JOB SATISFACTION, SUPPLY CHAIN AGILITY AND FIRM SUSTAINABILITY POST COVID-19

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Abstract

Purpose - Employees are the most valuable assets of an organization, and they are critical for building sustainable business and supply chains. Based on the resource-based view and social capital theory, the study attempts to understand how human capital can influence firm sustainability through supply chain agility. We investigate the relationships between employees' job satisfaction, supply chain agility and firm sustainability.

Research Approach – A theoretical framework is developed. Multiple research methods, such as factor analysis, structural equation modelling (SEM), mediation analysis and moderation analysis are applied in this study. Empirical data is collected from 271 organisations in the United Arab Emirates. Measurement models are validated in factor analysis. Then, the structural model and research hypotheses are tested in SEM, mediation, and moderation analysis.

Findings and Originality – Our results show that job satisfaction significantly influences firm sustainability through supply chain agility. However, our study did not discover any empirical evidence indicating that supply chain agility moderates the correlation between job satisfaction and firm sustainability.

Keywords: Job satisfaction, supply chain agility, sustainability, supply chain

1. Introduction

The COVID-19 pandemic has significantly impacted businesses and supply chains worldwide (Wang, 2023). The pandemic has highlighted the importance of supply chain agility and its impact on firm sustainability (Wang et al., 2023a, Wang and Wang, 2023). Companies must embrace supply chain agility to build a resilient supply chain post-COVID-19 (Flynn et al., 2021). In addition, firms have been struggling to survive in this challenging environment. In response, firms have had to find ways to manage their operations, stay alive, create competitive advantages, and maintain their sustainability post-COVID-19 (Flynn et al., 2021). It is crucial to explore strategies that can enhance their sustainability and agility.

Employees are critical for sustainable supply chain operations (Jiang et al., 2009). The COVID-19 pandemic has not only resulted in numerous supply chain disruptions (Wang, 2023) but has also brought attention to the well-being of human workers. Some firms have struggled to adapt to the challenges posed by the pandemic, including disruptions to supply chains, digitalisation, changes in consumer demand, and economic uncertainty. Supply chain agility has become increasingly important in the wake of the COVID-19 pandemic (Wang and Wang, 2023). Firms with agile supply chains are better able to respond to sudden changes in demand and supply and are more resilient in the face of future disruptions (Braunscheidel and Suresh, 2009). Sustainable firms are those that can maintain their operations and profitability while mitigating their negative impacts on the environment and society. Sustainability has become an essential consideration for different stakeholders, such as consumers and investors, and firms must prioritize sustainability post-COVID-19. Therefore, firms need to understand how job satisfaction influences supply chain agility and sustainability post-COVID-19.

Although many authors emphasise that employees play a vital role in organisations (Yee et al., 2008, Jiang et al., 2009), research on the impact of employee satisfaction on business operations is relatively scarce. Considering the research gaps, this study aims to explore the relationship between job satisfaction, supply chain agility, and firm sustainability, and how

supply chain agility can be leveraged to enhance the sustainability performance of firms in the post-COVID-19 era. Thus, we propose the following research questions:

RQ1: How does job satisfaction affect a firm's sustainability through supply chain agility?
RQ2: How does supply chain agility impact the relationship between job satisfaction influence a firm's sustainability?

Based on the RBV and the social capital theory, to answer these research questions, an empirical study is conducted to investigate the relationship between job satisfaction, supply chain agility, and firm sustainability, and how supply chain agility can affect the relationship between job satisfaction and firm sustainability in the post-COVID-19 era. The empirical study is the first to explore how job satisfaction affects a firm's sustainability through supply chain agility. This study contributes to the existing literature. This provides theoretical implications for the role of employees in achieving supply chain agility and highlights the importance of considering employee job satisfaction in supply chain management. This study provides valuable insights and recommendations for firms to enhance their supply chain agility and sustainability in the post-pandemic world.

2. Theoretical background and hypothesis development

The resource-based view and social capital theory are two important perspectives in the field of management and organizational theory that highlight the strategic significance of resources and social networks, whether tangible or intangible, for organizations. Both theories consider humans as important resources in organisations and human capital is the key to creating value and sustaining competitive advantages. The conceptual framework has been developed in the study (Figure 1).

2.1 Job satisfaction and supply chain agility

Employee job satisfaction has traditionally belonged to the field of organisational psychology (Scarpello and Campbell, 1983, Judge et al., 2001). However, employee attributes are getting more and more attention in operations management (Yee et al., 2008, Ukko et al., 2007). Furthermore, the COVID-19 pandemic has drawn attention to the importance of human capital/staff in the business. Jiang et al. (2009) argue that job dissatisfaction may trigger substantial shortages and delays in the global supply chain owing to supplier labour problems. Jacobs et al. (2016) reveal that employee satisfaction significantly influences supply chain integration. Gölgeci and Kuivalainen (2020) argue that firms' social capital can lead to supply chain resilience.

Supply chain agility refers to a firm's ability to respond quickly and effectively to changes in the market and customer demand (Braunscheidel and Suresh, 2009). Humans are the key to responding to changes, implementing new technologies, and collaborating tasks in supply chain operations (Wang et al., 2020, Locke and Romis, 2007), Job satisfaction can influence the performance of employees in the supply chain (Jiang et al., 2009).

Locke and Romis (2007) argue that organisations must monitor and improve working conditions in global supply chain factories. Jiang et al. (2009) emphasise that workers with negative job attitudes such as job dissatisfaction are likely to perform poorly in supply chain operations, which may cause disruptions to normal operations. Maloni et al. (2017) highlight the importance of job satisfaction in supply chain operations. Based on the prior research, we hypothesised that satisfied workers were more likely to promote supply chain agility. Therefore,

Hypothesis 1. There is a direct and positive relationship between employee job satisfaction and supply chain agility.

2.2 Job satisfaction and firm's sustainability

Human capital is critical for firm performance (Wang et al., 2022, Lamm et al., 2015). Social capital theory suggests that social relationships, networks, and interactions can create valuable resources for organizations, such as trust, information, social norms, and social support, which can be leveraged to create value and achieve competitive advantages

(Coleman, 1988, Wang et al., 2023b). Job satisfaction and sustainability are two important concepts that are closely related. For example, Lamm et al. (2015) argue that happy and satisfied employees will actively engage in sustainability behaviours, and this would lead to better organizational sustainability. Lee and Chen (2018) reveal that an organisation's efforts on CSR could enhance the employees' satisfaction and retention intention by fulfilling employee job needs.

If employees are dissatisfied with their job, they may be less motivated to contribute to sustainability efforts. They may be less willing to adopt sustainable practices and may be more likely to leave the organization, leading to turnover costs, labour shortage, supply chain disruption and instability in the workforce (Jiang et al., 2009). Overall, happy employees are more likely to be productive, engaged, and committed to the organisation (Lyubomirsky et al., 2005, Wright and Cropanzano, 2000). This can lead to improved sustainability performance for the organisation. Thus, the following hypothesis is proposed in the study.

Hypothesis 2. There is a direct and positive relationship between job satisfaction and a firm's sustainability.

2.3 Supply chain agility and firm's sustainability

There is growing recognition that supply chain agility and firm sustainability are interconnected (Wang and Wang, 2023). Supply chain agility is viewed as an antecedent to firm sustainability (Wang and Wang, 2023). Supply chain agility enables an agile supply chain, which can quickly respond to changes in customer demand, market trends, and supply chain disruptions (Christopher, 2000, Teece et al., 2016). When it comes to sustainability, an agile supply chain may help to reduce waste, conserve resources, and minimise carbon emissions (Gligor et al., 2015, Wang et al., 2020). By quickly responding to changes in markets, an agile supply chain can also help to eliminate waste, which can lead to better financial performance (Gligor et al., 2015). Furthermore, an agile supply chain can help to build resilience in the face of sustainability-related risks (Teece et al., 2016), such as natural disasters, climate change, and social disruptions. By being able to quickly respond to these risks, organizations can mitigate the impact on their operations, supply chain partners, and the environment (Wang et al., 2018). Thus, the following hypothesis is proposed:

Hypothesis 3. There is a direct and positive relationship between supply chain agility and a firm's sustainability.

2.4 Role of supply chain agility

Supply chain agility plays a vital role in linking job satisfaction to sustainability performance in organizations. In literature, agility as a concept was introduced as a mechanism for companies to cope with change (Geyi et al., 2020, Gligor et al., 2015). In this study, we argue that supply chain agility means not only quick response to suppliers and customers but also the quick resolution of problems, reconfiguration of business processes to adapt to changes and implementation of continuous improvement post-COVID-19. Research has shown that job satisfaction is positively related to performance in organisations (Judge et al., 2001, Wright et al., 2007). When employees are satisfied with their job, they are more likely to be committed to the organization, be productive, and take ownership of their work (Locke, 1969, Lyubomirsky et al., 2005, Maloni et al., 2017, Wright and Cropanzano, 2000). This may lead to improved sustainability performance (Lamm et al., 2015).

Meanwhile, an agile supply chain can help to improve sustainability performance by enabling organizations to work with suppliers and quickly respond to changes in customer demand, supply chain disruptions, and sustainability-related risks. As discussed before, an agile supply chain can also help to promote sustainability by reducing waste, conserving resources, and minimising carbon emissions (Gligor et al., 2015, Wang et al., 2020). By being able to quickly respond to changes, resolve problems, reconfigure operations processes, and adopt sustainable practices, supply chain agility can explain the positive effect of job satisfaction on sustainability performance. However, current literature offers little guidance on how supply chain agility moderates the relationship between job satisfaction and performance. Supply chain agility has been considered as an important strategy to build resilience, and

address uncertainties post-COVID-19 (Wang and Wang, 2023, Flynn et al., 2021, Patel and Sambasivan, 2022). Therefore, it is plausible that supply chain agility mediates and moderates the relationship between job satisfaction and sustainability performance in organizations. Thus, the following hypotheses are proposed:

Hypothesis 4. Supply chain agility mediates the relationship between job satisfaction and a firm's sustainability.

Hypothesis 5. Supply chain agility moderates the relationship between job satisfaction and a firm's sustainability.

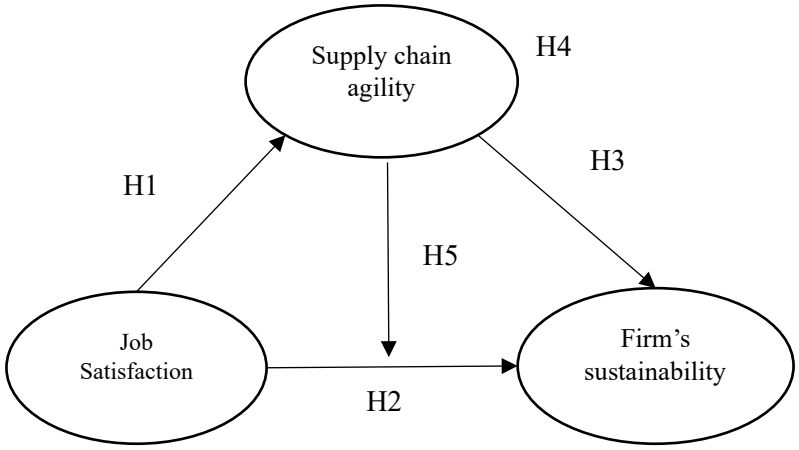

Figure 1. Conceptual framework

3. Research methodology

We have collected primary data through a web-based questionnaire in 2022 across the UAE's seven emirates: Abu Dhabi, Dubai, Sharjah, Ajman, Umm Al Quwain, Ras Al Khaimah and Fujairah. A total of 271 usable responses were received for a response rate of 20%. Non-response bias and common method variance were tested in the study. non-response bias, they are not a significant problem in our study.

Job satisfaction is a single-item measure. The single-item self-rating scales have been long used in many prior studies, the single item is more economical for large-scale surveys and offers many advantages (Abdel-Khalek, 2006, Scarpello and Campbell, 1983). Scarpello and Campbell (1983) suggest that overall job satisfaction may be a more inclusive measure of overall job satisfaction than the summation of many facet responses. The supply chain agility scale was adopted from previous studies (Wang et al., 2023a). The firm's sustainability performance measures were mainly adopted from prior research (Wang and Wang, 2023). We used both exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) to verify the measurement models in our study. The results demonstrate the reliability and validity of the scale (see Table 1).

4. Data analysis

The KMO measure of sampling adequacy is 0.93. Bartlett's test of sphericity is another statistical test used to assess the suitability of data for factor analysis. our results ($p<0.001$) indicate that our data are suitable for factor analysis in this study. Exploratory Factor analysis (EFA) is a statistical technique that is used to identify underlying factors that explain patterns of correlation among a set of observed variables (Fabrigar, 2012). Principal components analysis with a varimax rotation method was applied to assess the common factor, and Kaiser's criterion - Eigenvalues greater than 1.0 was used to determine the number of factors (Fabrigar, 2012). We used the partial least squares structural equation modelling (PLS-SEM) technique to conduct data analysis.

In reflective measurement model assessment, factor loadings should be 0.70 or higher. A composite reliability (CR) value of at least 0.70 is generally considered acceptable for

composite measures. Internal consistency reliability also can be measured by Cronbach's alpha, values between 0.70 and 0.90 range from "satisfactory to good."(Hair et al., 2019).

Convergent validity examines whether two different methods of measuring the same construct produce similar results. An acceptable average variance extracted (AVE) is 0.50 or higher. Discriminant validity examines whether two measures of different constructs produce dissimilar results. To evaluate the discriminant validity of the reflective measures in a structural model, it is recommended to compare each construct's average variance extracted (AVE) with the squared correlation between that construct and all other reflectively measured constructs. This squared correlation serves as an estimate of the amount of shared variance between the constructs. The AVE for each construct should be greater than the shared variance that the construct has with all other constructs in the model.

Nomological validity is used to test the single-item measure (Cheah et al., 2018, Abdel-Khalek, 2006). Nomological validity is a type of construct validity that refers to the extent to which a measure of a particular construct is related to other measures or constructs in a manner that is consistent with theoretical expectations or hypotheses. Our results affirm that the correlations among job satisfaction, customer satisfaction and profitability are highly significant and positive. This indicates the nomological validity of the single-item measure.

Construct validity was demonstrated by the adequacy of the model's fit and both convergent validity and discriminant validity. A PLS-SEM model is considered to be satisfactory if the Bentler-Bonett Normed Fit Index (NFI) is greater than 0.90, and the root mean square error of approximation (RMSEA) is less than 0.08 (Hair et al., 2019). Our results show that NFI=0.88, and SRMR=0.063. Our PLS-SEM model fit is satisfactory.

Table 1 Measurement reliability and validity test

Scale items	Standardised factor loadings	Cronbach's alpha	CR	AVE
Supply Chain Agility (SCA)				
1. Our company is capable of Joint planning with suppliers in purchasing, production and logistics.	0.82	0.93	0.94	0.75
2. Our company is capable of responding to suppliers' and customer's requests at a fast speed	0.90			
3. Our company is capable of adjusting production/service capacity/capability	0.86			
4. When an unexpected situation arises, our company and the supplier would solve problems adequately.	0.87			
5. When an unexpected situation arises, our company is capable of reconfiguring operations process to adapt to the changes	0.88			
6. When a disagreement arises in the transaction process, our company and the supplier would re-evaluate the ongoing situation to achieve a mutual-satisfied solution.	0.86			
Firm's sustainability (FS)				
1. Our company has a strong profitability	0.78	0.85	0.89	0.63
2. Our company has a high market share	0.77			
3. Our company has a reputation in the industry	0.82			

4. Our company is a socially responsible business	0.84			
5. Our company is an environmentally friendly business	0.77			
Job Satisfaction (JS)				
Our company has a high level of employee job satisfaction*	1	1	1	1

Note: *single-item measure

Table 2 Correlation matrix and descriptive statistics for constructs

	Mean	SD	JS	SCA	FS
JS	5.06	1.61	1		
SCA	5.52	0.07	0.649	0.866	
FS	5.63	0.83	0.659	0.711	0.795

Note: The square root of the construct's AVE is provided along the diagonal.

4.3 Structural model

PLS-SEM was used to estimate the research model in the study. Our results already showed a satisfactory model fit. Then we investigate the relationship between job satisfaction, supply chain agility, and a firm's sustainability to test research hypotheses. Table 5 illustrates the results of the hypothesis test in this study. Hypothesis 1 is supported (β=0.65, t=14.68, p<0.001), indicating a direct and positive relationship between job satisfaction and supply chain agility. Our results support Hypothesis 2 (β=0.35, t=6.25, p<0.001), suggesting a direct and positive relationship between job satisfaction and a firm's sustainability. Not surprisingly, Hypothesis 3 is confirmed (β=0.47, t=7.61, p<0.001), this supports a direct and positive relationship between supply chain agility and a firm's sustainability. The results are consistent with previous studies (Gligor et al., 2015, Wang and Wang, 2023, Wright et al., 2007).

4.4 Mediation and moderation analysis

We used a bootstrap method (with n = 1500 bootstrap resamples) to examine whether supply chain agility mediates and/or moderates the relationship between job satisfaction and a firm's sustainability (Preacher and Hayes, 2008). Testing mediating effects was preferred to be conducted using the bootstrapping method (Gligor et al., 2015). The mediating effect of supply chain agility in the relationship between job satisfaction and a firm's sustainability was statistically significant at p < 0.001 with 95 per cent CI = 0.220–0.413. H4 is supported in the study. To test moderation effects, we find that H5 (β=-0.078, t=2.10, p<0.05) with 95 per cent CI = -0.151–0.005, unfortunately, we must reject the moderation hypothesis, because the confidence interval includes zero, this hypothesis (H5) is not supported in our study.

Table 4. Results of a hypothesis test

Hypothesis	Path	Path coefficient	t value	P value	Notes
H1	JS→ SCA	0.65	14.68	<0.001	Supported
H2	JS→FS	0.35	6.25	<0.001	Supported
H3	SCA→ FS	0.47	7.61	<0.001	Supported
H4	JS→ SCA→ FS	0.31	5.84	<0.001	Supported
H5	JS*SCA→FS	-0.078	2.10	<0.05	Not supported

5. Discussion and conclusion

This is the first study that suggests that job satisfaction is a crucial antecedent to achieving supply chain agility and thus highlights the need for organizations to prioritise employee well-being and satisfaction. Our empirical results demonstrate that job satisfaction,

supply chain agility and a firm's sustainability are closely linked, and both job satisfaction and supply chain agility are important factors in the success and sustainability of an organization. By promoting job satisfaction and building an agile supply chain, organizations can improve their efficiency, effectiveness, and flexibility in the supply chain, leading to improved sustainability and success. This may address the workforce shortage, and high labour turnover (Jiang et al., 2009).

According to the two theories RBV and social capital theory, the research provides theoretical implications for the role of employees in achieving sustainability through supply chain agility and highlights the importance of considering employees and their social capital in sustainability transformation efforts. From an RBV perspective, Priem and Butler (2001) argue that RBV falls short in addressing inquiries about how to acquire resources. Our study shows that firms may develop a sustainable competitive advantage by investing in human capital, which may enhance supply chain agility, leading to improved sustainability performance.

From a social capital theory perspective, our findings suggest that employees can be viewed as valuable social assets that contribute to the development of trust, collaboration, and knowledge-sharing within a firm's supply chain networks. Satisfied employees are more likely to have positive attitudes and behaviours towards their work and colleagues, which can create a culture of trust, mutual respect, and collaboration within a company. Working closely with stakeholders to achieve better performance and create value (Wang et al., 2023b). Overall, both theories suggest that firms should invest in their employees and view them as valuable resources and social assets that can contribute to their sustainability goals. We can argue that this human capital investment can lead to enhanced supply chain agility, improved sustainability performance, and a sustainable competitive advantage.

The study provides managerial implications. First, our study highlights the need for managers to prioritise the satisfaction and well-being of their employees post-COVID-19. Numerous studies have already demonstrated the benefits of having happy and satisfied employees in organisations (Locke and Romis, 2007, Wright et al., 2007). Second, this study reveals that job satisfaction and sustainability are closely linked, and managers should strive to create a work environment that promotes both environmental and social sustainability to foster long-term job satisfaction and retention of their employees. Third, the post-pandemic era is characterized by a high degree of uncertainty, such as Brexit, the Russian invasion of Ukraine, China–United States trade war, extreme weather, natural disaster, etc. It has been suggested that firms operating in highly uncertain environments should adopt agile strategies (Christopher, 2000). Managers must recognise the significant role of their employees in building resilience post-COVID-19. Our study suggests that agile strategies can serve as a crucial intermediary between job satisfaction and sustainability performance in organizations.

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