



The Influence of Four-Box Business Model on Employee Engagement in Post-COVID-19: Company Performance as the Moderator

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Abstract

This research investigates the influence of four-box business model and its components on employee engagement, in accordance with the theoretical foundation of organizational commitment theory. The moderating effect of company performance on the relationship between four-box business model and employee engagement was also determined. This study employed quantitative methodology by gathering data from targeted Chinese SMEs via questionnaire during the post-COVID-19 period. Descriptive study and structural equation modelling were performed on 238 qualified data by using SPSS and AMOS software. This research reveals that employee engagement is highly impacted by four-box business model and its components. The components of four-box business model, i.e. customer value proposition, profit formula, key resources and key processes all show significant effect on employee engagement. Besides, company performance positively moderates the impact of four-box business model on employee engagement. However, on single factor level, the company performance only moderate on the relationship between key resources, key processes and employee engagement. As a conclusion, this research recommended that company management to employ the four-box business model on its operation and extensively pay attention to the impact of model on varying company performance.

Keywords Four-box business model · Employee engagement · Company performance · Organizational commitment theory

JEL Classification M10 General

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Introduction

The COVID-19 pandemic had a massive global impact (Khatib & Nour, 2021; Lee, 2022; Mishra et al., 2020a, b; Pourmansouri et al., 2022), although it has been declared over, there are still significant consequences in the aftermath of COVID-19. For example, Zhang et al. (2023) discovered that many companies face severe financial constraints as a result of the COVID-19 shock, which has a negative impact on company performance. According to Gharehgozli and Lee (2022), the inflation shock since COVID-19 is not transitory, but rather persistent. Altman (2022) revealed that, despite national policies, employment in South Africa may only recover to pre-COVID-19 level by 2024–2026. As a result, the majority of businesses must still find ways to recover and grow while dealing with the difficulties that have arisen. For example, to deal with the impact of a pandemic, supplying firms focused on a short-term demand–supply strategy after assessing the impact of demand and adding additional channels for communication with customers (Butt, 2021). Some industries, such as tourism, hospitality and stock companies, used various corporate social responsibility initiatives to mitigate the negative impact of the COVID-19 pandemic (Lee, 2022; Qiu et al., 2021). Even after the relevant restriction was lifted in the post-COVID-19 period, small businesses continued to operate from home in order to cut costs and maximise profits (Zhang et al., 2021). Meanwhile, the perception of cash holdings against uncertainties and crises increased following the pandemic, as cash holdings have a positive effect on firm performance that is more pronounced when the overall market condition is poor (Zheng, 2022).

With changes in the global work environment, particularly recent and on-going recessions in many economies, many organisations have reduced their workforces (Kessler, 2013; Lee, 2022). During the COVID-19 pandemic, most businesses survived primarily by cutting costs by laying off employees. The phenomenon of significant income declines and increased unemployment caused by COVID-19 had a significant impact on employee engagement because employees were afraid of losing their jobs someday (Mishra et al., 2020a, b). It was critical to understand the employees' stress situations in order to avoid burnout and the negative impact on the company during the pandemic. It is more important now, in the aftermath of COVID-19 for company management to stimulate and promote current employees' engagement under the current business model in order to align with the goals of the company and do their best to achieve the goals. As a result of the COVID-19 pandemic, the labour market has tightened and there is a labour shortage (Causa et al., 2022). Furthermore, Gualano et al. (2022) discovered that it is necessary to accommodate the work situation in order to facilitate the workers' transition back to employment after COVID-19 pandemic.

During the COVID-19 difficult time, many studies had focused on the topics of business model. According to Turoń and Kubik (2021), many mobility industry companies adapted their business model with innovative business practices during the COVID-19 pandemic. According to Carletti et al. (2020), the pandemic brought new challenges, such as emphasising on the digitalisation,

which could lead to significant changes in the banking industry's business model. Bauer et al. (2020) revealed the innovative business models that emerged in the aviation industry to gain more businesses during the COVID-19 period. Breier et al. (2021) also demonstrated that business model innovation can help hospitality businesses overcome a crisis and restart while the COVID-19 pandemic was ongoing and after it had ended. According to Li et al. (2022), the transformation of a business model can play a critical role in how a company responds to problems and maintaining stability after COVID-19. Study on four-box business model was sparse except that it was served as an operational guide (Waite & Arnett, 2020). Furthermore, research on the four-box business model's effect on employee engagement with moderator is lacking, which is warranted a thorough investigation for the post-Covid-19.

Problem Statement

Although the pandemic has now become endemic, there are still serious consequences of subsequent effects in post-COVID-19, such as many employees still fear not only workforce reductions but also salary cuts due to the pandemic's long-term impact, especially the employees in SMEs which absorb the majority of workforces. For example, Del Giudice et al. (2021) mentioned in accordance to recent statistics, SMEs make up roughly 99% of businesses in China and nearly two-thirds of all private businesses in the USA, with SMEs accounting for about 40% of GDP in both countries. However, in contrast to employers who laid off workers, many employees quit and left their jobs voluntarily during and after COVID-19, resulting in a high turnover rate and a loss of talent-staff (De Smet et al., 2021, 2022). Employers used to solve this type of problem by providing better pay, benefits and perks as extrinsic motivation which had a significant effect on employee engagement (Engidaw, 2021). However, this traditional solution is no longer adequate for retaining and regaining talent (De Smet et al., 2021, 2022). While improving and increasing employee engagement is one of the most effective strategies for attracting and retaining employees to benefit the company, management can use organisational commitment theory to understand and predict employee engagement situations and then choose more appropriate solutions. Furthermore, changing conditions of company performance may cause a change in some mechanism, such as disrupting the normal operation of a business model, which may eventually lead to a change in other related aspects, such as employee engagement. In this case, it is critical to learn how the business model functions influence employee engagement since smooth operation of a business affects all aspects of the company such as changes in employee engagement. As a result, it is critical to experiment how the business model affects employee engagement and whether that impact changes in different scenarios of company performance after COVID-19.

Research Problem, Objectives and Significances

The main problem in this study is to determining the relationships between the four-box business model and each of its contents on employee engagement in the

presence of company performance as a moderator. Therefore, the specific objectives of this research are to identify the relationships between the four-box business model, as well as the content of each box, and employee engagement and to determine whether company performance moderates these relationships.

This study is expected to have theoretical and practical implications. It is expected to enrich the literature and close the relevant research gaps. It is also expected that management pay attention to the operation situation of their existing business model, which influences employee engagement, and so on and that they know and use relevant management knowledge, such as organisational commitment theory, to predict and promote employee engagement in time to keep companies running smoothly and profitably.

Literature Review and Hypothesis Development

This section primarily contains the theoretical foundation, literature reviews on employee engagement, four-box business model and hypotheses and the conceptual model for this research.

Organizational Commitment Theory

The organisational commitment theory serves as the theoretical foundation for this study. This theory is a well-known management theory that first appeared in the 1960s and has since become a popular employee prediction tool in recent decades (Kessler, 2013; Al-Jabari & Ghazzawi, 2019). Although the definition of organisational commitment is still evolving, its theory consists of three major components: affective, continuous and normative commitment (Kessler, 2013; Al-Jabari & Ghazzawi, 2019; Nagpal, 2022). Affective commitment focuses on the psychology-positive feelings of employees towards the organisation; continuance commitment focuses on the cost–benefit analysis of an employee and normative commitment focuses on employees' feelings of obligation to stay with the organisation (Kessler, 2013; Al-Jabari & Ghazzawi, 2019; Nagpal, 2022). Angle and Perry (1983) discovered the two factors that lead to organisational commitment. One factor is an organisational member's actions and personal characteristics (intrinsic aspect); another factor is the organisation itself, which reflects a member's appreciation for the organisation's provision of resources that meet critical needs (extrinsic aspect). It was found that extrinsic factors are more strongly linked to organisational commitment than intrinsic factors in that study.

When organisational commitment is determined, it helps predict employee engagement. Practitioners used organisational commitment interventions, particularly the affective commitment component, to recruit, hold on to and nurture talent, as well as to improve worker performance (Mercurio, 2015). Employee engagement and organisational commitment have a significant positive relationship (Aggarwal et al., 2022; Linggiallo et al., 2021). Rameshkumar (2020) and Nagpal (2022) confirmed that employee engagement is positively related to organisational commitment. Pitaloka and Putri (2021) confirmed that employee engagement and organisational commitment both had a significant impact on performance.

One fundamental function of company management is to keep things running smoothly and to improve performance (Pourmansouri et al., 2022). Modern managers can benefit greatly from a better understanding of commitment theory. Managers, for example, can characterise employees based on gaining valuable practical information about employees based on varying levels of employee engagement; managers may be better able to motivate employees through tangible incentives (e.g. promise of pay raises) and increase their contribution to the organisation. During difficult times, particularly during and after the COVID-19 pandemic, company management can promote employees and maintain their engagement to benefit company performance by practising and applying relevant knowledge of organisational commitment theory. This organisational commitment theory adequately explains the relationship between the four-box model of business and employee engagement, as well as the role of company performance as a moderator.

Employee Engagement

The current business landscape has been changing as a result of the global COVID-19 pandemic. Company relevant managers are creatively coming up with innovative and effective ways to promote employee engagement (EE) during this difficult time (Chanana & Sangeeta, 2021). Companies having nightmares on managing the employees as the pandemic open the floodgates of employees' demands at present and future. From companies' perspectives, employee engagement is all about them to be physiological and physical existence of executing an organizational role. Employee engagement is typically described as a mental state, or a way of being, that links a worker's commitment, satisfaction and effort at work (Prasadjaningsih & Alexandra, 2022; Sugandha, 2022). This state of being is bodily, psychological and emotional (Chanana & Sangeeta, 2021; Davis & Van der Heijden, 2023; Lemon & Boman, 2022).

According to Chanana and Sangeeta (2021), an engaged employee is concerned about their work and the company's performance (Hooi & Chan, 2023), and they always want to believe that their efforts and hard work are making a difference; employee engagement also leads to increased productivity in the workplace, which results in higher customer satisfaction and positive increases in sales and profit for enterprises (Akinkunmi & Balogun, 2023; Riyanto et al., 2021). According to Pass and Ridgway (2022), employers have had to reconsider how they interact with their scattered employees as a result of the workers' need to make quick and significant adjustments to their working lives. Similarly, companies nowadays should actively look forward to exceeding employee expectations and making a difference in the employee's performance, which directly affects the success of the companies. Using creative, resilient and flexible approaches, firms have expedited automation and digitization programs while heavily utilizing HR departments (Chan et al., 2021; Zahoor et al., 2022). Even while some firms have prospered, these new methods of work are having an impact on physical capacity labour, with women and younger workers being disproportionately affected due to the unprecedented event.

Rewards and recognition are feasible ways to promote employee engagement (Madhani, 2020). While during the pandemic, companies had to face various circumstances to bring about the engagement of employees where many companies keep their employees engaged by providing opportunities for professional growth during the lockdown, such as resources like TED Talks, webinars with industry experts, books, online courses and content that was created by themselves. At the same time, a number of businesses actively encourage their workers and do what they can to calm their fears in an effort to keep them upbeat and invested in their work (Goswami, 2020). In spite of its flaws, post-COVID-19 has developed as a result of human experience, and many insights have been gained. One of these lessons is how important it is to increase employee engagement at work (Andrić et al., 2023). Consequently, the businesses became ambidexterity capable globally where they were coping up the business during COVID-19 and adjusting to the new-norm of business world at post-COVID-19.

According to Zhu et al., (2023a, b), to better understand the connection between employee engagement and the performance of a company, additional research is required in adverse circumstances such as the COVID-19 epidemic.

Four-box Business Model, Employee Engagement

Although there is no universally accepted definition of “business model,” it can be thought of as a representation of the means by which a company produces and distributes value to its clients (Johnson & Euchner, 2018; Johnson & Lafley, 2010; Ruddin et al., 2021; Waghmare & Golhar, 2017). Johnson’s four-box business model (FbBM) has a solid foundation in business practise (Sinha et al., n.d.) because this interdependent four-box business model framework is a powerful synthesis of a business model. This four-box business model, as the name implies, primarily includes four key elements: customer value proposition (CVP), profit formula (PF), key resources (KR) and key processes (KP) (Johnson & Lafley, 2010; Christensen et al., 2016; SK, 2020; Ruddin et al., 2021; Sabri et al., 2023), which makes the sources of a company’s current success explicit.

Most leaders, however, do not fully comprehend their company’s existing business model, the premise underlying its development, its natural interdependencies or its strengths and weaknesses when seeking new growth (Johnson & Lafley, 2010; Johnson et al., 2008). Companies, on the other hand, operate under the business model or the idea behind a business model. Successful business models are often extremely effective tools for improving execution and performance (Affes & Affes, 2022; Magretta, 2002). While in the post-COVID-19 era, it is critical to understand the existing business model. When applied methodically, this four-box business model will provide company with a road map to new opportunities for innovation, transformational growth and renewal that company never thought possible (Jbara & Darnton, 2019; Johnson & Lafley, 2010).

Previous studies on the four-box business model concentrated on its definition, composition (Fiel, 2013), its applications (Boshnyaku, 2022; Waite & Arnett, 2020;

Wan, 2015), as well as its moderating effect (Zhu et al., 2023a). However, empirical research on the four-box business model and its impact on employee engagement warranted an investigation. As a result, the following hypothesis is proposed.

H1. Four-box business model and employee engagement are positively correlated.

In addition to the existing research on the impact of the four-box business model on employee engagement, there is a limited amount of research available on the specific influence of each component of the four-box business model (customer value proposition, profit formula, key resources and key processes) on employee engagement. The customer value proposition is a strategic approach aimed at facilitating customers in accomplishing significant tasks, encompassing both products and services (Johnson et al., 2008). The categorization of the CVP was delineated into three distinct types, namely supplier-determined, transitional, and mutually determined variants (Payne et al., 2017, as cited in Rintamäki & Saarijärvi, 2021). Regardless of the specific types of customer value propositions (CVP) offered across various industries, the primary objective remains consistent: to attain a competitive advantage and achieve business success (Annarelli et al., 2020; Mishra et al., 2020a, b; Zhang et al., 2019). Zhu et al. (2023b) concurred with the assertion that the customer value proposition has a positive influence on company performance, and the employee engagement moderates the effect. According to Roberts et al. (2015), employee engagement was found to be a significant factor influencing the customer value proposition. The impact of organizations that prioritize customer value on employee engagement has been substantiated by the research conducted by Beukes (2016) and Bapat (2013).

The profit formula is a conceptual framework that elucidates how a company generates value for itself while simultaneously delivering value to the customer. This framework encompasses various components such as revenue and cost structures, among others, as outlined in the financial aspects (Johnson et al., 2008). One of the priorities in a business journal is the profit formula (Christensen et al., 2016). It holds a central position within numerous companies, exemplified by the success of Nespresso coffee company (Matzler et al., 2013). The effective implementation of value capture is a crucial factor in achieving business success. The performance of a company is influenced by its revenue model, which is determined by factors such as the pricing of its products or services and the rate of return on its assets. The management control framework commonly incorporates a strategy that aims to minimize expenses associated with resource acquisition or development, thereby enhancing the organization's profit formula. This approach may also have the unintended consequence of reducing employee engagement, such as through the reduction of training costs (Malik & Rowley, 2015). According to Kreuzer and Tomaschitz (2021), the authors posit that in challenging times, enhancing employee engagement becomes increasingly vital for the survival of companies, surpassing the potential impact of cost reduction on a company's profit formula.

According to Johnson et al. (2008), key resources are crucial assets that contribute to the creation of value for both the customer and the company, resulting in practical and advantageous outcomes. Various types of resources can be identified, including physical resources such as products and equipment, financial resources such as money and intellectual resources such as technology, brands and talents

(Leitão et al., 2013). Various industries and companies acquire a competitive advantage through the utilization of distinct types of key resources. According to the findings of Cooper-Thomas et al. (2018), there was a positive correlation between the level of resources provided by organizations and employee engagement. Lee et al. (2020) conducted research that further corroborated the assertion that resources play a crucial role in fostering employee engagement. According to Adisa et al. (2023), certain stress factors, such as resource reduction or depletion, had a detrimental effect on employee engagement during the COVID-19 pandemic.

The key processes encompass both operational and managerial processes, which enable organizations to competitively deliver value to their customers (Johnson et al., 2008). It is common practice for the KP to be executed concurrently with the KR (Johnson et al., 2008; Meertens et al., 2010). It is imperative to ascertain the fundamental processes that contribute to a company's competitive advantage. In a study conducted by Figurska (2015), it was observed that the efficacy of key processes exhibited an upward trend in instances where employee engagement levels were elevated. According to LaMacchia (2021), the engagement of employees in the IT industry can be enhanced when they actively participate in the decision-making process. Desta et al. (2022) also provided evidence supporting the notion that the implementation of key processes aimed at optimizing the workforce can result in improved employee performance. A study conducted by Zhu et al., (2023a, b) revealed that certain key processes exhibited a negligible negative moderating impact on the relationship between employee engagement and business performance. There is a limited amount of existing research on the effects of the various components of the four-box business model on employee engagement. Therefore, this study posits the subsequent hypotheses.

H1a. Customer value proposition and employee engagement are positively correlated.

H1b. Key resources and employee engagement are positively correlated.

H1c. Key processes and employee engagement are positively correlated.

H1d. Profit formula and employee engagement are positively correlated.

Four-box Business Model, Employee Engagement and Company Performance

There is currently no standard definition of company performance (CP) (Jabbar, 2022; Ouragini & Lakhali, 2023). So far, the definitions of company performance may be abstract, general, less clearly defined (Darabi, 2023; Taouab & Issor, 2019). I prefer to adhere to Lebars and Euske's (2006) definition of company performance, which stated that performance is a set of financial and nonfinancial indicators that provide information on the level of achievement of objectives and results (Taouab & Issor, 2019; Wahyudono, 2023).

Many companies' performance decreased as a result of the COVID-19 impact, which increased management difficulties (Liu et al., 2020; Suryaningrum et al., 2023), although there is evidence showing that companies have good corporate sustainability when they can emphasize employee engagement (Kajtazi et al., 2023). While with unstable performance, some negative effects will arise from

related aspects such as the company's operation not running smoothly and effectively, business model function being hampered, or employee engagement becoming low. These statuses are important indicators that reveal a company's current state and influence its future development, as when a company's performance deteriorates its income and profit decline has a negative impact on many internal areas. It is critical to investigate company performance post-COVID-19. According to the research of Ribeiro-Navarrete et al. (2021) and Truant et al. (2021), business performance can be improved through digitalization, entrepreneurial marketing (Ouragini & Lakhali, 2023), increasing employee engagement (Zhu et al., 2023a), effective implementation of quality management systems (Anggadani et al., 2021; Črv & Markič, 2023) and proper financial management strategies (Salamah, 2023). There are also studies on how business model innovation (BMI) can improve business performance (Nugroho & Fontana, 2023; Nunes & Pereira, 2021). However, after analysing 563 sample data from European SMEs, Latifi et al. (2021) concluded that BMI has no significant impact on company performance. Meanwhile, a study conducted in IT firms by Bhatti et al. (2021) found that BMI had to be a mediator between other factors and business performance, which was supported by Bashir et al. (2023). Salamzadeh et al. (2023) identified the business performance mediated the relationship between BMI and crisis management.

From the foregoing literature review, most previous studies used company performance as a dependent variable. Only one study focused on company performance as a moderator, which was conducted by Alfadhl and Alabdullah (2016), between agency cost and management behaviour determinants. However, there is a scarcity of research on company performance as a moderator between the four-box business model (its components) and employee engagement. Consequently, this study seeks to bridge the gap by incorporating company performance as a moderating variable within the relationship between the four-box business model and its components and employee engagement. As a result, several new hypotheses listed below are proposed for this study.

H2: The four-box business model's relationship with employee engagement is moderated by company performance.

H2a: Customer value proposition's relationship with employee engagement is moderated by company performance.

H2b: Key resources' relationship with employee engagement is moderated by company performance.

H2c: Key processes' relationship with employee engagement is moderated by company performance.

H2d: Profit formula's relationship with employee engagement is moderated by company performance.

Conceptual Model

This study's conceptual model (Fig. 1) is proposed according to the above hypotheses. According to this conceptual model, the independent variables include the content of each box and the four-box business model; the moderating variable is company performance; and the dependent variable is employee engagement.

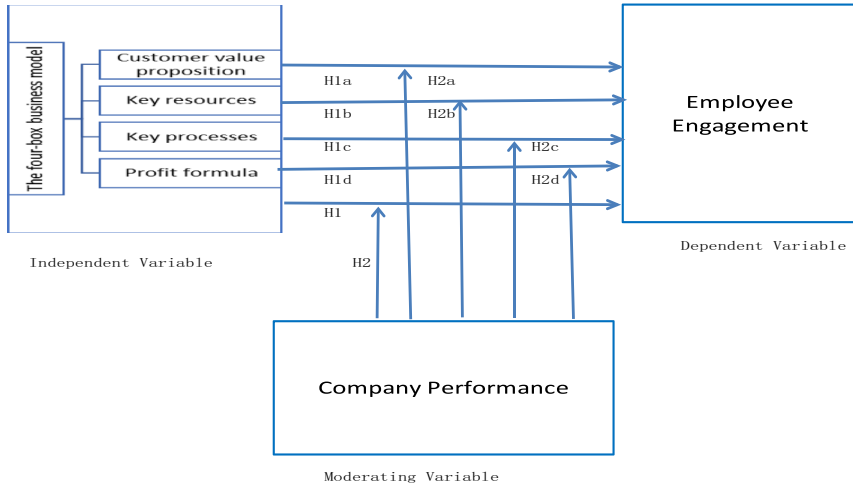


Fig. 1 Conceptual model Source: Developed for research

Methodology and Data

Sample and Data Collection

This paper uses an online method to conduct surveys with a structured questionnaire on Chinese SMEs located in the provinces of Guangdong, Jiangsu and Shandong, whose GDP ranks first to third in China (CHINANEWS.COM, 2020, Jan.; 2021, Jan.; 2021, Apr.). The general and senior managers of those Chinese SMEs are the study's target population. A basic random sampling technique is employed in this study based on the Chinese Qichacha industry list database to randomly select samples. The number of qualified samples determined for this study is about 200 (Hair et al., 2019; cited by Kustiawan et al., 2022). As this study is using the SEM analysis method, the number of data required when using this method must be at least five times the number of questions. Invalid questionnaires with missing values, response gaps and respondents with incorrect job positions were excluded. After screening and all collected data was verified as valid after data collection before April 2023, in the end, there are a total of 238 useful data can be used for analysis.

Variable Measurement

The measurement questions for each variable in this study were mainly derived from relevant popular scales and were adopted or adapted according to previous studies and relevant expert opinions. The scale was rated on a Likert-5 scale used in the structural questionnaire, with 1 representing "strongly disagree" and 5 representing "strongly agree." The variables in this questionnaire are independent, moderating

and dependent. The endogenous construct/dependent variable, employee engagement, was measured using the scale of Quantumworkplace (2021). The exogenous construct/independent variable, the four-box business model, was measured by a weighted average based on the contents of all four boxes. Four-box variables (its components) were measured by using the measurements of Zhao et al. (2013) for the customer value proposition and profit formula variables and Ryan (2013) for key resources and key processes variables. The moderating variable, company performance, was measured using the measurement of Nguyen et al. (2021).

Data Analysis and Results

Covariance-based structural equation modelling analysis was performed in this study using SPSS and version 29 of AMOS software.

The collected data reveal the values of the mode (M), standard deviation (SD), skewness and kurtosis for each variable, as shown in Table 1. The values for four-box business model ($M=4$, $SD=1.106$, skewness = -0.435 , kurtosis = -1.372), for customer value proposition ($M=5$, $SD=1.226$, skewness = -0.490 , kurtosis = -1.341), for key resources ($M=4$, $SD=1.058$, skewness = -0.383 , kurtosis = -1.320), for key processes ($M=4$, $SD=1.141$, skewness = -0.255 , kurtosis = -1.401), for profit formula ($M=5$, $SD=1.168$, skewness = -0.509 , kurtosis = -1.349), for company performance ($M=4$, $SD=1.211$, skewness = -0.434 , kurtosis = -1.418), and for employee engagement ($M=4$, $SD=1.185$, skewness = -0.407 , kurtosis = -1.403). All skewness and kurtosis values fell within the acceptable ranges of ± 1.0 and ± 2.0 , respectively (Hair et al., 2010). Consequently, the data does not deviate from normal distribution.

Measurement Model Assessment

Confirmatory factor analysis was conducted by using the measurement model. Some indicators were deleted after checking modification indices to improve the model fit. The remaining factor loadings for low level constructs and high level constructs are shown separately in Tables 2 and 3.

Table 1 Descriptive statistics

	Valid case	Mode	Std. deviation	Skewness	Std. error of skewness	Kurtosis	Std. error of kurtosis
CP	238	4	1.211	-0.434	0.158	-1.418	0.314
CVP	238	4	1.226	-0.490	0.158	-1.341	0.314
PF	238	5	1.168	-0.509	0.158	-1.349	0.314
KR	238	4	1.058	-0.383	0.158	-1.320	0.314
KP	238	4	1.141	-0.255	0.158	-1.401	0.314
EE	238	4	1.185	-0.407	0.158	-1.403	0.314
FbBM	238	4	1.106	-0.435	0.158	-1.372	0.314

Table 2 Details of factor loading, construct reliability and convergent validity in constructs of the first order

Items	Factor loading	Cronbach's alpha	Composite reliability	Average variance extracted
Customer value proposition		0.912	0.913	0.779
CVP1	0.845			
CVP2	0.881			
CVP5	0.920			
Profit formula		0.909	0.910	0.772
PF5	0.880			
PF6	0.888			
PF11	0.868			
Key resources		0.859	0.838	0.633
KR1	0.806			
KR3	0.822			
KR4	0.757			
Key processes		0.863	0.865	0.682
KP1	0.852			
KP2	0.820			
KP3	0.805			
Company performance		0.936	0.937	0.831
CP1	0.930			
CP3	0.903			
CP4	0.902			
Employee engagement		0.901	0.899	0.749
EE1	0.908			
EE2	0.822			
EE3	0.864			

Source: Developed for research

First order measurement data (Fig. 2) were used to determine the model-fit indices $CMIN/DF=2.411$, $IFI=0.967$, $TLI=0.956$, $CFI=0.966$, $SRMR=0.027$, and $RMSEA=0.077$. All these values meet the threshold values (Hair et al., 2010), indicating that this first order research model has good fitness.

The cut-off point of 0.7 for composite reliability and Cronbach's alpha was used to evaluate the construct reliability in this study (Gliem & Gliem, 2003; Hair et al., 2010). The results show that all Cronbach's alpha value exceeds 0.80 for the first-order constructs, including customer value proposition, key resources, profit formula, key processes, company performance and employee engagement (Table 2), indicating that the constructs' internal consistency is good. Meanwhile, all the composite reliability values for first order constructs exceeded 0.7 (Table 2). As a result, it is concluded that all first-order constructs in this study are reliable.

Table 3 Details of factor loading, construct reliability and convergent validity in constructs of the second order

Items	Factor loading	Cronbach's alpha	Composite reliability	Average variance extracted
Four-box business model		0.951	0.988	0.954
CVP	1.000			
PF	0.981			
KR	0.998			
KP	0.926			
Company performance		0.936	0.937	0.832
CP1	0.930			
CP3	0.904			
CP4	0.902			
Employee engagement		0.901	0.896	0.741
EE1	0.913			
EE2	0.807			
EE3	0.860			

Source: Developed for research

Another critical component of measurement model evaluation is the construct validity testing. There are two types of validity, convergent and discriminant. The extracted value of the average variance must be greater than 0.5 to be considered convergent (Fornell & Larcker, 1981). In this study, all extracted average variance values for first order constructs are greater than 0.50 (Table 2). As a result, measurement of this study meets the requirement of convergent validity.

As shown in Table 3, values of Cronbach's alpha and composite reliability of second order constructs for four-box business model, company performance and employee engagement are surpassing 0.8 (Table 3). As a result, it is possible to state that the internal consistencies were good and constructs were reliable for all second-order constructs in this study. All average extracted variance for second order constructs in this study are greater than 0.70 (Table 3). As a result, the convergent validity of scales in second order constructs is confirmed in this. Furthermore, the model shows a good fit with $CMIN/DF=2.487$, $IFI=0.962$, $TLI=0.954$, $CFI=0.962$, $SRMR=0.029$, and $RMSEA=0.079$ (Fig. 3). All of these values fall within the acceptable range (Hair et al., 2010; Hooper et al., 2008; Hu & Bentler, 1999; Moss, 2009).

In this study, discriminant validity is evaluated using the Heterotrait-Monotrait (HTMT) ratio. According to Henseler et al. (2015), the choice of an HTMT cut-off value is determined by the conceptual similarity of the investigated constructs and the researcher's desire for conservatism (Ab Hamid et al., 2017, September; Franke & Sarstedt, 2019). The HTMT ratios of all first and second order constructs are less than one. As a result, it can be concluded that discriminant validity between first and second order constructs has been established.

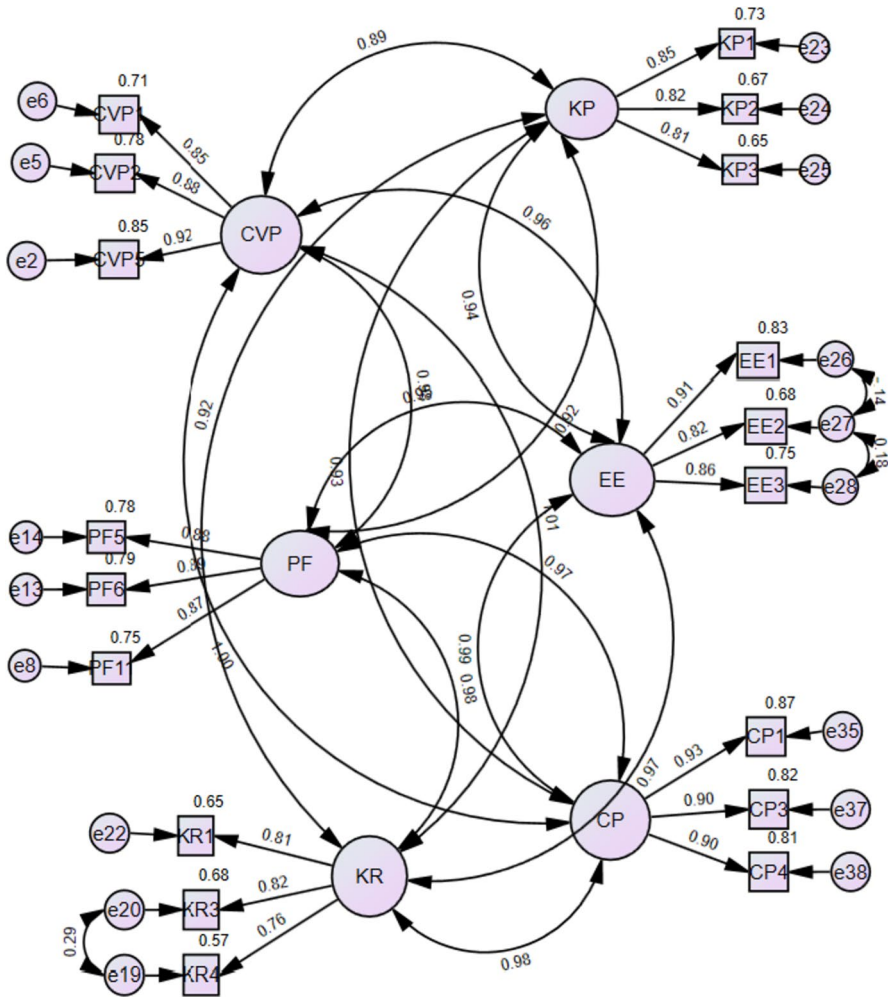


Fig. 2 First-order measurement model. Source: Developed for research

Structural Model Assessment

A structural equation modelling was conducted by using all the constructs with their remaining indicators. The fit indexes of the structural model shown that $CMIN/DF=2.868$, $IFI=0.953$, $TLI=0.942$, $CFI=0.953$, $SRMR=0.036$, and $RMSEA=0.089$ (the exceeded tiny number can be ignored). It can be concluded that all of the values fall within the relevant thresholds (Hair et al., 2010). Thus, this study’s structural model (Fig. 4) is almost perfectly fitted.

The finding showed that four-box model of business in conjunction with the performance of the company as a moderator can explain 95% of the variance in employee engagement.

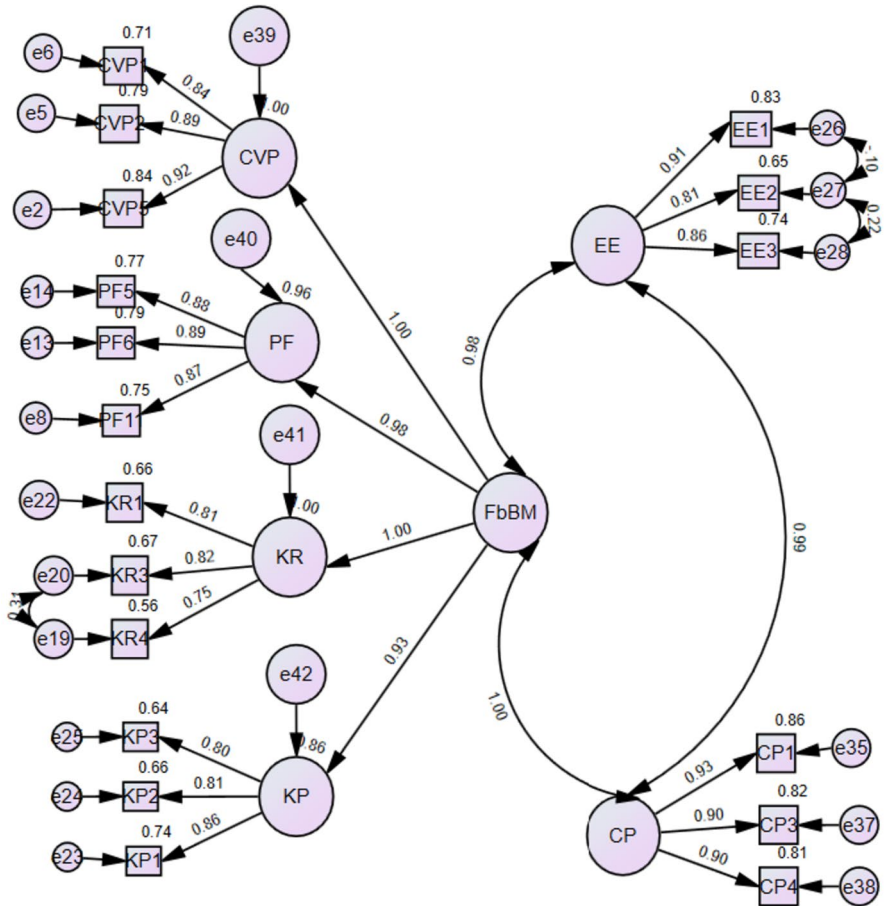


Fig. 3 Second-order measurement model. Source: Developed for research

Employee engagement is positively and significantly impacted by the four-box business model ($b=0.839, p<0.001$). In Table 4, it also shows that the effect of the four-box business model on employee engagement is 0.839, which is significantly positive with a p value smaller than 0.001. Based on this, the moderating role of company performance was tested. The result shows that four-box business model’s connection to the employee engagement is significantly moderated by company performance ($b=0.083, p=0.025$). It indicated that the moderating effect of company performance between the four-box business model and employee engagement was 0.083, with $p=0.025$. Employee engagement is positively and significantly impacted by customer value proposition ($b=0.702, p=0.002$). In Table 4, it also shows that the effect of the customer value proposition on employee engagement is 0.702, which is significantly positive with $p=0.002$. Their relationship is moderated by company performance but slightly and insignificantly ($b=0.07, p=0.145$). It indicated that the moderating effect of the company performance between

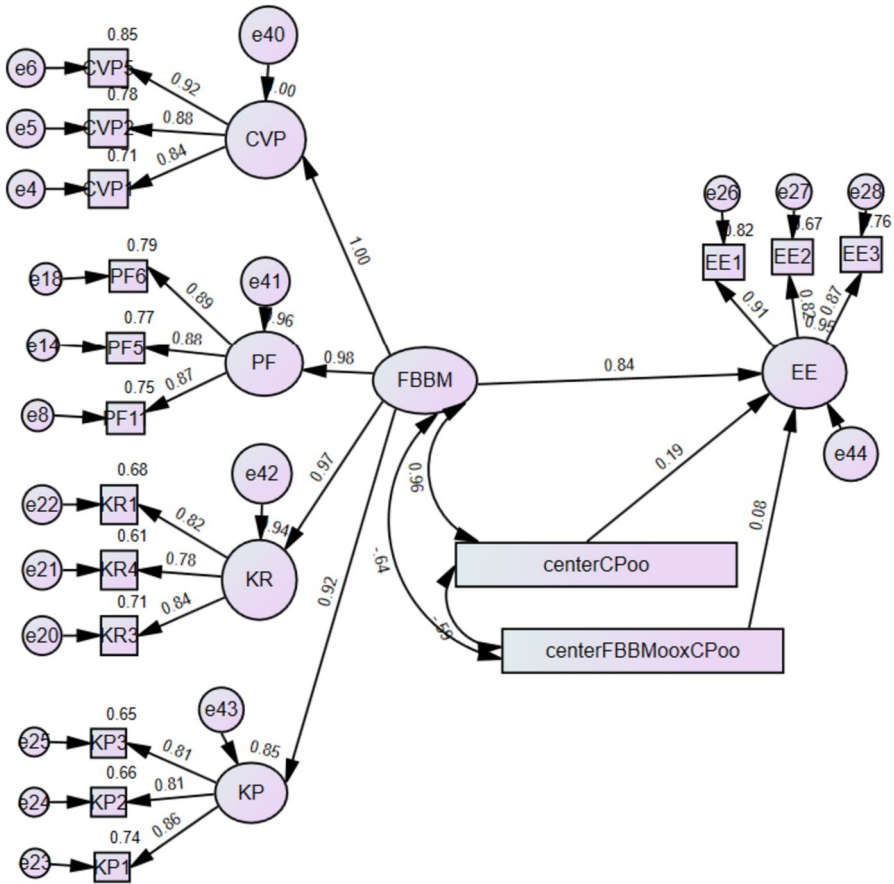


Fig. 4 Structural model. Source: Developed for research

customer value proposition and employee engagement was 0.07 with $p=0.145$. Key resources have a positive and significant impact on employee engagement ($b=0.531$, $p<0.001$). In Table 4, it also shows that the effect of the key resources on employee engagement is 0.531, which is significantly positive with $p<0.001$. Company performance moderates their relationship positively and significantly ($b=0.112$, $p=0.013$). It indicated that the moderating effect of the company performance between key resources and employee engagement was 0.112 with $p=0.013$. Key processes have a significantly positive impact on employee engagement ($b=0.512$, $p<0.001$). In Table 4, it also shows that the effect of the key processes on employee engagement is 0.512, which is significantly positive with $p<0.001$. Their relationship is significantly moderated by company performance ($b=0.076$, $p=0.027$). It indicated that the moderating effect of the company performance between key processes and employee engagement was 0.076 with $p=0.027$. The profit formula significantly and favourably affects employee motivation ($b=0.512$, $p<0.001$). In Table 4, it also shows that the effect of the profit formula on employee

Table 4 Hypothesis test results

		Beta value (β)	p value	Results
Main effects				
H1	Four-box business model \rightarrow employee engagement	0.839	***	Supported
H1a	customer value proposition \rightarrow employee engagement	0.702	0.002	Supported
H1b	key resources \rightarrow employee engagement	0.531	***	Supported
H1c	key processes \rightarrow employee engagement	0.512	***	Supported
H1d	profit formula \rightarrow employee engagement	0.512	***	Supported
Moderating effects (company performance/CP)				
H2	Four-box business model \times CP \rightarrow employee engagement	0.083	0.025	Supported
H2a	customer value proposition \times CP \rightarrow employee engagement	0.070	0.145	Not Supported
H2b	key resources \times CP \rightarrow employee engagement	0.112	0.013	Supported
H2c	key processes \times CP \rightarrow employee engagement	0.076	0.027	Supported
H2d	profit formula \times CP \rightarrow employee engagement	0.045	0.215	Not Supported

Source: Developed for research

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

engagement is 0.512, which is significantly positive with $p < 0.001$. While their relationship is insignificantly moderated by company performance ($b = 0.045$, $p = 0.215$). It indicated that the moderating effect of the company performance between profit formula and employee engagement was 0.045 with $p = 0.215$.

According to the research results, it is clear that all the direct effects of this study's constructs on employee engagement are positive and significant. The direct effect of the four-box business model on employee engagement is the largest, followed by the customer value proposition. The direct effects of key resources, key processes and profit formula on employee engagement are almost the same. Although all moderating effects of company performance are positive, only the moderating effects of company performance between four-box business model, key resources, key processes and employee engagement are significant.

Discussion

The investigation of the relationships between variables is the primary objective of this research, including the four-box model of business, customer value proposition, key resources, key processes, profit formula, employee engagement and company performance for SMEs in three Chinese provinces. This primary objective was divided into two subsidiary objectives. One of the objectives is to determine the influence of using a business model with four boxes and the content in each box on employee engagement. Another objective is to determine how company performance affects the relationships between each box's content, the four-box business model and employee engagement.

Relevant hypotheses were developed in order to achieve the study's objectives. To collect data from Chinese SMEs managers, a self-administered survey questionnaire was used. Multiple statistical tests were used to analyse the data and test the hypotheses. The following contents highlight the findings under the study's hypotheses.

The initial objective of the research was to investigate the relationship between four-box business model and the content of each box (customer value proposition, profit formula, key resources and key processes) and employee engagement. To accomplish this study's objective, five hypotheses were created (H1, H1a–H1d). These hypotheses contend that the content of each of the four boxes, as well as the four-box model of business itself, impact favourably the level of engagement of the workforce. The results of the study show that the four-box model of business and its contents, including the customer value proposition, key resources, key processes and profit formula, all have varying degrees of influence on employee engagement, both positively and significantly. Therefore, in this study, all of the first five hypotheses (H1, H1a, H1b, H1c and H1d) are supported (Table 4).

According to this study, the four-box business model and its components (customer value proposition, key resources, key processes and profit formula) and employee engagement are positively correlated. They are simply the expected results of this study from the start. H1a's finding is consistent with previous studies on the impact of customer value proposition on employee engagement conducted by Beukes (2016) and Bapat (2013). The finding of H1b is consistent with a previous study on the impact of key resources on employee engagement conducted by Lee et al. (2020). The H1c finding is consistent with LaMacchia's (2021) previous study on key processes and employee engagement. Both the H1 finding about the impact of the four-box business model and the H1d finding about the impact of the profit formula on employee engagement are novel and can fill research gaps.

The investigation of the moderating effect of company performance in the relationships was the study's second objective, including each box's content, the four-box model of business itself and employee engagement. Five hypotheses (H2, H2a, H2b, H2c and H2d) were constructed to test these relationships. According to these hypotheses, the four-box business model, each box's content and employee engagement are all moderated by company performance. The findings show that employee engagement and the four-box business model are significantly influenced by company performance, thus the hypothesis H2 was supported (Table 4). At the same time, it was found that the relationships between two components of four-box business model, i.e. key resources, key processes and employee engagement, were significantly moderated by company performance too, thus hypotheses H2b and H2c were supported (Table 4); meanwhile, company performance also moderated the relationships between customer value proposition, profit formula and employee engagement but insignificantly, thus hypotheses H2a and H2d was not supported (Table 4).

This study found that the four-box business model, key resources, key processes and employee engagement all had significant positive moderating effects on company performance. This study also confirmed that company performance moderated the relationship between customer value proposition, profit formula and employee engagement insignificantly. As a result, only parts of the findings meet the study's expectations. These findings fill gaps by incorporating company performance as a moderating variable in the relationships between the four-box business model and its components and employee engagement.

Conclusion

According to the findings of this study, the four-box model of business and its components (customer value proposition, key resources, key processes and profit formula) all have direct significantly impact on employee engagement; company performance has positive moderating effects between four-box model of business and its components and employee engagement. According to the findings, a business can run smoothly and profitably if it has a solid existing business model that can be used as a roadmap. As a result of the COVID-19 impact, labour forces are constrained and talent is scarce. If managers can use relevant knowledge, such as organisational commitment theory, to understand and promote employee engagement effectively and timely, it will be easier for them to retain talented workers and capitalise on opportunities.

Theoretical Implications

The findings on customer value proposition, key resources and key processes that impact employee engagement can enrich relevant research fields, as these findings are consistent with or similar to previous studies. The findings on the four-box business model and profit formula that impact employee engagement are new, which can close relevant research gaps. Meanwhile, company performance can contribute to the relevant literature and close the relevant research gaps as a unique moderator between the four-box model of business, the contents of each box (including the customer value proposition, key resources, key processes and profit formula), and employee engagement.

Managerial Implications

The findings suggest that company management can leverage the existing business model and its internal key elements to greatly benefit the company, such as promoting employee engagement. Employees are more easily influenced by a business model that serves a purpose. Furthermore, traditional methods of retaining talent, such as good pay and extra bonus package, are no longer golden rules and are facing significant challenges in the current era. Following COVID-19, many businesses, particularly SMEs, are still struggling to recover and grow. It would be extremely beneficial for a company and its management to learn and apply some knowledge, such as organisational commitment theory, in order to learn and predict employee engagement in advance and then promote employees in a non-material way. This method may be feasible because spending less or no money to stimulate workforces is now possible. Companies with limited financial resources, as well as SMEs, could benefit from this type of non-material method of retaining talent and keeping businesses running smoothly and profitably.

Ideas for Future Research

The moderation effects of company performance between the relationships between four-box business model and its component (customer value proposition, key resources, key processes and profit formula) and employee engagement include significant and insignificant. Future researcher still can investigate further or focus on other areas and countries.

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Declarations

Conflict of Interest The authors declare no competing interests.

References

- Ab Hamid, M. R., Sami, W., & Sidek, M. M. (2017). Discriminant validity assessment: Use of Fornell & Larcker criterion versus HTMT criterion. In *Journal of Physics: Conference Series* (Vol. 890, No. 1, p. 012163). IOP Publishing.
- Adisa, T. A., Ogbonnaya, C., & Adekoya, O. D. (2023). Remote working and employee engagement: A qualitative study of British workers during the pandemic. *Information Technology & People*, 36(5), 1835–1850.
- Affes, W., & Affes, H. (2022). Business model and firm performance in Tunisian firms: A mediated moderation analysis. *Journal of the Knowledge Economy*, 13(4), 2822–2839.
- Aggarwal, A., Jaisinghani, D., & Nobil, K. (2022). Effect of organizational justice and support on organizational commitment and employee turnover intentions: The mediating role of employee engagement. *International Journal of Quality and Service Sciences*, (ahead-of-print).
- Akinkunmi, A. A., & Balogun, L. A. (2023). Nexus between employee engagement and performance rate of small scale businesses. *Journal of Production, Operations Management and Economics*, (JPOME) ISSN 2799–1008, 3(01), 13–20.
- Al-Jabari, B., & Ghazzawi, I. (2019). Organizational commitment: A review of the conceptual and empirical literature and a research agenda. *International Leadership Journal*, 11(1).
- Alfadhil, M. M. A., & Alabdullah, T. T. Y. (2016). Agency cost and management behavior: The role of performance as a moderator. *International Journal of Science and Research (IJSR)*, 5(1), 1858–1864.
- Altman, M. (2022). Trajectories for South African employment after COVID-19. *South African Journal of Science*, 118(5–6), 1–9.
- Andrić, B., Priyashantha, K. G., & De Alwis, A. C. (2023). Employee engagement management in the COVID-19 pandemic: A systematic literature review. *Sustainability*, 15(2), 987.
- Anggadani, S. D., Surtikanti, S., Saepudin, A., & Saleh, D. S. (2021). Business performance and implementation of total quality management: A case study in Indonesia. *The Journal of Asian Finance, Economics and Business*, 8(5), 1039–1046.
- Angle, H. L., & Perry, J. L. (1983). Organizational commitment: Individual and organizational influences. *Work and Occupations*, 10(2), 123–146.
- Annarelli, A., Battistella, C., & Nonino, F. (2020). Competitive advantage implication of different product service system business models: Consequences of 'not-replicable' capabilities. *Journal of Cleaner Production*, 247, 119121.
- Bapat, D. (2013). Assessment of customer centric practices. *PRIMA: Practices & Research in Marketing*, 4(1).
- Bashir, M., Alfalih, A., & Pradhan, S. (2023). Managerial ties, business model innovation & SME performance: Moderating role of environmental turbulence. *Journal of Innovation & Knowledge*, 8(1), 100329.

- Bauer, L. B., Bloch, D., & Merkert, R. (2020). Ultra long-haul: An emerging business model accelerated by COVID-19. *Journal of Air Transport Management*, 89, 101901.
- Beukes, W. (2016). *Analysing the impact of employees' perceived customer value on employee engagement* (Doctoral dissertation, North-West University (South Africa), Potchefstroom Campus).
- Bhatti, S. H., Santoro, G., Khan, J., & Rizzato, F. (2021). Antecedents and consequences of business model innovation in the IT industry. *Journal of Business Research*, 123, 389–400.
- Boshnyaku, A. (2022). The impact of industry 4.0 on business models. In *International conference interdisciplinary in engineering* (pp. 498–515). Cham: Springer International Publishing.
- Breier, M., Kallmuenzer, A., Clauss, T., Gast, J., Kraus, S., & Tiberius, V. (2021). The role of business model innovation in the hospitality industry during the COVID-19 crisis. *International Journal of Hospitality Management*, 92, 102723.
- Butt, A. S. (2021). Supply chains and COVID-19: Impacts, countermeasures and post-COVID-19 era. *The International Journal of Logistics Management*, (ahead-of-print).
- Carletti, E., Claessens, S., Fatás, A., & Vives, X. (2020). *Post-Covid-19 world*. Centre for Economic Policy Research.
- Causa, O., Abendschein, M., Luu, N., Soldani, E., & Soriolo, C. (2022). The post-COVID-19 rise in labour shortages.
- Chan, A. J., Hooi, L. W., & Ngui, K. S. (2021). Do digital literacies matter in employee engagement in digitalised workplace? *Journal of Asia Business Studies*, 15(3), 523–540.
- Chanana, N., & Sangeeta. (2021). Employee engagement practices during COVID-19 lockdown. *Journal of Public Affairs*, 21(4), e2508.
- CHINANEWS.COM (2020, Jan. 24 & 2021, Jan. 30 & 2021, Apr. 28). *GDP of Chinese 31 provinces in 2019 & 2020 & first quarter of 2021 (Chinese)*. Retrieved from <http://www.chinanews.com/cj/2020/01-24/9068576.shtml>; <http://www.chinanews.com/cj/2021/01-30/9400173.shtml>; <http://www.chinanews.com/cj/2021/04-28/9466104.shtml>.
- Christensen, C. M., Bartman, T., & Bever, D. V. (2016). The hard truth about business model innovation.
- Cooper-Thomas, H. D., Xu, J., & Saks, A. M. (2018). The differential value of resources in predicting employee engagement. *Journal of Managerial Psychology*, 33(4/5), 326–344.
- Črv, S., & Markič, M. (2023). Contribution of the QMS principles to company performance. *International Journal for Quality Research*, 17(1), 227–242.
- Darabi, B. (2023). Effect of supply chain resilience on competitive advantage and firm.
- Davis, A. S., & Van der Heijden, B. I. (2023). Launching the dynamic employee engagement framework: Towards a better understanding of the phenomenon. *Employee Relations: The International Journal*, 45(2), 421–436.
- De Smet, A., Dowling, B., Mugayar-Baldocchi, M., & Schaninger, B. (2021). A record number of employees are quitting or thinking about doing so. Organizations that take the time to learn why—and act thoughtfully—will have an edge in attracting and retaining talent. Retrieved from <https://www.mckinsey.com/capabilities/people-and-organizational-performance/our-insights/great-attrition-or-great-attraction-the-choice-is-yours>
- De Smet, A., Dowling, B., Mugayar-Baldocchi, M., & Schaninger, B. (2022). Nearly half of the employees who voluntarily left the workforce during the pandemic aren't coming back on their own. Employers must go and get them. Here's how to start. Retrieved from <https://www.mckinsey.com/capabilities/people-and-organizational-performance/our-insights/gone-for-now-or-gone-for-good-how-to-play-the-new-talent-game-and-win-back-workers>
- Del Giudice, M., Scuotto, V., Papa, A., Tarba, S. Y., Bresciani, S., & Warkentin, M. (2021). A self-tuning model for smart manufacturing SMEs: Effects on digital innovation. *Journal of Product Innovation Management*, 38(1), 68–89.
- Dest, A. G., Tadesse, W. M., & Mulusew, W. B. (2022). Aspects of human capital management and employee job performance: The mediation role of employee engagement. *International Journal of Business Science & Applied Management*, 17(3).
- Engidaw, A. E. (2021). The effect of motivation on employee engagement in public sectors: In the case of North Wollo zone. *Journal of Innovation and Entrepreneurship*, 10(1), 1–15.
- Fielt, E. (2013). Conceptualising business models: Definitions, frameworks and classifications. *Journal of Business Models*, 1(1), 85–105.
- Figurska, I. (2015). Knowledge workers engagement in work in theory and practice. *Human Resources Management & Ergonomics*, 9(2).
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50.

- Franke, G., & Sarstedt, M. (2019). Heuristics versus statistics in discriminant validity testing: A comparison of four procedures. *Internet Research*.
- Gharehgozli, O., & Lee, S. (2022). Money supply and inflation after COVID-19. *Economics*, *10*(5), 101.
- Gliem, J. A., & Gliem, R. R. (2003). Calculating, interpreting, and reporting Cronbach's alpha reliability coefficient for Likert-type scales. Midwest research-to-practice conference in adult, continuing, and community education.
- Goswami, B. K. (2020). Empirical exploration of relationship between work life balance and employee engagement with the moderating role of ethical leadership. *PalArch's Journal of Archaeology of Egypt/egyptology*, *17*(6), 11104–11118.
- Gualano, M. R., Rossi, M. F., Borrelli, I., Santoro, P. E., Amantea, C., Daniele, A., & Moscato, U. (2022). Returning to work and the impact of post COVID-19 condition: A systematic review. *Work*, (Preprint), 1–9.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2010). *Multivariate data analysis (7/e)*. Pearson.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis (Eighth Ed)*. Hampshire, United Kingdom: Cengage Learning EMEA. <https://doi.org/10.1002/9781119409137>
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, *43*, 115–135.
- Hooi, L. W., & Chan, A. J. (2023). Does workplace digitalization matter in linking transformational leadership and innovative culture to employee engagement? *Journal of Organizational Change Management*, *36*(2), 197–216.
- Hooper, D., Coughlan, J., & Mullen, M. (2008). Evaluating model fit: A synthesis of the structural equation modelling literature. In *7th European Conference on Research Methodology for Business and Management Studies* (pp. 195–200).
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1–55.
- Jabbar, I. N. (2022). Digital marketing strategy on instagram social media for micro, small and medium business in Baghdad. *Journal of Business Issues*, *1*(2), 217–231.
- Jbara, N. A., & Darnton, G. (2019). The innovation of a hybrid business model for social enterprises. In *International Conference on Innovation and Entrepreneurship* (pp. 1–XV). Academic Conferences International Limited.
- Johnson, M. W., Christensen, C. M., & Kagermann, H. (2008). Reinventing your business model. *Harvard Business Review*, *86*(12), 50–59.
- Johnson, M. W., & Lafley, A. G. (2010). *Seizing the white space: Business model innovation for growth and renewal*. Harvard Business Press.
- Johnson, M., & Euchner, J. (2018). Developing new business models: An interview with Mark Johnson: Mark Johnson talks with Jim Euchner about business model innovation and how to make it work in large corporations. *Research-Technology Management*, *61*(6), 13–19.
- Kajtazi, K., Rexhepi, G., Sharif, A., & Ozturk, I. (2023). Business model innovation and its impact on corporate sustainability. *Journal of Business Research*, *166*, 114082.
- Kessler, E. H. (Ed.). (2013). *Encyclopedia of management theory*. Sage Publications.
- Khatib, S. F., & Nour, A. (2021). The impact of corporate governance on firm performance during the COVID-19 pandemic: Evidence from Malaysia. *Journal of Asian Finance, Economics and Business*, *8*(2), 0943–0952.
- Kreuzer, V. I., & Tomaschitz, M. (2021). Organizational challenges in automotive development. *Systems Engineering for Automotive Powertrain Development*, 123–146.
- Kustiawan, U., Marpaung, P. A. R. D. A. M. E. A. N., Lestari, U. D., & Andiyana, E. (2022). The effect of affective organizational commitment, job satisfaction, and employee engagement on job happiness and job performance on manufacturing company in Indonesia. *WSEAS Transactions on Business and Economics*, *19*(52), 573–591.
- LaMacchia, C. S. (2021). *Enhancing employee engagement to improve financial performance* (Doctoral dissertation, Walden University).
- Latifi, M. A., Nikou, S., & Bouwman, H. (2021). Business model innovation and firm performance: Exploring causal mechanisms in SMEs. *Technovation*, *107*, 102274.
- Lebans, M., & Euske, K. (2006). A conceptual and operational delineation of performance. *Business Performance Measurement. Theory and Practice*, ed. A. Neely, *25*(4).

- Lee, S. (2022). Corporate social responsibility and COVID-19: Research implications. *Tourism Economics*, 28(4), 863–869.
- Lee, J. Y., Rocco, T. S., & Shuck, B. (2020). What is a resource: Toward a taxonomy of resources for employee engagement. *Human Resource Development Review*, 19(1), 5–38.
- Leitão, A., Cunha, P., Valente, F., & Marques, P. (2013). Roadmap for business models definition in manufacturing companies. *Procedia CIRP*, 7, 383–388.
- Lemon, L. L., & Boman, C. D. (2022). Ethics of care in action: Overview of holistic framework with application to employee engagement. *Public Relations Review*, 48(4), 102232.
- Li, H., Hu, Q., Zhao, G., & Li, B. (2022). The co-evolution of knowledge management and business model transformation in the post-COVID-19 era: Insights based on Chinese e-commerce companies. *Journal of Knowledge Management*, 26(5), 1113–1123.
- Linggiullo, H., Riadi, S., Hariyadi, S., & Adhimursandi, D. (2021). The effect of predictor variables on employee engagement and organizational commitment and employee performance. *Management Science Letters*, 11(1), 31–40.
- Liu, Y., Lee, J. M., & Lee, C. (2020). The challenges and opportunities of a global health crisis: The management and business implications of COVID-19 from an Asian perspective. *Asian Business & Management*, 19(3), 277–297.
- Madhani, P. M. (2020). Effective rewards and recognition strategy: Enhancing employee engagement, customer retention and company performance. *The Journal of Total Rewards*, 29(2), 39–48.
- Magretta, J. (2002). Why business models matter.
- Malik, A., & Rowley, C. (2015). 13 Towards an integrated model of human capital development for business model innovation. *Business models and people management in the Indian IT industry: From people to profits*, 219.
- Matzler, K., Bailom, F., von den Eichen, S. F., & Kohler, T. (2013). Business model innovation: Coffee triumphs for Nespresso. *Journal of Business Strategy*, 34(2), 30–37.
- Meertens, L. O., Iacob, M. E., & Nieuwenhuis, L. J. (2010). Towards a definition of role-related concepts for business modeling. In *2010 14th IEEE International Enterprise Distributed Object Computing Conference Workshops* (pp. 138–146). IEEE.
- Mercurio, Z. A. (2015). Affective commitment as a core essence of organizational commitment: An integrative literature review. *Human Resource Development Review*, 14(4), 389–414.
- Mishra, N. P., Das, S. S., Yadav, S., Khan, W., Afzal, M., Alarifi, A., & Nayak, A. K. (2020a). Global impacts of pre-and post-COVID-19 pandemic: Focus on socio-economic consequences. *Sensors International*, 1, 100042.
- Mishra, S., Ewing, M. T., & Pitt, L. F. (2020b). The effects of an articulated customer value proposition (CVP) on promotional expense, brand investment and firm performance in B2B markets: A text based analysis. *Industrial Marketing Management*, 87, 264–275.
- Moss, S. (2009). Fit indices for structural equation modeling.
- Nagpal, P. (2022). Organizational commitment as an outcome of employee engagement: A social exchange perspective using a SEM model. *International Journal of Biology, Pharmacy and Allied Sciences*, 11(1), 72–86.
- Nguyen, P. V., Huynh, H. T. N., Lam, L. N. H., Le, T. B., & Nguyen, N. H. X. (2021). The impact of entrepreneurial leadership on SMEs' performance: The mediating effects of organizational factors. *Heliyon*, e07326.
- Nugroho, A., & Fontana, A. (2023). Building the competitive advantages of MSMEs through increasing the capacity of business model innovation. *JHSS (journal of Humanities and Social Studies)*, 7(2), 467–471.
- Nunes, M. P., & Pereira, R. D. V. (2021). Business model innovation and business performance in an innovative environment. *International Journal of Innovation Management*, 25(03), 2150036.
- Ouragini, I., & Lakhal, L. (2023). The impact of entrepreneurial marketing on the firm performance. *Journal of the Knowledge Economy*, 1–23.
- Pass, S., & Ridgway, M. (2022). An informed discussion on the impact of COVID-19 and 'enforced' remote working on employee engagement. *Human Resource Development International*, 25(2), 254–270.
- Payne, A., Frow, P., & Eggert, A. (2017). The customer value proposition: Evolution, development, and application in marketing. *Journal of the Academy of Marketing Science*, 45, 467–489.
- Pitaloka, E., & Putri, F. M. (2021). The impact of employee engagement and organizational commitment on employee performance. *Business Management Journal*, 17(2), 117–133.

- Pourmansouri, R., Mehdiabadi, A., Shahabi, V., Spulbar, C., & Birau, R. (2022). An investigation of the link between major shareholders' behavior and corporate governance performance before and after the COVID-19 pandemic: A case study of the companies listed on the Iranian stock market. *Journal of Risk and Financial Management*, 15(5), 208.
- Prasadjaningsih, M. O., & Alexandra, M. (2022). Impact of employee engagement and motivation on employee performance in PT Indonesia Morowali Industrial Park. *Dinasti International Journal of Digital Business Management*, 3(2), 232–243.
- Qiu, S. C., Jiang, J., Liu, X., Chen, M. H., & Yuan, X. (2021). Can corporate social responsibility protect firm value during the COVID-19 pandemic? *International Journal of Hospitality Management*, 93, 102759.
- Quantumworkplace. (2021). 2020 Employee engagement trends report. How America's best places to work engage & retain top talent. <https://marketing.quantumworkplace.com/hubfs/Marketing/Website/Resources/PDFs/QW-2020-Employee-Engagement-Trends-Report.pdf>
- Rameshkumar, M. (2020). Employee engagement as an antecedent of organizational commitment—A study on Indian seafaring officers. *The Asian Journal of Shipping and Logistics*, 36(3), 105–112.
- Ribeiro-Navarrete, S., Botella-Carrubi, D., Palacios-Marqués, D., & Orero-Blat, M. (2021). The effect of digitalization on business performance: An applied study of KIBS. *Journal of Business Research*, 126, 319–326.
- Rintamäki, T., & Saarijärvi, H. (2021). An integrative framework for managing customer value propositions. *Journal of Business Research*, 134, 754–764.
- Riyanto, S., Endri, E., & Herlisha, N. (2021). Effect of work motivation and job satisfaction on employee performance: Mediating role of employee engagement. *Problems and Perspectives in Management*, 19(3), 162.
- Roberts, C., Alpert, F., & Roberts, C. (2015). Strategic drivers of customer and employee engagement: Practical applications. In *Customer engagement* (pp. 171–192). Routledge.
- Ruddin, I., Santoso, H., Indrajit, R. E., & Dazki, E. (2021). Big entertainment's film and music creation design: Platform-based business model canvas and enterprise architecture. *Capture: Jurnal Seni Media Rekam*, 13(1).
- Ryan, L. (2013). Facilitating the transition from product-orientated to product service systems.
- Sabri, M. O., Al-Qawasmi, K., Odeh, M., & Aydin, M. E. (2023). Adoption of business model canvas in exploring digital business transformation. *Information Sciences Letters*, 12(2), 845–854.
- Salamah, S. N. (2023). Financial management strategies to improve business performance. *Journal of Contemporary Administration and Management (ADMAN)*, 1(1), 9–12.
- Salamzadeh, A., Mortazavi, S., Hadizadeh, M., & Braga, V. (2023). Examining the effect of business model innovation on crisis management: The mediating role of entrepreneurial capability, resilience and business performance. *Innovation & Management Review*, 20(2), 132–146.
- Sinha, P. K., Agarwal, A. M., & Singh, K. (n.d.). Suggested business model for start-ups in achieving goals of Atmanirbhar Bharat. <https://www.iipa.org.in/publication/public/uploads/article/13521671102622.pdf>
- SK, R. I. S. N. I. (2020). Planning business model canvas with SWOT method at XYZ Institute. *Dinasti International Journal of Digital Business Management*, 1(5), 781–793.
- Sugandha, J. (2022). A study on employee engagement: Indicators and repercussions: Review of literature with a critical analysis. *Advances in Management*, 15(3), 22–30.
- Suryaningrum, D. H., Abdul Rahman, A. A., Meero, A., & Cakranegara, P. A. (2023). Mergers and acquisitions: Does performance depend on managerial ability? *Journal of Innovation and Entrepreneurship*, 12(1), 1–23.
- Taouab, O., & Issor, Z. (2019). Firm performance: Definition and measurement models. *European Scientific Journal*, 15(1), 93–106.
- Truant, E., Broccardo, L., & Dana, L. P. (2021). Digitalisation boosts company performance: An overview of Italian listed companies. *Technological Forecasting and Social Change*, 173, 121173.
- Turoñ, K., & Kubik, A. (2021). Business innovations in the new mobility market during the COVID-19 with the possibility of open business model innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, 7(3), 195.
- Waghmare, R. B., & Golhar, D. (2017). Knowledge creation at incubation for business model innovation: The conceptual understanding. *Journal of Commerce and Management Thought*, 8(4), 673–683.
- Wahyudono, D. B. K. (2023). Leader's entrepreneurial resiliences a strong predictor of new hotel performance in Yogyakarta. *Kontigensi: Jurnal Ilmiah Manajemen*, 11(1), 313–319.

- Waite, C., & Arnett, T. (2020). *Will schools change forever?* Predicting how two pandemics could catalyze lasting innovation in public schools.
- Wan, Q. (2015). Analysis of Chinese LBSN business models based on four-box approach.
- Zahoor, N., Christofi, M., Nwoba, A. C., Donbesuur, F., & Miri, D. (2022). Operational effectiveness in post-pandemic times: Examining the roles of digital technologies, talent management and employee engagement in manufacturing SMEs. *Production Planning & Control*, 1–14.
- Zhang, D., Wang, C., & Dong, Y. (2023). How does firm ESG performance impact financial constraints? An experimental exploration of the COVID-19 pandemic. *The European Journal of Development Research*, 35(1), 219–239.
- Zhang, T., Gerlowski, D., & Acs, Z. (2021). Working from home: Small business performance and the COVID-19 pandemic. *Small Business Economics*, 1–26.
- Zhang, T. C., Gu, H., & Jahromi, M. F. (2019). What makes the sharing economy successful? An empirical examination of competitive customer value propositions. *Computers in Human Behavior*, 95, 275–283.
- Zhao, L., Huo, B., Sun, L., & Zhao, X. (2013). The impact of supply chain risk on supply chain integration and company performance: A global investigation. *Supply Chain Management: An International Journal*.
- Zheng, M. (2022). Is cash the panacea of the COVID-19 pandemic: Evidence from corporate performance. *Finance Research Letters*, 45, 102151.
- Zhu, Z., SPR, C. R., & Wong, L. S. (2023a). Impact of employee engagement on company performance: The four-box business model as a moderator: Perspectives from the COVID-19 pandemic. In *10th International conference on business, accounting, finance and economics (BAFE 2022)* (pp. 190–204). Atlantis Press.
- Zhu, Z., SPR, C. R., & Wong, L. S. (2023b). Employee engagement as a moderator between customer value proposition and company performance during COVID-19. In *CoMBInES-Conference on Management, Business, Innovation, Education and Social Sciences*, 3(1), 56–70).

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