

THE ROLE OF ORGANIZATIONAL RESILIENCE IN SOCIAL, ECONOMIC, ENVIRONMENTAL AND HUMAN SUSTAINABILITY: EVIDENCE FROM CHINESE FMCG SECTOR

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Article History:

- received 24 January 2023
- accepted 15 November 2023
- first published online 15 March 2024

Abstract. Despite the extensive research on sustainability dimensions, the researcher has not completely addressed all the dimensions of sustainability. Most of the times, sustainability is considered as a whole variable, however, the work on separate dimensions is lacking in the literature. Particularly, human sustainability is rarely addressed by the previous studies. Additionally, various dimensions of sustainability such as social, economic, environmental and human is rarely tested in relation to the organizational resilience. Therefore, to fill this gap, this study considered to examine the role of organizational resilience in social sustainability, economic sustainability, environmental sustainability and human sustainability in a sample of FMCG employees. The study used non-probability snowball sampling to collect data from managerial level employees. Data analysis is carried out by using SPSS. Findings identified that; organizational resilience has influential role in various dimensions of sustainability. The focus of the policymakers on organizational resilience can increase the socio-economic and environmental sustainability. The operational efficiency can strengthen the relationship between organizational resilience and sustainability.

Keywords: organizational resilience, social sustainability, economic sustainability, environmental sustainability, human sustainability, operational efficiency.

JEL Classification: Q56, J24, O15, B55, F64, O13, O44.

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1. Introduction

The achievement of sustainability among the organizations is most important to achieve higher performance in various domains of the organization (Andrade et al., 2020; Fitriani et al., 2020; Hussain et al., 2018; Kadłubek et al., 2022). It is critical to attain higher performance for the better organizational performance, employee performance and lead to solve different social issues (Arau, 2020; Ncube & Koloba, 2020; Priyanto & Murwaningsari, 2022). But, the achievement of sustainability in all domains is most crucial task for the organizations. Particularly, the achievement of sustainability in various matters of organization such as social, economic, environmental and human is not easy in limited resources. No doubt, these types

of sustainability can help to achieve organizational objectives, but it is one of the challenges for the organizations.

Resilience as a concept has widely been used during the peak of pandemic. The most recurring statement amongst all is that “resilient economies are the ones that will emerge best from the crisis, or that resilience is needed to restart”. Although, government and other institutions view resilience as “a view to building or maintaining it”. However, its exact meaning is not quite cleared (Miceli et al., 2021). The concept illustrates the “capability of a system to withstand any disturbance, organizing a response and returning to normal operation”. But it cannot be confused with “resistance to change”. Resilience gains the ability from intrinsic characteristics of system which provides opportunity to address critical situation in effective manner. From organizational perspective, components including “knowledge, the ability to react to change, openness, availability of adequate resources, flexibility and a wide network of relationships” makes the organization resilient. Resilience as a concept is quite topical that have caught generous amount of attention from scholars since past two decades in several research areas. Although it has been conceptualized in a heterogenous manner due to which various definitions and approaches emerged with different interpretations. However, there is a bleak knowledge about organizational resilience when we intertwine it with sustainability dimensions (Barbier & Burgees, 2020; Balugani et al., 2020; Kumar et al., 2023; Takewaki et al., 2020).

Similar with the other organizations, Chinese Fast-moving Consumer Goods (FMCG) industry (Akpur, 2020; Kikulwe & Asindu, 2020; Wahhab et al., 2021; Wang et al., 2021) is also facing the problem of sustainability in various perspectives. FMCG companies have low profit margins which causes to decrease in economic sustainability. Low level of economic sustainability is a major obstacle in the way to achieve other dimensions of sustainability such as social sustainability, environmental sustainability and human sustainability. The limited resources of the companies linked with FMCG companies decreasing the performance of sustainability index. The problems related to the social, economic, environmental and human sustainability is connected with most of the FMCG companies, but satisfactory achievement in all the dimensions of sustainability is most important to sustain in the market. This study proposed that the issues of sustainability can be resolved through organizational resilience. As the capability of the company to anticipate, prepare for and respond can help to promote sustainability. The ability of the company to respond to various challenges such as social, economic, environmental and human can foster the sustainable practices.

Literature has extensively focused on social sustainability, economic sustainability, environmental sustainability and human sustainability (Govindan et al., 2021; Gudalov & Treshchenkov, 2020; Khoma & Vdovychyn, 2021; Nilashi et al., 2019; Rai et al., 2021), however, most of the studies have not introduced organizational resilience as a possible solution of various sustainability problems. Few of the studies have focused on resilience factor of organizations along with sustainability such as social sustainability (Corrales-Estrada et al., 2021; Kore et al., 2022; Mahalingam, 2022; Sarisky, 2021) but various other dimensions such as human sustainability, environmental sustainability and economic sustainability are very limited in relation to the organizational resilience. The relationship between organizational resilience with hu-

man sustainability is completely ignored by the previous studies. In addition, the effect of organizational resilience on sustainability can be promoted through operational efficiency. The interaction effect of operational efficiency is first time considered by the current study between organizational resilience and sustainability dimensions.

In present study, we emphasize on multiple dimensions of sustainability which has become a major concern especially after recent pandemic. In order to cover developing economy context, the study carries out in China which has the fastest economic growth along with high GHG emissions. The previous studies lacking which makes the present study more significant are; there is a need of empirical research that emphasizes on the holistic assessment of organizational resilience with the inclusion of quarter-dimensional assessment of sustainability. Secondly, the study attempts to evaluate the moderating role of operational efficiency on said relationship in the context of Chinese FMCG companies. Third, literature is scarce which attempted to converge organizational resilience and sustainability and focusing on the maintenance of sustainable values. With these highlights, the present article offers its key objective which aim to find out; how organizational resilience affect each dimension of sustainability directly or either in the presence of moderator; operational efficiency.

The paper is divided into five sections. The introductory part of the study establishes the argument to provide base through which study's motivation and significance can be justified. The next section significantly explains the prior literature relevant to the topic. The section also provides theoretical reasoning to back up the proposed framework on which hypothesis are formulated. The next section of the study is about data and materials which sheds light on research design, study sample, population, adopted questionnaire and data techniques. The findings section explains the results which is being followed by discussion part. Finally, the study has concluded along with some implications and future suggestion.

2. Literature review

2.1. Fast-Moving Consumer Goods (FMCG)

Fast-moving consumer goods (FMCG) is known as consumer-packaged goods (Dallago & Rosefielde, 2019; Felis & Rosłaniec, 2019; Hmelak et al., 2021; Korotaj & Mrnjaus, 2021; Neboh et al., 2022), are products that are sold quickly and at a comparatively low cost. Examples of these products include non-durable domestic goods such as packaged foods, drinks, toiletries, over-the-counter drugs, chocolates, cosmetics, various dry goods as well as other consumables. These are the cheaper goods which are required to sell quickly as compared to the other goods. These goods include; milk, gum, beer, fruit as well as vegetables, common drugs like aspirin and soda. FMCG goods are non-durable goods available for the daily use of the people. The Figure 1 shows the FMCG products. FMCG industry is one of the large industries which has major importance globally. It has great importance because FMCG goods are connected to the basic necessities of the people (Fanea-Ivanovici & Baber, 2021; González et al., 2021; Neboh et al., 2022; Otieno & Maina, 2022). With the growing population of China, the demand of FMCG goods is increasing continuously. Due to the increase in demand of these products, the sustainability achievement is major issue in Chinese FMCG industry.

2.2. Hypotheses development

Organizational resilience can be described as capability of an organization to anticipate, prepare for, respond to any situation and adapt to rapid change as well as sudden disruptions to survive and prosper. It is the harmonious integration of all business functions which promote decision making process. It has major impact on various operations of the business organizations (Corrales-Estrada et al., 2021; Kim & Upneja, 2021; Kusa et al., 2021; Miceli et al., 2021; Yuan et al., 2022). However, the current study considered one aspect of organizations which is influenced by the organizational resilience. This study considered four dimensions of sustainability to examine the role of organizational resilience along with the operational efficiency as moderating variable. Sustainability dimensions include; social, economic, environmental and human. These dimensions are not collectively considered in the FMCG industry of China and any other organization. The relationship between organizational resilience, operational efficiency, social sustainability, economic sustainability, environmental sustainability and human sustainability is highlighted in the framework of the study in Figure 2.

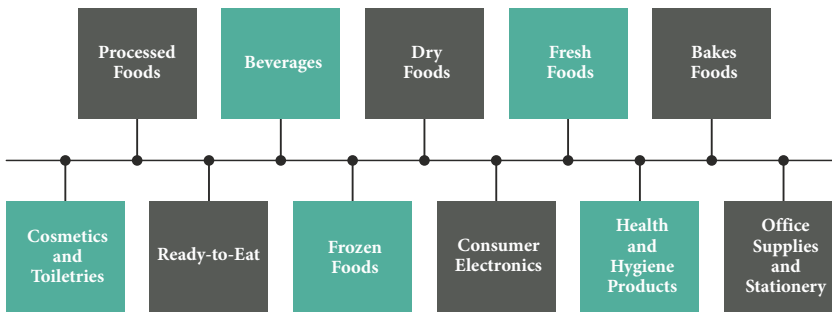


Figure 1. Fast-moving consumer goods (FMCG)

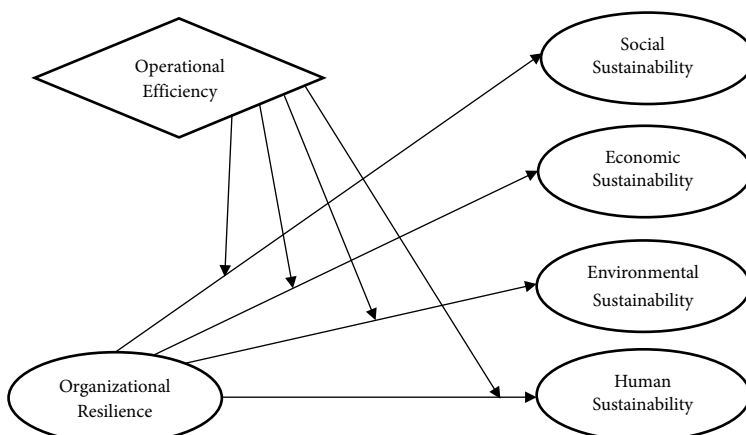


Figure 2. Study framework

2.2.1. Organizational resilience and social sustainability

Social sustainability is connected with the business organizations and impact on people. The business organizations working in any area has impact on the lives of people directly and indirectly. Social sustainability grounded on identifying and handling business influences, both positive and negative, on people living in a specific area. The quality of a business's relationships and engagement with its stakeholders is critical to maintain sustainability. Organizational resilience factor such as anticipation and preparation of the SMEs can resolve various issues related to the people. The achievement of satisfactory level in social sustainability is purely based on the capabilities of the firm which can be determined through organizational resilience factors. Furthermore, social sustainability is linked with employees of the organization. The business support for the employees in difficult times also comes under social sustainability. A study carried out by Rai et al. (2021) reported that organizational resilience has positive role to enhance social sustainability. Similarly, a study conducted by Gečienė (2020) proved that organizational resilience has relationship with regional social sustainability. The increase in organizational resilience can increase the social sustainability. Hence, following hypothesis is proposed.

H1. Organizational resilience has a positive and significant relationship with social sustainability.

2.2.2. Organizational resilience and economic sustainability

Economic sustainability is a combined portion of sustainability and means that the business must use, protect and sustain different resources such as human resources and material resources to create long-term justifiable values by optimum use, recovery as well as recycling (Ajour & Alikor, 2020; Huang et al., 2021; Kou et al., 2021). Economic sustainability focused on the use of investment in various corporate social responsibility (CSR) activities and ensured that profit of the company must not be affected. Furthermore, economic sustainability of SMEs is depends on waste management and material cost. The proper waste management can help to promote economic sustainability (Slorach et al., 2020). Literature identified that organizational resilience can effect economic sustainability (Miceli et al., 2021). Waste management and CSR has direct effect on economic condition of the business which can be managed through organizational resilience. Furthermore, recycling of the material has relationship with economic sustainability (Briassoulis et al., 2021). The organizational capability based on resilience factor has the potential to promote sustainability. Therefore, by considering the evidences from previous studies, it is hypothesized that.

H2. Organizational resilience has a positive and significant relationship with economic sustainability.

2.2.3. Organizational resilience and environmental sustainability

Environmental sustainability is the responsibility to preserve natural resources and shield global ecosystems to support health and wellbeing. Business always has significant effect on the environmental sustainability (Georgiadis & Besiou, 2010; Jayeola, 2015). Because the

material used in the manufacturing of products releases the harmful substances which can influence on human lives. It is the responsibility of business organizations to control harmful substances and protect the environment for long term sustainability. Environmental sustainability can be ensured through organizational resilience. As reported by Haffar and Searcy (2018), organizational ecological resilience has influence on environmental sustainability. The environmental committee development among the organizations can decrease the impact of business on environment. Additionally, environmental impact assessment reports and external consultants for environmental policies can decrease the negative effect of environmental performance. A study conducted by Clément and Rivera (2017) reported the key influence of organization resilience on environment. Hence, it is hypothesized that.

H3. *Organizational resilience has a positive and significant relationship with environmental sustainability.*

2.2.4. Organizational resilience and human sustainability

Human sustainability includes the growth of skills as well as human capacity (Nilashi et al., 2019) to help the functions and sustainability of the companies and to encourage the comfort of communities along with the society. Therefore, human sustainability is connected with the organizational benefits, employees of the organization as well as society (Kobayashi et al., 2018). This study considered the human sustainability in relation to the employees of the organization. Human sustainability among the organizations is based on the acknowledgment of the employees towards the achievement of various objectives. It is also based on the collaboration between the employees as well as ethical manners. The human aspect of sustainability among the organizations is affected by several factors and the most important factor is organizational resilience. Organizational resilience is one of the key influential elements which can decrease or increase in the level of sustainability among the employees (Rai et al., 2021). The focus on the organizational resilience can increase the employees working and satisfaction level (Kim, 2020). As it is reported by the literature that employees of the organization have relationship with resilience factors (Liang & Cao, 2021). Literature also provided the relationship between sustainability and organizations resilience but literature have not specifically examined the impact on human sustainability.

H4. *Organizational resilience has a positive and significant relationship with human sustainability.*

2.2.5. Operational efficiency

In the context of business, operational efficiency is a dimension of organizational means allocation. It can be described as the specific ratio between an output grown from the business activity and an input used to conduct a business operation. Operational efficiency will be increased in case, if the output ratio increases in comparison with the input ration. Lower waste material is another important example of operational efficiency. The operational efficiency has influence on sustainability dimensions. Operations of the organization have influence on sustainability dimensions. Prior studies indicate that operational efficiency has major relationship with organizational sustainability (Kwon & Lee, 2019; Ning et al., 2021). The

relationship between operational efficiency and organizational resilience has collective effect on sustainability dimensions. Better operations of the organization can lead to the better effect of organizational resilience on sustainability dimensions. Various aspects of sustainability such as social, economic, environmental and human can be promoted through the environment of better operational efficiency. Better management of the operations of organizations leading to increase overall objective of sustainability with the help of organization resilience. Therefore, the current study proposed operational efficiency as moderating variable between organizational resilience and sustainability dimensions. Operational efficiency has influence on the relationship between organizational resilience and sustainability dimensions. Therefore, following moderating effects are proposed.

- H5. Operational efficiency moderates organizational resilience and social sustainability relationship.*
- H6. Operational efficiency moderates organizational resilience and economic sustainability relationship.*
- H7. Operational efficiency moderates organizational resilience and environmental sustainability relationship.*
- H8. Operational efficiency moderates organizational resilience and human sustainability relationship.*

3. Methodology

The methodology part includes data and material along with the highlighted tools and techniques that are employed in the study in order to assess data. The present study utilized quantitative approach to assess pretesting theory and for that purpose, survey instrument was adopted from previous related literature. The study also used cross-sectional primary data and targeted FMCG sector. However, only upper management employees were being targeted because only those employees have proper strategic knowledge about firm. In addition to this, the study used non-probability snowball sampling method to gather data from participants.

3.1. Variable measures

Social sustainability is measured by considering the fair wages to the employees, health and safety practices for the employees, salaries of the employees, rights of the employees, social norms, training of the employees and job creation. Economic sustainability is measured by considering the CSR, profit of the company, material cost, sustainable procedure, resource consumption, cost reduction and quality of products. The questionnaire for social sustainability and environmental sustainability is adapted from Rai et al. (2021). Environmental sustainability is considered by considering the questionnaire related to the environmental committee creation for environmental issues, environmental impact assessment, program to reduce environmental impacts and development of environmental policies. Few changes are made in the questionnaire which is adapted from Smerecnik and Andersen (2011). Human sustainability

is addressed through the human capital perspective in which Ethical leadership is preferred which is measured by highlighting ethical perspective of leadership, adapted from Fabio and Peiró (2018). Organizational resilience is considered through robustness and crisis anticipation. For robustness, this study considered the management of predictable and unknown challenges, management of operations, supply chain activities and customer requirements. Crisis anticipation is addressed through ability of the firm to carry out operations smoothly, data management of disruptions, investment in information system and crisis prediction. Operational efficiency is addressed by adding the questionnaire related to the managing operational costs, material management and inventory costs and waste of materials as well as process. Scale items of variables are given in appendix.

3.2. Data collection process

This study collected 170 questionnaires from the respondents. In total, 550 questionnaires were distributed. The population of the study is FMCG industry of China. Various companies dealing with the non-durable household goods such as packaged foods, beverages, toiletries, candies, cosmetics, over-the-counter drugs, dry goods, and other consumables are considered in this study for data collection. The managerial employees working among these companies were selected as the respondents of the study. Self-administrated questionnaire was used in this study. Before the distribution of the questionnaires, it was ensured that the data will remain confidential and will only be used for the current study. The identification of the respondents was not required to ensure the privacy. Data is collected in four sections. The first section of the questionnaire was developed to collect data related to the profile of respondents. The second section was developed to collected data related to the independent variable; organizational resilience. The third section was developed to collect data related to the dependent variables; social sustainability, economic sustainability, environmental sustainability and human sustainability.

3.3. Analysis method

This study employed Statistical Package for the Social Sciences (SPSS) version 21. Correlation is used to check the strength of the relationship and multiple regression is used to examine the relationship between variables. Furthermore, to check the moderation effect, hierarchical multiple regression is preferred in this study. To test moderation, this study mainly looked at the interaction effect between X and M and whether such an effect is significant in predicting Y, as shown in Figure 3.

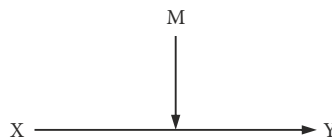


Figure 3. Moderation effect method used in this study

4. Results and discussion

4.1. Profile of respondents

The identification of respondent's profile is important (Kwak & Radler, 2002) because it can help to strengthen the implications. By considering the importance of respondent's profile, this study addressed the gender, age, education and marital status of the employees working in FMCG industry of China. Results of the demographic analysis found the major contribution of males in FMCG industry. 62% of the employees are male and 38% of the employees are female. The majority of the respondents have age between 31 to 40 years following by the 30% employee between 21 to 30 years of age. 23% employees are between the age of 41 to 50 years. The lower percentage of the employees is between 51 to 60 years of age which is 12%. Additionally, results provided the detail of marital status and identified that most of the participants are married. As 58% respondents are married and 40% respondents are unmarried. On the other hand, 2% of the respondents come under divorced, widow or under any other category. The education status of the employees working in FMCG industry shows that most of the respondents are master degree holders, following by the bachelor which is 41%. Only 1% of the respondents have doctoral degree. Therefore, it is observed that most of the employees working in FMCG industry of China are male, married and master's degree holders with 31 to 40 years old. The profile of the respondents is given in Table 1.

4.2. Data normality

While analyzing the data, data normality is one of the most important measures before to examine the relationship between different constructs (Ghosh & Mitra, 2020). Therefore, normality of the data examined the distribution of data. To examine the normality of the data Skewness and kurtosis values were considered. Skewness and Kurtosis values can determine the normal or non-normal distribution of the data. For normal distribution, Skewness value should be between ± 1.0 and Kurtosis value should be between ± 3.00 which is reported by Meyers, Gamst, and Guarino (2009). Results of the normality test proved that the values of Skewness are between ± 1.0 and Kurtosis is between ± 3.00 which confirmed the normality of the data.

Table 1. Respondents profile

Variables	Category	Percentage
Gender	Male	62%
	Female	38%
Age	21–30 Years	30%
	31–40 Years	35%
	41–50 Years	23%
	51–60 Years	12%
Marital Status	Single	40%
	Married	58%
	Others	2%
Education	Bachelor	41%
	Master	58%
	Ph.D.	01%

4.3. Correlation analysis

Correlation analysis is carried out to examine the strength of the relationship between variables. Literature identified that, correlation values between 0–0.19 is regarded as very weak, 0.2–0.39 is considered as weak, 0.40–0.59 is considered as moderate and correlation values between 0.6–0.79 is considered as strong (Taarnhøj et al., 2020; Younes et al., 2021). Results of the correlation analysis indicated that organizational resilience has strong correlation with social sustainability and economic sustainability with correlation values 0.65 and 0.6, respectively. The correlation between organizational resilience and environmental sustainability is 0.41 which is moderate. Furthermore, the correlation between organizational resilience and human sustainability is weak with correlation value 0.4.

4.4. Multiple regression analysis

A complex framework is presented in the study which is based on one independent variable; organizational resilience and four dependent variables; “social sustainability, economic sustainability, environmental sustainability and human sustainability”. Additionally, the framework of the study is based on one moderating variable; operational efficiency. To analyze the relationship of this complex framework, the current study used multiple regression analysis which is more suitable to the current study. As this study want to know how strong the effect of organizational resilience on social sustainability, economic sustainability, environmental sustainability and human sustainability. In this case, multiple regression is more suitable. Thus, regression analysis is carried out to examine the effect of independent variable on dependent variables. For this purpose, significant value ($p > 0.05$) considered to check the relationship between variables. Beta value is considered to examine the nature of the relationship.

4.5. Hypotheses testing results

Results of regression analysis are reported in Table 2. The effect of organizational resilience on social sustainability is significant ($\beta = 0.71$, $p < 0.05$). Therefore, the hypothesis 1 is accepted. The relationship of organizational resilience with economic sustainability is also significant which shows that hypothesis 2 is accepted ($\beta = 0.61$, $p < 0.05$). Furthermore, effect of organizational resilience on environmental sustainability is significant ($\beta = 0.28$, $p < 0.05$) which supported the hypothesis 3. The hypothesis 4 is accepted because the relationship between organizational resilience and human sustainability is significant ($\beta = 0.46$, $p < 0.05$). The model of the current study with direct effect results is shown in Figure 4.

The relationship between organizational resilience and social sustainability has beta value 0.71 which is positive. The positive beta value shows the direct relationship between organizational resilience on social sustainability. The increase in organizational resilience can increase the social sustainability among the FMCG industry. However, the decrease in organizational resilience can have the possibility to decrease social sustainability. Previous literature on organizational resilience and social sustainability found consistent with the current study. Previous studies such as Rai et al. (2021) and Miceli et al. (2021) found similar results.

Table 2. Regression analysis results

Hypothesis	Relationship	β	C.R	P-Value	Decision
Hypothesis 1	Organizational Resilience → Social Sustainability	0.71	5.222	***	Accepted
Hypothesis 2	Organizational Resilience → Economic Sustainability	0.61	4.458	***	Accepted
Hypothesis 3	Organizational Resilience → Environmental Sustainability	0.28	3.92	***	Accepted
Hypothesis 4	Organizational Resilience → Human Sustainability	0.46	4.11	***	Accepted

Note: $p < 0.05 = *$; $p < 0.01 = **$; $p < 0.001 = ***$.

Furthermore, organizational resilience and economic sustainability relationship is significant. It indicated that similar results in case of social sustainability and economic sustainability. Therefore, among the FMCG industry of China, the promotion of economic sustainability is possible with the help of organizational resilience. Previous studies addressed the association between organizational resilience with sustainability (Corrales-Estrada et al., 2021; Miceli et al., 2021; Sezen-Gültekin & Argon, 2020) and found significant results but not specifically with the economic sustainability.

Moreover, organizational resilience has positive effect on economic sustainability. Hence, the economic sustainability among the FMCG industry can be enhanced through economic sustainability. These results have similarity with other studies in relation to organizational resilience and environment (Clément & Rivera, 2017), however, the specific relationship with environmental sustainability is very rare.

Additionally, the effect of organizational resilience on human sustainability found by the current study has beta value 0.46. The positive sign with beta value highlighted the important insights. It shows that the human sustainability among the FMCG industry can be well managed through organizational resilience. The influence on organizational resilience on human sustainability is positive which shows that the focus on organizational resilience can increase the human sustainability. Literature addressed the relationship between human resources and organizational resilience, but the variable of human sustainability is not addressed in relation to the organizational resilience. Therefore, after filling the literature gaps, this study shows that organizational resilience has important contribution among various dimensions of sustainability.

4.6. Moderation effect results

Aforementioned section was developed to consider the effect of independent variable on dependent variables. This section is developed to examine the moderation effect of operational efficiency between the organizational resilience and dimensions of sustainability. In this step of the data analysis, four moderation effects are considered between organizational resilience and each dimension of sustainability. The interaction term is used to measure each moderation effect (Holmbeck, 1997). This study developed four separate models to test the moderating effect of operational efficiency. Therefore, the interaction term is formed by multiplying the scores attained from independent and moderating variables. The problem of

multicollinearity is avoided by using standardized values of these variables which is recommended by Aiken et al. (1991).

Moderating Effect of Operational efficiency between Organizational Resilience and Social Sustainability

While testing the moderating effect of operational efficiency, organizational resilience, operational efficiency and the interaction was regressed on the social sustainability. Results are highlighted in Table 3. The interaction effect is significant ($\beta = 0.421$, $p < 0.05$) and moderation effect strengthening the relationship between organizational resilience and social sustainability. Hence, results of the study supported hypothesis 5.

Table 3. Moderating effect of operational efficiency between organizational resilience and social sustainability

Hypothesis	Relationship	β	C.R	P-Value	Decision
Hypothesis 5	Organizational Resilience → Social Sustainability	0.321	3.789	***	
	Operational efficiency → Social Sustainability	0.221	3.9	***	
	Interaction Term → Social Sustainability	0.421	4.25	***	Accepted

Note: $p < 0.05 = *$; $p < 0.01 = **$; $p < 0.001 = ***$.

Moderating Effect of Operational efficiency between Organizational Resilience and Economic Sustainability

While testing the moderating effect of operational efficiency, the independent variable (organizational resilience), moderating variable (operational efficiency) and the interaction term (organizational resilience x operational efficiency) was regressed on the dependent variable (economic sustainability). Results are highlighted in Table 4. The interaction effect is insignificant ($\beta = 0.013$, $p > 0.05$). The moderation effect has no influence on the relationship between organizational resilience and economic sustainability. Hence, results of the study not supported hypothesis 6.

Table 4. Moderating effect of operational efficiency between organizational resilience and economic sustainability

Hypothesis	Relationship	β	C.R	P-Value	Decision
Hypothesis 6	Organizational Resilience → Economic Sustainability	0.121	3.03	0.018	
	Operational efficiency → Economic Sustainability	0.39	4.708	***	
	Interaction Term → Economic Sustainability	0.013	0.428	0.625	Not Accepted

Note: $p < 0.05 = *$; $p < 0.01 = **$; $p < 0.001 = ***$.

Moderating Effect of Operational efficiency between Organizational Resilience and Environmental Sustainability

While testing the moderating effect of operational efficiency, the independent variable (organizational resilience), moderating variable (operational efficiency) and the interaction term (organizational resilience x operational efficiency) was regressed on the dependent

variable (environmental sustainability). Results are highlighted in Table 5. The interaction effect is significant ($\beta = 0.512$, $p < 0.05$) and moderation effect strengthening the relationship between organizational resilience and environmental sustainability. Hence, results of the study supported hypothesis 8.

Table 5. Moderating effect of operational efficiency between organizational resilience and environmental sustainability

Hypothesis	Relationship	β	C.R	P-Value	Decision
Hypothesis 7	Organizational Resilience → Environmental Sustainability	0.258	5.01	***	
	Operational efficiency → Environmental Sustainability	0.289	4.52	***	
	Interaction Term → Environmental Sustainability	0.512	8.58	***	Accepted

Note: $p < 0.05 = *$; $p < 0.01 = **$; $p < 0.001 = ***$.

Moderating Effect of Operational efficiency between Organizational Resilience and Human Sustainability

While testing the moderating effect of operational efficiency, the independent variable (organizational resilience), moderating variable (operational efficiency) and the interaction term (organizational resilience x operational efficiency) was regressed on the dependent variable (human sustainability). Results are highlighted in Table 6. The interaction effect is insignificant ($\beta = 0.021$, $p > 0.05$). The moderation effect has no influence on the relationship between organizational resilience and human sustainability. Hence, results of the study not supported hypothesis 8.

Table 6. Moderating effect of operational efficiency between organizational resilience and human sustainability

Hypothesis	Relationship	β	C.R	P-Value	Decision
Hypothesis 8	Organizational Resilience → Human Sustainability	0.321	4.99	***	
	Operational efficiency → Human Sustainability	0.258	4.1	***	
	Interaction Term → Human Sustainability	0.021	0.981	0.109	Not Accepted

Note: $p < 0.05 = *$; $p < 0.01 = **$; $p < 0.001 = ***$.

The model of the current study with moderating effect results is shown in Figure 4. According to the moderation effect results, operational efficiency is proved as moderating variable between organizational resilience and social sustainability. These results identified that operational efficiency has influence on organizational resilience and social sustainability. Operational efficiency is an important factor which can enhance the positive relationship between organizational resilience and social sustainability. The beta value of the relationship between organizational resilience and social sustainability is positive, on the other hand, the beta value of interaction term (0.421) is also positive, therefore, organizational resilience strengthens the association between organizational resilience and social sustainability. Previ-

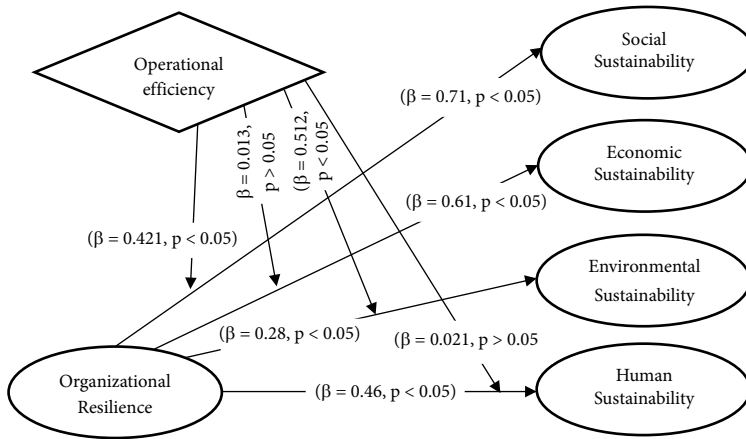


Figure 4. Framework of the current study showing the results of hypotheses

ous studies have not addressed the moderation role of operational efficiency, however, the direct effect of operational efficiency with sustainability is also significant (Nadkarni & Haider, 2022) which is consistent with this study.

Furthermore, according to the moderation effect results, operational efficiency is proved as moderating variable between organizational resilience and environmental sustainability. Previous studies identified the relationship between operational efficiency and environmental sustainability (Kwon & Lee, 2019), but the moderation effect of operational efficiency was missing. These results recognized that operational efficiency has effect on the relationship between organizational resilience and environmental sustainability. While considering the beta value of the relationship, it is found that operational efficiency has positive influence on the relationship between organizational resilience and environmental sustainability. The beta value of the relationship between organizational resilience and environmental sustainability is positive, on the other hand, the beta value of interaction term (0.512) is also positive, consequently, organizational resilience strengthens the association between organizational resilience and environmental sustainability. On the other hand, it is observed that interaction effect of operational efficiency between organizational resilience and economic sustainability is insignificant. Finally, interaction effect of operational efficiency between organizational resilience and human sustainability is insignificant. Therefore, operational efficiency has no influence on the relationship between organizational resilience and economic sustainability. Additionally, it does not have any influence on the relationship between organizational resilience and human sustainability.

5. Conclusions

The current study attempted to address the influence on organizational resilience on sustainability dimensions. Findings of the study concluded that organizational resilience has key importance to maintain sustainability among the FMCG industry of China. Organizational resilience has the potential to promote sustainability practices related to the social, economic,

environmental and human perspective. The organizational robustness and crisis anticipation cannot be ignored within the organizations because it can strengthen the social, economic, environmental and human sustainability conditions. The improvement of resilience factor among the organizations can solve various social problems among the organizations. It can influence the employee working in different organizations which lead to the higher performance. Similarly, the economic condition of the organization can be increased through organizational resilience. Various procedures can be adopted to enhance the efficiency of the operations which can increase the profit ratio. Therefore, economic objectives can be achieved through the organizational resilience. Both the issues related to the social and economic sustainability can be managed through improvement on the organizational robustness and crisis anticipation. Furthermore, the environmental sustainability and human sustainability can also be achieved through resilience. The environmental issues in the society can be well managed by the organizations through organizational robustness and crisis anticipation. Additionally, it is also observed that the issues related to the human sustainability can be handled through organizational robustness and crisis anticipation. Thus, organizational resilience is proved to be most important factor which strengthen the condition of social sustainability, economic sustainability, environmental sustainability and human sustainability. Nevertheless, the role of operational efficiency cannot be neglected because it has the ability to strengthen the relationship between organizational resilience and sustainability. It can increase the positive role of organizational resilience on sustainability practices such as social sustainability and environmental sustainability. The relationship between organizational resilience and operational efficiency can foster the achievement of social sustainability and environmental sustainability among Chinese FMCG industry.

5.1. Implications for policymakers

Findings of the study highlighted the important insights for the policymakers. This study addressed the key importance of organizational resilience in sustainability; therefore, the policymakers should focus on organizational resilience while managing organizational sustainability. More specifically, the practitioners must understand the important contribution of organizational robustness and crisis anticipation as important dimensions of organizational resilience. The consideration of organizational robustness and crisis anticipation while making the strategies for Chinese FMCG industry is most important. These implications are not limited to the Chinese FMCG industry, but it is also applicable on the other industries of China as well as across the border. This study proved the key contribution of organizational resilience in social sustainability; therefore, the policymakers should promote various factors of organizational resilience to enhance organizational sustainability. The factor influencing positively on the organizational resilience must be promote to enhance overall level of organizational sustainability. Similarly, while making strategies to enhance the economic condition of organizations, the strategies to improve organizational robustness and crisis anticipation is most critical. Additionally, as this study proved the key contribution of organizational robustness and crisis anticipation in environmental sustainability, therefore, policymakers should maintain the environmental help through resilience factors. Human sustainability is another important factor which is less addressed by the previous studies, consequently, literature has not provided practical implications.

5.2. Limitations and future directions

By considering human sustainability along with the organizational resilience, this study recommended the managers of FMCG industry to enhance human sustainability through promoting organizational resilience. Additionally, along with the resilience factors, the role of operational efficiency among the Chinese FMCG companies cannot be neglected as this study provided the important recommendation for the policymakers which is helpful to enhance social and environmental sustainability. The management of companies should focus on the integration of organizational resilience and operational efficiency to enhance social sustainability and environmental sustainability. Finally, the management of FMCG companies should encourage the organizational resilience among the companies to increase the level of sustainability practices.

Funding

This study was funded by a key project of Social Sciences Foundation of Jilin Provincial Department of Education (No. JJKH20220156SK) and the National Social Science Foundation of China (No. 22BH142, No. 20BJY107 and No. 22BJY157).

Data availability

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests

The author declare that they have no competing interests.

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