particular, the sense of economic coercion, as a stressor commonly felt by employees during the transition process, is of particular concern for its impact on employees' psychological health status and well-being. In order to comprehensively understand the impact of corporate green transformation on employees' psychological behaviours, this paper introduces a number of psychological behavioural variables, including life satisfaction, work attitude, work autonomy, organisational identity and psychological health status(6). Together, these variables constitute a complex system of employees' psychological behaviours, which interact and influence each other, and together shape employees' well-being experience(7).

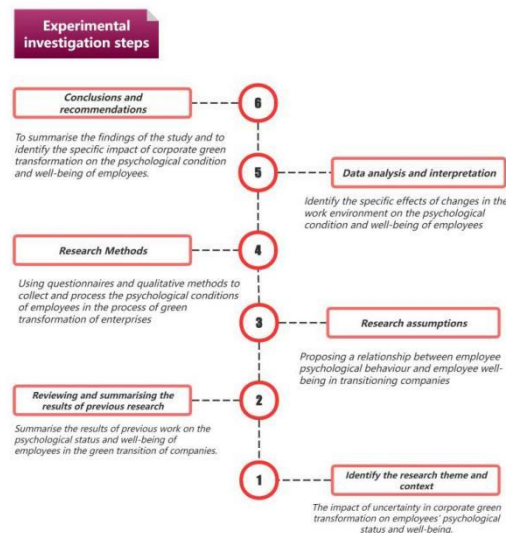


Figure 1. Experimental Design Process

Using survey data from Chinese transition enterprises, this paper provides an in-depth study of Chinese employees' psychological behaviours during the process of corporate green transition. The experimental flow is shown in Figure 1. Through the construction of exploratory structural equation models and qualitative analysis, it reveals the structural relationships between the various factors of employees' psychological behaviours and the intrinsic associations of each factor, as well as how they work together to contribute to employees' well-being. This study helps us to deeply understand the impact of green transformation enterprises on employees' psychology, and it also provides an important theoretical basis and practical guidance for transformation enterprises to formulate humanistic care strategies.

2 Theoretical basis and structural modelling

2.1 Theoretical foundation

Enterprise green transformation, as a multidimensional and complex change process. Many uncertainties, not only about the long-term development of the enterprise, but also profoundly affect the well-being of employees (8).Sonnentag scholars have found that happiness perceptions may fluctuate in response to changes in life circumstances(9).Professor Charles A. Ogunbode has found that human involvement in environmental actions can alleviate human environmental anxiety(10).Reducing environmental anxiety and promoting

employee work attitudes during a green transformation of an organisation will enhance employee well-being (11). In terms of organisational identity affecting employees' well-being PP Schultz scholars (12) and I Hameed scholars (13) found that mental health status and employees' autonomy and would have a positive effect on organisational identity. In the process of business transformation, companies may significantly increase employees' organisational identity and well-being by developing positive incentives (14) and giving them more autonomy in their work (15). Previous researchers and scholars have found that feelings of economic duress can create negative attitudes towards mental health status (16). Employees' sense of economic duress, on the other hand, may stem from the uncertainty of the prospect of corporate transformation (17). Meanwhile, work stress, as a key factor affecting employees' mental health and well-being, needs to be taken seriously by enterprises(18) .

From the above, it can be seen that the uncertainty factors in the green transformation of enterprises have a multifaceted impact on employee well-being. We need to consider the impact of life satisfaction, work attitude, work autonomy, organisational identity, economic coercion, and psychological health on employees' employee well-being in many ways.

2.2 Structural modelling

In the context of green transformation of enterprises, employee well-being has become one of the key indicators to measure the success of corporate transformation. Drawing on the Expectation Confirmation Theory (ECT) in social psychology, we constructed a model covering multiple dimensions such as life satisfaction, economic coercion, work autonomy, organisational identity, and mental health status. The impact of these factors on employee well-being in a green transition environment is explored in depth.

3 Modelling assumptions

3.1 The effect of life satisfaction and work attitudes on employee well-being

In the intertwining of life and work, there is a strong link between employees' life satisfaction and work attitudes, which further affects their well-being. One study found that life satisfaction first affects work attitudes, which subsequently then have a profound effect on employee well-being (19). Employee's satisfaction as an

individual with life as a whole or in specific areas (e.g., family, health, financial status, etc.) is an important reflection of the employee's psychological state. When employees are satisfied in their lives, they tend to have a more positive mindset (20). Positive emotions unconsciously permeate the workplace and form a positive work attitude (21). Positive transfer of emotions can stimulate employees' enthusiasm for work, improve work efficiency, and bring higher job satisfaction and happiness at the same time.

life satisfaction affects work attitude, and subsequently work attitude then has a profound impact on employee happiness. Enterprises should pay attention to employees' life satisfaction, and enhance employees' life satisfaction by providing a good working environment, reasonable salary, and rich employee benefits. In this way, it can not only enhance the personal well-being of employees, but also strengthen the cohesion and competitiveness of the enterprise, and promote the sustainable and healthy development of the enterprise.

Hypothesis H1: Employee life satisfaction affects work attitude.

Hypothesis H2: Employee work attitude affects employee well-being.

3.2 The effect of job autonomy and organisational identity on employee well-being

In the midst of the profound changes of the green transformation of enterprises, the changes in the working environment have brought unprecedented challenges and uncertainties. This transition requires not only innovation at multiple levels, such as corporate management, but also an understanding of changes in the psychological and behavioural levels of employees. Work autonomy has been found to be critical for stimulating employee potential and enhancing efficiency (22). Enhancing job autonomy gives employees more decision-making power and freedom, which may have strengthened their organisational identity and made employees more motivated to deal with the transformation challenges. Increased organisational identification may have fostered cooperation among employees (23). In the context of green transformation, collaboration and information sharing among employees become particularly important. When employees develop a strong sense of identity with the organisation, they are more willing to share their experiences (24). This improves work efficiency and also enhances employees' sense of belonging and well-being.

The impact of work autonomy and organisational identity on employee well-being in the process of corporate green transformation cannot be ignored (25). Enterprises can effectively enhance employees' work autonomy and organisational identity, which in turn improves employees' sense of well-being and lays a solid foundation for the successful implementation of green transformation.

Hypothesis H3: Employee job autonomy affects organisational identity.

Hypothesis H4: Employee organisational identity affects employee well-being

3.3 The impact of economic coercion and mental health status on employee well-being

The process of corporate green transition may have an impact on employee happiness and employee well-being by facing two major challenges for corporate employees: economic coercion and psychological health (26). Economic coercion, stemming from the high investment required for the transition. It is particularly heavy for SMEs and tends to trigger mental health issues such as employee anxiety about the company's future, impair social relationships and reduce work effectiveness. Mental health status is directly related to employee well-being (27). A good psychological state can improve well-being, enhance work effectiveness, and reduce turnover. Conversely, mental health problems may lead to decreased employee satisfaction, affecting work effectiveness and loyalty (28). Economic coercion indirectly reduces employee well-being by deteriorating mental health, forming a vicious circle.

The experiment explores the impact of economic coercion and mental health on employee well-being faced by employees during the green transformation of enterprises. It also provides a basis and practical reference for the development of humanistic care strategies in transition enterprises.

Hypothesis H5: Employees' psychological health is affected by economic duress.

Hypothesis H6: Employees' psychological health affects employees' happiness.

3.4 The impact of work attitudes and mental health on organisational identity

Green transformation of enterprises affects employees' work attitudes and psychological well-being, which in turn shapes organisational identity (26). During the transition process, employees need to be more innovative and

teamwork-oriented, and these new requirements prompt them to adjust their work attitudes and become more committed and responsible(29). When employees realise the importance of their work to environmental protection, the sense of responsibility is transformed into a sense of identity and belonging to the organisation (30). In terms of mental health, the uncertainty and increased workload brought about by the green transition may bring stress to employees. Effective stress management support by enterprises will make employees feel cared for and enhance their identification with the organisation (31).

Therefore, enterprises should pay attention to employees' work attitudes and mental health in green transformation, stimulate motivation through support and incentives, and enhance the sense of organisational identity and sense of belonging, so as to promote the success of the green transformation of enterprises.

Hypothesis H7: Employee work attitude affects organisational identity

Hypothesis H8: Employee mental health influences organisational identification

To explore the influencing factors of employees' well-being in the green transition environment. A structural model with multiple dimensions of life satisfaction, economic coercion, work autonomy, organisational identity, work attitude and mental health status was constructed, as shown in Figure 2.

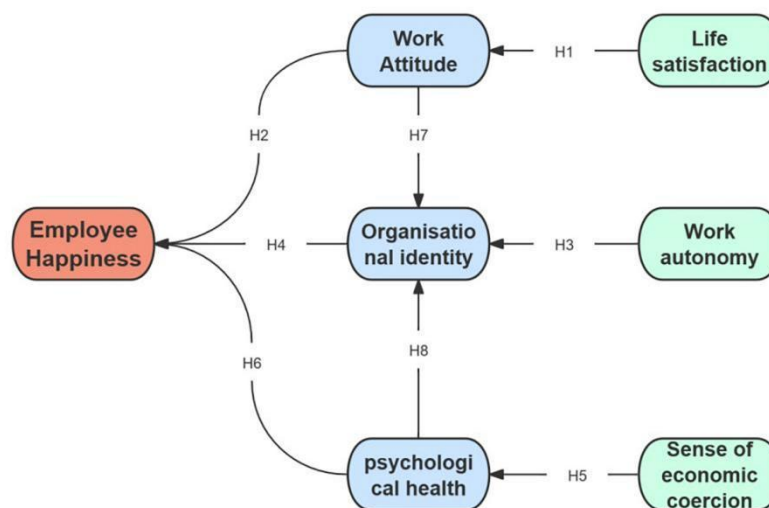


Figure 2. Structural Model of Factors Influencing Employee Happiness

4 Research Methods

4.1 Questionnaire design

In constructing the scales required for this study, we strictly followed the norms of academic research, relying primarily on and drawing from well-established literature that has been widely validated and recognised in the field. In order to ensure that the content of the scales meets the international research standards as well as aptly reflecting the specific context of this study, we made meticulous adjustments and optimisations to the selected scales (32). Specifically, for the dimensions of life satisfaction, work attitudes, job autonomy, organisational identity, economic coercion, and psychological well-being, the experiment adopted the scales from classic studies such as Delone & McLean (1992, 2003) as the base framework, and made minor modifications based on them to adapt to the specific needs and contextual background of this study (33). Similarly, employee well-being was measured with reference to the Subjective Well-being Assessment Theory (34), whose scales have demonstrated good reliability and validity in studies across a number of domains. This choice not only ensures the authority of the measurement tool, but also provides a solid theoretical foundation for our study of user behavioural intention.

In the choice of control variables, we followed the conventional practice in academic research and used descriptive statistical variables such as gender, age and education. These variables, as representatives of user characteristics, can help us to a certain extent to control the influence of potential individual differences on the results of the study, so as to improve the accuracy and reliability of the study.

4.2 Data collection and sample analyses

In this study, to ensure the rigour and validity of the research, we firstly conducted a pre-survey with Beijing Xue Neng Tong Science and Technology Group Co. Ltd. in Beijing, one of the green transformation enterprises, in order to test the appropriateness and reliability of the questionnaire. Based on the feedback from the pre-survey, we adjusted the questionnaire for possible problems such as poor understanding. We also absorbed the professional opinions of scholars in related fields to optimise and improve the questionnaire content, and finally formed a formal questionnaire for the objectives of this study.

In the formal research stage, we made full use of the internal communication channels of Beijing's corporate transformation, social media platforms (such as WeChat, email, etc.) and corporate community forums to release the questionnaire link and QR code. We adopted a cash incentive to encourage them to click or scan

into the anonymous online questionnaire filling interface to share their true views on employee happiness.

In order to ensure the quality of the data, we carefully reviewed the collected questionnaires based on strict screening criteria, and eliminated invalid questionnaires that did not meet the requirements. Specific screening principles include: questionnaires that did not pass the screening questions, questionnaires with incomplete answers, questionnaires with similar answers to most questions, and questionnaires completed in a very short time (e.g., within three minutes, based on the lower limit of reasonable answer time determined by the advance test). A total of 471 valid questionnaires were collected after a six-month research period. And the basic information of the respondents were statistically analysed, as shown in Table 1 The distribution of the information characteristics of the survey respondents is as follows.

Table 1 Description of the distribution of information characteristics of survey respondents

Variable	Option	Frequency	Percentage
Gender	Female	246	52.2%
	Male	225	47.8%
Age group	$20 \leq x < 30$	193	41%
	$30 \leq x < 40$	152	32.2%
	$40 \leq x < 50$	80	17%
	$x \geq 50$	46	9.8%
	Secondary school	23	4.9%
Your education level	College	66	14%
	Undergraduate	360	76.4%
	Postgraduate and above	22	4.7%
Form of labour	Contractual	168	35.7%
	Personnel agency	251	53.3%
	Staff on board	52	11%

5 Data analyses and testing

5.1 Reliability and validity test

In this study, as shown in Table 2, we used the SPASS software as an analytical tool to exhaustively test the constructed model. To ensure the reliability and validity of the model, a series of rigorous metrics were used to test it. First, the consistency reliability of the model was assessed by calculating the combined reliability (CR) and Cronbach's α , and observing that the χ^2 / df is equal to 1.605, and the RMSEA is equal to 0.036. As shown in Table 2, the values of CR and Cronbach's α for all the variables are significantly higher than the recommended thresholds of 0.7 and 0.8, which suggests that our measurement model performs well in terms of internal consistency is excellent and has a high level of reliability.

Second, we assessed the convergent validity of the model using factor loadings and average variance extracted (AVE). The results showed that the AVE values of all variables exceeded the criterion of 0.5, and the factor loadings of all items were greater than 0.6, which indicated that the variables had good explanatory power for their underlying constructs, and the model similarly met the acceptable criterion in terms of convergent validity.

Table 2 Results of convergent validity and combined reliability test for each dimension

Path relationship			Estimate	AVE	CR
Organisational	<---	Organisational	0.809	0.66	0.906
Organisational	<---	Organisational	0.825		
Organisational	<---	Organisational	0.803		
Organisational	<---	Organisational	0.817		
Organisational	<---	Organisational	0.808		
Work Attitude4	<---	Work Attitude	0.779	0.657	0.885
Work Attitude3	<---	Work Attitude	0.807		
Work Attitude2	<---	Work Attitude	0.841		
Work Attitude1	<---	Work Attitude	0.814		
psychological	<---	psychological	0.795		
psychological	<---	psychological	0.794	0.638	0.898
psychological	<---	psychological	0.808		
psychological	<---	psychological	0.836		
psychological	<---	psychological	0.76		
Work autonomy 3	<---	Work autonomy	0.829	0.703	0.877
Work autonomy 2	<---	Work autonomy	0.89		
Work autonomy 1	<---	Work autonomy	0.794		
sense of economic	<---	sense of economic	0.819	0.721	0.928
sense of economic	<---	sense of economic	0.865		

sense of economic	<---	sense of economic	0.861		
sense of economic	<---	sense of economic	0.841		
sense of economic	<---	sense of economic	0.859		
Life Satisfaction3	<---	Life Satisfaction	0.82		
Life Satisfaction2	<---	Life Satisfaction	0.859	0.679	0.863
Life Satisfaction1	<---	Life Satisfaction	0.791		
Employee	<---	Employee	0.762		
Employee	<---	Employee	0.75	0.560	0.836
Employee	<---	Employee	0.739		
Employee	<---	Employee	0.743		

In assessing the discriminant validity of the model, we used the method of calculating and comparing the square root of the Average Variance Extracted (AVE) of each latent variable with the correlation coefficients between its counterpart variables. Based on the data presented in Table 3, we observed a remarkable phenomenon: the AVE square root values of all latent variables significantly exceeded the correlation coefficients between them and the other variables. As shown in Table 3, this finding strongly supports that our model excels in discriminant validity.

Table 3 Correlation coefficients between AVE and variables

	Organisational identity	Work Attitude	psychological health	Work autonomy	sense of economic coercion	Life Satisfaction	Employee Happiness
Work Attitude	0.364						
psychological health	0.386	0.358					
Work autonomy	0.412	0.403	0.497				
sense of economic	-0.256	-0.225	-0.377	-0.317			
Life Satisfaction	0.441	0.4	0.551	0.519	-0.388		
Employee Happiness	0.52	0.481	0.659	0.775	-0.427	0.674	
AVE square	0.812	0.811	0.799	0.838	0.849	0.824	0.748

5.2 Common method deviation tests

Co-methodological bias test The life satisfaction, work attitudes, work autonomy, organisational identity, economic coercion, mental health status, and employee well-being of this Chinese tabular question study are all self-reported in nature. This will cause homoscedastic error to the experimental survey. In order to reduce the impact of homoscedastic error on the experimental survey, the experiment was tested by using the following three methods(35). Firstly the questionnaires filled out by the survey sample were measured anonymously using multiple time points (different locations to go to the research), response points were set for questions, and the questions were cross-arranged(36). Secondly, the test was carried out by unrotated principal component analysis of all the question items, and it was found that a total of six factors were extracted, which cumulatively explained 71.743% of the total variance, and the first unrotated principal component explained only 35.27% of the variance of the variance, which did not exceed the critical value of 50%. CFA analysis was further used due to the possible flaws of the Harman one-factor method(37). The results of the measured variable constructs ($\chi^2 / df = 1.605$, CFI = 0.976, TLI = 0.972, IFI = 0.976, NFI = 0.938, RMSEA = 0.033) turned out to be significantly better than the one-way results ($\chi^2 / df = 13.06$, CFI = 0.483, GFI = 0.496, TLI = 0.444, IFI = 0.485, NFI = 0.465, RMSEA = 0.16). The final test was performed using the non-measurable latent factor method. The results obtained ($\chi^2 / df = 1.409$, CFI = 0.985, GFI = 0.938, TLI = 0.981, IFI = 0.985, NFI = 0.950, RMSEA = 0.030) found that the results using the measured latent factors were comparable to those of the measured life satisfaction, work attitudes, job autonomy, organisational identity, economic duress, psychological well-being, and employee happiness(38). health status, employee well-being between the conceptualisation results only very small optimisation, the results of measuring the latent factor CFI than the hypothetical model only improved by 0.009 below the standard of 0.050, which indicates that this paper's common method variation problem has been effectively controlled, and that the problem of covariance did not have a serious impact on the results of the study.

5.3 Hypothesis testing analysis

After constructing the measurement model and verifying its reliability and validity, the model was tested by path coefficients with p-values with the help of SPASS software. As Table 4 and Figure 3 visualise the relevance and results of this test(39).

Table 4 Variable correlations

Variable	Employee Happiness	Organisational identity	Work Attitude	psychological health	Work autonomy	sense of economic coercion	Life Satisfaction
Employee Happiness	1						
Organisational identity	.451**	1					
Work Attitude	.416**	.329**	1				
psychological health	.569**	.348**	.318**	1			
Work autonomy	.659**	.364**	.352**	.436**	1		
sense of economic	-.377**	-.235**	-.205**	-.342**	-.284**	1	
Life Satisfaction	.566**	.394**	.348**	.479**	.452**	-.345**	1

* 95 per cent confidence level ** 99 per cent confidence level *** 99.9 per cent confidence level

Specifically, in the process of green transformation of enterprises. Employees' life satisfaction ($\beta = 0.381$, $p < 0.001$), has a significant positive effect on work attitude. Work attitude ($\beta = 0.203$, $p < 0.001$) had a significant positive effect on employee well-being, a finding that strongly supports our hypotheses H1 and H2. further analysed, work autonomy ($\beta = 0.218$, $p < 0.001$) had a significant positive effect on organisational identity, organisational identity ($\beta = 0.228$, $p < 0.001$) showed a positive effect on Employee Happiness showed a positive effect, while Employee Economic Coercion ($\beta = -0.412$, $p < 0.001$) showed the opposite result on Employee Mental Health. The level of employee mental health presents a positive effect on employee well-being proves the correctness of hypotheses H3, H4, H5, and H6.

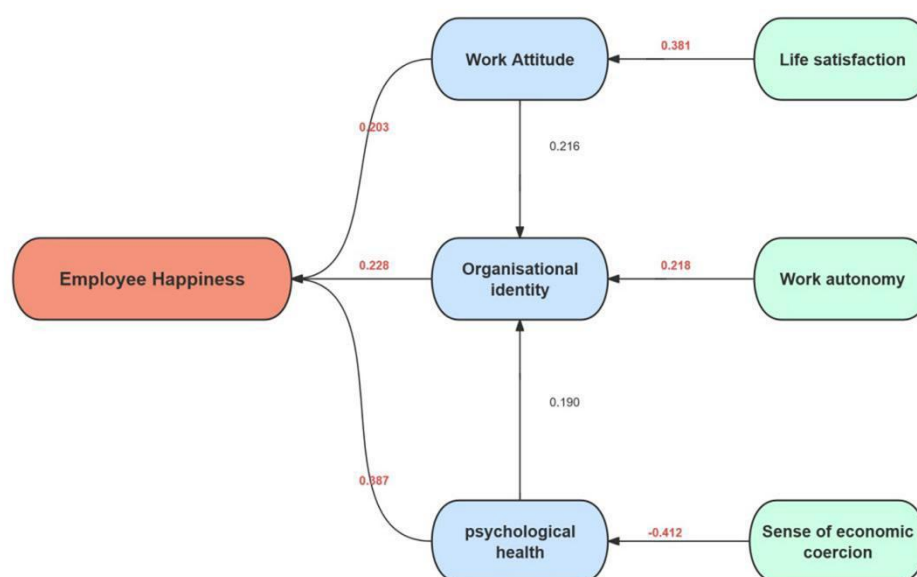


Figure 3 Relationship between the effects of the factors of the structural model

In addition, our study also found that both employee work attitude ($\beta = 0.216$, $p < 0.001$) and employee mental health ($\beta = 0.190$, $p < 0.001$) showed a significant positive effect on organisational identification, which supports hypotheses H7 and H8. In terms of the explanatory power of the model, the explanatory power of the latent variables ranged from 0.4 to 0.5, which indicates that our model demonstrated high validity in explaining these latent variables. The experiment followed up by exploring the potential impact of age factor on employees' well-being in the process of employees' corporate transformation.

5.4 Qualitative comparative analysis of fuzzy sets

In exploring the impact of the corporate green transformation process on employee well-being, this study selected a number of antecedent conditions, including age, organisational identity, work attitudes, mental health status, and economic coercion. The selection of these variables is based on the support of existing literature and theoretical models. Together, they constitute complex behaviours that affect employee well-being. Analyses using the fsQCA approach first require calibration of the selected antecedent conditions in order to transform continuous variables into affiliation scores suitable for fuzzy set analysis. This process follows the 'three-value calibration method' proposed by Ragin, in which three thresholds of 5% (not at all), 50% (moderately) and 95% (completely) are selected to define the fuzzy sets of the variables, depending on their distribution(40). The age variable was calibrated under 20 years of age calibrated

at 0, 20-29 years of age calibrated at 0.25, 30-39 years of age calibrated at 0.50, 40-49 years of age and above calibrated at 0.75, 50 and above years of age calibrated at 1(41). Through the calibration process described above, each of the antecedent conditions was transformed into the form of a fuzzy set that is suitable for fsQCA analysis. In the analytical framework of this study, the consistency scores of all the variables involved did not reach the critical threshold of 0.9, a finding that suggests that no single antecedent condition alone can directly and decisively influence employee well-being(42). As shown in table 4.

Table 4 Conditional necessity analysis

Variable	Consistency	Coverage
age	0.821	0.619
~age	0.754	0.680
Organisational identity	0.787	0.777
~Organisational identity	0.441	0.537
Work Attitude1	0.794	0.746
~Work Attitude1	0.430	0.558
psychological health	0.799	0.810
~psychological health	0.425	0.502
sense of economic coercion1	0.573	0.582
~sense of economic coercion1	0.662	0.779

In exploring the structure of multidimensional antecedent variables of employee happiness in the context of corporate green transformation, as shown in Table 5. In order to explore the antecedent variables of employee happiness and their interrelationships more comprehensively, we used an experimental intermediate scheme in the form of ● (present) and ⊗ (absent) visualisations(43). First, we focus on histogram 1, which highlights the centrality of good mental health and identification with the organisation to employees' enhanced well-being. Histogram 2 reveals how, in the absence of direct organisational identification, firms can improve employee well-being by developing positive incentives and enhancing mental health counselling for employees to stimulate positive work attitudes. This suggests that companies need to focus on improving incentives and providing mental health services in addition to shaping organisational culture and fostering a

sense of identity when promoting green transformation. Subgroups 3, 4 and 5, on the other hand, collectively reveal the impact of economic stress on employee well-being. In these subgroups, despite differences in organisational identity, work attitudes and mental health engagement, a common feature is that employees have higher levels of well-being when they are free from feelings of economic duress. This reflects the fundamental role of economic factors in employee well-being. When employees' basic needs are met and they do not have to worry about making ends meet, they are more likely to focus their attention on personal growth, career development, etc., and thus experience higher levels of happiness. Groups 3, 4 and 6 also show that age has a relatively small impact on employee happiness. This does not mean that the age factor is unimportant to employee well-being, but suggests that other factors (e.g., organisational identity, work attitude, mental health, etc.) may be more critical in specific situations (e.g., during the process of corporate green transformation).

Table 5 Analysis of Employee Happiness in Green Transformation of Enterprises

variable	Enterprise Green Transformation Employee Happiness					
	Configurat ion 1	Configurat ion 2	Configurat ion 3	Configurat ion 4	Configurat ion 5	Configurati on 6
age			⊗	⊗		⊗
Organisational identity	●		●		●	●
Work Attitude		●			●	●
psychological health	●	●		●		
sense of economic coercion			⊗	⊗	⊗	
Consistency	0.885	0.865	0.913	0.921	0.911	0.896
Original Coverage	0.667	0.662	0.453	0.470	0.472	0.545
Unique Coverage	0.052	0.055	0.009	0.019	0.018	0.030
Overall PRI			0.654			
Overall Coverage			0.860			
Overall Consistency			0.806			

The overall results found that the overall coverage of employee well-being in green transformation of enterprises is as high as 0.860, which means that the conditional grouping statuses identified by the survey are able to explain most of the situations affecting employee well-being relatively well. Meanwhile, the

overall consistency of 0.806 is also at a high level, further validating the validity and explanatory power of the model. The condition grouping identified through the fsQCA method can provide a new perspective on employee happiness in the context of corporate green transformation. By analysing the different subgroups in Table 5, it is found that factors such as organisational identity, psychological health, and sense of economic duress play an important role in influencing employee well-being. Therefore, when developing green transformation strategies, enterprises need to fully consider the economic and psychological pressure of employees to avoid excessive economic pressure, which affects employee well-being and, consequently, the transformation of the enterprise.

6 Discussion

In the complex process of corporate green transformation, the impact of organisational identity, psychological health and sense of economic stress on employee well-being cannot be ignored. This study found that when employees develop a strong sense of identification with the organisation and maintain good psychological health, their sense of well-being increases significantly. This sense of identity not only helps to enhance employees' sense of belonging and loyalty, but also stimulates their work enthusiasm and creativity, thus providing a strong intrinsic motivation for the organisation's green transformation.

The negative impact of economic coercion on employee happiness is also significant. When employees face greater economic pressure, their level of happiness will decline significantly, and may even affect work enthusiasm and creativity. Therefore, when enterprises formulate green transformation strategies, they must fully consider the economic situation of their employees, and reduce their economic pressure and enhance their sense of well-being and work motivation through measures such as reasonable compensation systems, welfare benefits and career development opportunities.-

7 Conclusions

This study dissects how multiple factors such as employee life satisfaction, work attitude, organisational identity, economic coercion and psychological health work together to contribute to employee well-being in the context of corporate green transformation, and verifies a series of hypotheses through rigorous data analysis. It is found that employees' life satisfaction is an important driver of work attitudes, and this positive association in turn significantly enhances employees' well-being. This suggests that optimising employees' living conditions and

stimulating their positive work attitudes are key paths to enhancing employee happiness in the journey of corporate green transformation. Meanwhile, organisational identification also enhances employee happiness. Economic coercion, on the other hand, becomes a heavy burden on employee mental health. And employee mental health is an indispensable part of employee happiness enhancement. Under the analysis of QCA qualitative research, organisational identity and psychological health are highlighted as the core elements to enhance employee happiness. Therefore, when promoting green transformation, enterprises should be committed to creating a positive organisational atmosphere to deepen employees' belonging and identity, and at the same time, provide the necessary psychological health support to help employees effectively cope with the challenges and pressures of the transition period.

8 Conflict of Interest

This study was conducted using a questionnaire. All participation was voluntary. The experiment was conducted in strict adherence to the principles of academic integrity to ensure the independence, objectivity and scientific validity of this study without any conflict of interest.

9 Author Contributions

Yi Ran, Kong Fande, Li Xinyu and Liu Qi-jia, as the authors of the article, participated in the writing of the original manuscript in strict accordance with the regulations, and critically reviewed and revised the manuscript.

1. Leal Filho W, Trevisan LV, Rampasso IS, Anholon R, Dinis MAP, Brandli LL, et al. When the alarm bells ring: Why the UN sustainable development goals may not be achieved by 2030. *Journal of Cleaner Production*. 2023;407:137108.
2. Martínez-Falcó J, Sánchez-García E, Marco-Lajara B, Millán-Tudela LA. Enhancing employee wellbeing and happiness management in the wine industry: unveiling the role of green human resource management. *BMC psychology*. 2024;12(1):203.
3. Nori R, Zucchelli MM, Palmiero M, Piccardi L. Environmental cognitive load and spatial anxiety: What matters in navigation? *Journal of Environmental Psychology*. 2023;88:102032.
4. Van HV, Hoai TT, Minh NN, Nguyen NP. Green transformational leadership and green mindfulness as contributors to green innovation and environmental performance: Evidence from manufacturing firms in Vietnam. *Sage Open*. 2023;13(3):21582440231193919.
5. Rivera-Vargas P, Oyanedel JC. Subjective well-being in online and mixed educational settings. *Frontiers Media SA*; 2023. p. 1152373.
6. Monteiro E, Joseph J. A review on the impact of Workplace Culture on Employee Mental Health and Well-Being. *International Journal of Case Studies in Business, IT and Education (IJCSBE)*. 2023;7(2):291-317.
7. Yang Y, Obrenovic B, Kamotho DW, Godinic D, Ostic D. Enhancing Job Performance: The Critical Roles of Well-Being, Satisfaction, and Trust in Supervisor. *Behavioral Sciences*. 2024;14(8):688.
8. Ilies R, Schwind KM, Heller D. Employee well-being: A multilevel model linking work and nonwork domains. *European journal of work and organizational psychology*. 2007;16(3):326-41.
9. Sonnentag S. Dynamics of well-being. *Annu Rev Organ Psychol Organ Behav*. 2015;2(1):261-93.
10. Ogunbode CA, Doran R, Hanss D, Ojala M, Salmela-Aro K, van den Broek KL, et al. Climate anxiety, wellbeing and pro-environmental action: correlates of negative emotional responses to climate change in 32 countries. *Journal of Environmental Psychology*. 2022;84:101887.
11. Gabriel AS, Diefendorff JM, Chandler MM, Moran CM, Greguras GJ. The dynamic relationships of work affect and job satisfaction with perceptions of fit. *Personnel Psychology*. 2014;67(2):389-420.
12. Schultz PP, Ryan RM, Niemiec CP, Legate N, Williams GC. Mindfulness, work climate, and psychological need satisfaction in employee well-being. *Mindfulness*. 2015;6:971-85.
13. Hameed I, Ijaz MU, Sabharwal M. The impact of human resources environment and organizational identification on employees' psychological well-being. *Public Personnel Management*. 2022;51(1):71-96.
14. Onesti G. Exploring the impact of leadership styles, ethical behavior, and organizational identification on workers' well-being. *Administrative Sciences*. 2023;13(6):149.
15. Kinowska H, Sienkiewicz ŁJ. Influence of algorithmic management practices on workplace well-being—evidence from European organisations. *Information Technology & People*. 2023;36(8):21-42.

16. Erving CL, McKinnon II, Thomas Tobin CS, Van Dyke ME, Murden R, Moore RH, et al. Black Women as Superwomen? The Mental Health Effects of Superwoman Schema, Socioeconomic Status, and Financial Strain. *Social Problems*. 2024;spae007.
17. Salunkhe U, Rajan B, Kumar V. Understanding firm survival in a global crisis. *International Marketing Review*. 2023;40(5):829-68.
18. Howard J, Houry D. Protecting the Mental Health and Well-Being of the Nation's Health Workforce. *American Public Health Association*; 2024. p. 137-41.
19. Judge TA, Watanabe S. Another look at the job satisfaction-life satisfaction relationship. *Journal of applied psychology*. 1993;78(6):939.
20. Troth AC, Rafferty AE, Jordan PJ. Emotions and wellbeing at work: A multilevel perspective. *The Sage handbook of organizational wellbeing*. 2021:56-71.
21. Vijayalakshmi V, Bhattacharyya S. Emotional contagion and its relevance to individual behavior and organizational processes: A position paper. *Journal of Business and Psychology*. 2012;27:363-74.
22. Sarmah P, Van den Broeck A, Schreurs B, Proost K, Germeys F. Autonomy supportive and controlling leadership as antecedents of work design and employee well-being. *BRQ Business Research Quarterly*. 2022;25(1):44-61.
23. Fürstenberg N, Alfes K, Kearney E. How and when paradoxical leadership benefits work engagement: The role of goal clarity and work autonomy. *Journal of Occupational and Organizational Psychology*. 2021;94(3):672-705.
24. Kao K-Y, Hsu H-H, Thomas CL, Cheng Y-C, Lin M-T, Li H-F. Motivating employees to speak up: Linking job autonomy, PO fit, and employee voice behaviors through work engagement. *Current Psychology*. 2021:1-15.
25. Elsetouhi AM, Mohamed Elbaz A, Soliman M. Participative leadership and its impact on employee innovative behavior through employee voice in tourism SMEs: The moderating role of job autonomy. *Tourism and Hospitality Research*. 2023;23(3):406-19.
26. Dippel C, Greif A, Treffer D. Outside options, coercion, and wages: Removing the sugar coating. *The Economic Journal*. 2020;130(630):1678-714.
27. Taheri RH, Miah MS, Kamaruzzaman M. Impact of working environment on job satisfaction. *European Journal of Business and Management Research*. 2020;5(6).
28. Niebuhr F, Borle P, Börner-Zobel F, Voelter-Mahlknecht S. Healthy and happy working from home? Effects of working from home on employee health and job satisfaction. *International journal of environmental research and public health*. 2022;19(3):1122.
29. Park J, Joshanloo M. Power or opportunity? Perceived inequality on life satisfaction explained by reduced trust in South Korea. *Asian Journal of Social Psychology*. 2024.
30. Ogunbode CA, Pallesen S, Böhm G, Doran R, Bhullar N, Aquino S, et al. Negative emotions about climate change are related to insomnia symptoms and mental health: Cross-sectional evidence from 25 countries. *Current Psychology*. 2023;42(2):845-54.
31. Chen T, Wu Z. How to facilitate employees' green behavior? The joint role of green human resource management practice and green transformational leadership. *Frontiers in psychology*. 2022;13:906869.

32. Setiadi B, Kraugusteeliana K, Risdwiyanto A, Bakri AA, Arief I. The Application of Delone and Mclean Framework to Analyze the Relationship Between Customer Satisfaction and User Experience of Mobile Application. *Jurnal Sistim Informasi Dan Teknologi*. 2023;84-9.
33. Al Nima A, Cloninger KM, Lucchese F, Sikström S, Garcia D. Validation of a general subjective well-being factor using classical test theory. *PeerJ*. 2020;8:e9193.
34. Jeyaraj A. DeLone & McLean models of information system success: Critical meta-review and research directions. *International Journal of Information Management*. 2020;54:102139.
35. Weziak-Bialowolska D, Lee MT, Cowden RG, Bialowolski P, Chen Y, VanderWeele TJ, et al. Psychological caring climate at work, mental health, well-being, and work-related outcomes: Evidence from a longitudinal study and health insurance data. *Social Science & Medicine*. 2023;323:115841.
36. Wulff JN, Sajons GB, Pogrebna G, Lonati S, Bastardoz N, Banks GC, et al. Common methodological mistakes. *The Leadership Quarterly*. 2023;34(1):101677.
37. Song L, Wang Y, Zhang Q, Yin J, Gan W, Shang S, et al. The mediating effect of resilience on mental health literacy and positive coping style among Chinese empty nesters: a cross-sectional study. *Frontiers in Psychology*. 2023;14:1093446.
38. Zheng G, Zhang Q, Ran G. The association between academic stress and test anxiety in college students: The mediating role of regulatory emotional self-efficacy and the moderating role of parental expectations. *Frontiers in Psychology*. 2023;14:1008679.
39. Dienes Z. Using Bayes to get the most out of non-significant results. *Front Psychol*. 2014;5:781.
40. Amenta E, Caren N, Yuan W. How to analyze the influence of social movements with QCA: Combinational hypotheses, Venn diagrams, and movements making big news. *Methodological Advances in Research on Social Movements, Conflict, and Change*. 47: Emerald Publishing Limited; 2023. p. 187-213.
41. Heredia-Portillo O, Armas-Arévalos E. Explaining the international opportunity recognition with the qualitative comparative analysis: The role of dynamic capabilities self-efficacy and global mindset. *Entrepreneurial Business and Economics Review*. 2023;11(1):29-56.
42. Renmans D. The Resq approach: theory building across disciplines using realist evaluation science and QCA. *International Journal of Social Research Methodology*. 2023;26(4):469-82.
43. Braunschweiger D, Ingold K. What drives local climate change adaptation? A qualitative comparative analysis. *Environmental Science & Policy*. 2023;145:40-9.