The link between corporate strategy and innovation in developing countries: The post-crisis trends and challenges

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Abstract: *This study aims to identify interrelationships between corporate strategy and innovation in developing countries in the post-COVID-19 context. The purpose of the study is to form a model that would allow to consider and process the impact of the innovational operations to the choice of the corporate strategy and its development within the operational domains of the developing countries, which ultimately can be able to meet the challenges in their economic growth and therefore contribute to the better outcomes of the post-crisis situations. The research hypotheses are that the post-crisis innovation activities do not depend on (H1) the ownership of the firm, (H2) its scale of operation, (H3) and industry but on (H4) the firm's life cycle stage, and (H5) the strategy complexity level. Here, the survey of 424 random respondents from 424 Chinese firms provides evidence that refutes the first and third hypotheses (H1 and H3) while confirming other hypotheses (H2, H4 and H5). In addition, most respondents disagreed with the statement that "innovation is of secondary importance during the post-crisis period," which suggests that innovation is a prerequisite for sustainable development. In addition to the previous research connected with the issues of corporate strategy and innovation, the present study has come up with the original hypotheses providing refutations and a new vision to the problem. The research findings present an extension to the understanding of corporate strategy and innovation during the post-crisis period, hence leading to the emergence of the up-to-date instruments able to solve the issues of the real economy after the COVID-19 crisis. The questionnaire, chosen as the research method, consisted of 18 2-section items, including a 7-item respondent profile and a 9-item analytical section. The respondent profile's questions were: year of establishment of the firm (Q1), form of ownership (Q2), respondent's position at the enterprise (Q3), sector in which the firm operates (Q4), firm size (Q5), profitability dynamics (Q6) and employment dynamics (Q7). The analytical section asked about the corporate strategies and innovation interactions. Q11 and Q12 resulted in 19.3% and 23.2% higher positive choice by private and limited liability firms, agricultural firms' results were 27.3% below the average, start-ups and new firms' activities demonstrated 14.7% more intensive innovative steps. Diversification is linked to the increased involvement into innovations, while the decreased level of innovation activity is linked to merger and acquisition practices. Ultimately, the first and second hypotheses (H1 and H3) were empirically proved to be false, and the remaining hypotheses (H2, H4 and H5) were confirmed. The present findings can be used to inform corporate strategy decisions in the real sector of the economy after the COVID-19 pandemic.*

Keywords: *Corporate strategy, innovation, link between corporate strategy and innovation, post-crisis economy, sustainable development.*

JEL Classification: *H12, M14, Q56.*

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Introduction

The beginning of the 21st century was marked by a large number of challenges, often transcending national boundaries and requiring supranational solutions. Amidst the rapid advancement in technology, which redefined nearly every sphere of human activity, the strategic management requirements of a firm have shifted to a fundamentally new plane. The devastating consequences of climate change, natural disasters, and large-scale epidemics implicating the turbulence of the global economy also played a part in this transition. Therefore, researchers have continued to create various corporate strategies over the past decades (Feldman, 2020; Mendes, 2018). As an eminent driver of corporate development (Christensen et al., 2018), innovation has attracted the attention of both academia and companies in the real sector of the economy (Dong et al., 2024; Dzhuzha et al., 2020; Karpuntsov & Veresha, 2022; Menz et al., 2021). The COVID-19 pandemic, on the other hand, has radically changed the business environment once again, exposing the many shortcomings of the management system. The efficient and streamlined business models, considered virtually flawless before the pandemic, have proven to have fragile supply chains, and transnational businesses that relied heavily on the international division of labour turned out to be vulnerable (Ozdemir et al., 2022). In these conditions, corporations sought to shift focus from flexibility, frugality, environmental friendliness, and efficiency to sustainability, reliability, and risk management (Ozdemir et al., 2022). This decision seems logical, yet when developing a corporate strategy, changing the priorities may affect the innovation aspect of the strategy. The risk of this happening necessitates empirical research into the mutual influence of post-crisis corporate strategy on innovation. Of particular importance is exploring the said link in the context of transition economies, as they ended up having much greater vulnerability to global shocks and because little is known about the relationship between innovation and corporate strategy in developing countries. Hence, the present study aims to identify interrelationships between corporate strategy and innovation in developing countries.

1 Theoretical background

Corporate strategies and innovations play a prominent role in ensuring that companies stay competitive in the face of external challenges; thus, it is no surprise that many researchers express interest in establishing how these two components interrelate (Farida & Setiawan, 2022; Issa & Bensalem, 2023; Waldron et al., 2022). Despite a significant number of publications, the existing literature is fragmented.

A survey-based study of more than 400 manufacturing companies in China suggests that corporate social responsibility (CSR) practices have the power to promote green product innovation and green process innovation (Yuan & Cao, 2022), with green dynamic capability as a mediator. Even though the study point is of practical importance and offers guidance to improve green innovation in the manufacturing sector, it delivers a "green" perspective exclusively, leaving a substantial portion of possible relationships outside the boundaries of research (Yuan & Cao, 2022).

Another study examined the role of business model innovation (BMI) in enhancing companies' performance in export markets (Najafi-Tavani et al., 2025). The novelty- and efficiency-centred innovations were reported to boot performance by strengthening exporter differentiation and cost advantages. Their effectiveness, however, can vary depending on relational embeddedness, international experience, and competitive intensity. The novelty-centred BMI is more likely to lead to a differentiation advantage if companies operate in moderately competitive environments but only in a narrow set of countries (Najafi-Tavani et al., 2025). Internationally active exporters that build strong connections with their customers can, in turn, attain cost advantages from efficiency-oriented BMI (Najafi-Tavani et al., 2025). Despite the undeniable relevance of these findings, researchers have narrowed the focus to a single innovation type (business

model innovation) and a specific category of business actors (exporting firms).

There is empirical evidence that manufacturing companies invest more in innovation activities amid digital transformation (Wen et al., 2022). The scale of operation, ownership, and productivity are not the influence factors in this process. At the same time, high-viability firms were reported to experience more prominent innovation incentive effects (Wen et al., 2022). Digitalization was said to have an indirect impact on the market competition strategy. For instance, it can encourage companies to implement differentiated competitive strategies while hindering the adoption of a cost-competitive practice (Wen et al., 2022).

It is obvious that the way to improve the process of manufacturing in any country, including China, depends a lot on the modern trends of digitalisation. It is the basis for the construct that speeds up the manufacturing value chains for China inside the country and on the global scale, as well. In this connection, a number of modifications in the manufacturing industry of China are currently taking place (Zhang, 2024).

Among studies that have explored innovation-centered strategies, Wang et al. (2020) investigated the response of Chinese firms to COVID-19 with respect to external influences, internal advantages, and characteristics of firms. The typology proposed by the researchers distinguishes the primary types of innovations based on motivation and the level of collaborative innovations. Heinonen and Strandvik (2020) classified the so-called "imposed" innovations by strategic horizon and strategic stretch. The classification system they offered covers 11 domains: social initiative, delivery, physical distancing, remote presence, entertainment, health and well-being, professional consultation, social connection, education, COVID-19 experience, and public innovations (Heinonen & Strandvik, 2020). For Caballero-Morales (2021), innovation appears as a recovery strategy for small and medium-sized businesses that operate in developing countries amid the COVID-19 pandemic. In this context, the adoption thereof can help companies create new products for new markets and implement the limited resources with greater efficiency.

The developing countries are gradually getting to the responsible behaviour in structural renovations with the use of modern technologies, in order to follow digitalisation and de-carbonisation of their industrial operations at a much larger level. Yet, the extent to which it has been completed so far is not good enough for the time being, hence it demands following more safeguard strategic measures to improve their industrial policy and find the balance between the national interest in regional and international collaboration, showing the commitment to the global trends (Santiago et al., 2024).

Leadership also plays a rather important part in managing enterprises of all sizes. Nowadays, the performance of the business can be influenced by the changes that are implemented by the management, and thus top decisions can be handled more efficiently and influence the resilience of the enterprise. There exist rather strong connections between leadership strategies and social capital, as well as business performance in many different regions. The most important thing is to figure out the particular circumstances in which social capital is to be used for better business performance and efficiency that can be applied to both financial and technological contributions (Reniati et al., 2024).

The theoretical literature review thus shows that despite the evident increase in interest toward the mutual influence of innovation on corporate strategy among researchers (Bahoo et al., 2023; Li et al., 2023; Waldron et al., 2022), there is no consensus regarding this relationship, nor there is a unified methodological approach to explore it. While acknowledging the contributions of predecessors (Sahoo et al., 2023; Verbeke & Yuan, 2021), one should note that the current research is either descriptive or theoretical (Mendes, 2018) and that some studies address a narrow aspect of the problem (Bier & White, 2021; Le, 2022; Phung et al., 2023). It makes it much more difficult to adapt research findings for other industries or economic conditions. Thus, the previously conducted studies for the time being have not been touching upon the matter of a set of recommendations for the use of innovations as a driving force of corporate culture development in the emerging economies, especially in the post-Covid crisis circumstances. Hence, the new hypothesis are urgent to be proposed as a way out not only in understanding the current trends, but also in working out a particular feasibility study in a more expanded scale to be applied to the particular needs of the corporate sector

in the Eastern economies, with the necessary specifications that, in the long run, are to be designed in order to facilitate the interaction between the stakeholders and corporations.

1.1 Problem statement

Based on the theoretical sources reviewed, the hypotheses were formulated (Farida & Setiawan, 2022; Wen et al., 2022). Overall, there are five research hypotheses to refute and confirm within the frames of the present research:

H1: The post-crisis innovation activities do not depend on the ownership of the firm.

H2: The post-crisis innovation activities do not depend on its scale of operation.

H3: The post-crisis innovation activities do not depend on industry.

H4: The post-crisis innovation activities depend on the firm's life cycle stage.

H5: The post-crisis innovation activities depend on the strategy complexity level.

This study aims to identify interrelationships between post-COVID-19 corporate strategy and innovation in developing countries. The objectives of the study are: (1) to analyse the current state of work on the research problem; (2) to develop and implement a methodological framework; and (3) to interpret the results obtained.

2 Research methodology

2.1 Research design

The present study is focused on finding an optimal set of instruments to facilitate the interaction between the innovations and corporate strategies in the corporate sector of China, as a way to increase their sustainability and further development. The main task of achieving the goal of the current research is to analyse the already existing models of corporate strategies in Chinese companies and check the degree at which their innovative capacity is being used. The next task is to propose the hypothesis that will allow to strengthen the use of innovations in China's corporate sector and contribute to the positive corporate structure development of the country. The research itself started by using the null hypothesis to figure out the main issues and proceeded then with the alternate hypothesis in order to make the predictions for the variables' connections and thus come up with the new hypothesis original to the present research. In order to make it possible, the acceptability, normality and reliability analysis have been applied so that it will be possible to specify the degree of the target groups' intervention in the survey for the ultimate new hypothesis, as an instrument to meet the requirements of the corporate sector in terms of innovations' application, the extent of possible burdens, the forecast efficiency, intervention coherence, opportunity costs and self-efficacy. Finally, for determining the degree of the statistics' correlation and predictability between the variables under analysis the bivariate distribution method was applied.

According to the results of the theoretical literature review, a unified method for investigating the mutual influence of corporate strategies on innovation is lacking. This study is an attempt to fill this gap. In this research project driven by a quantitative approach, the primary information came from a structured online survey.

This study focuses exclusively on Chinese firms. There are two primary reasons why: (1) China is a transition economy with many enterprises operating in a specific business environment; and (2) companies in China are accessible for and interested in research.

The sampling procedure involved selecting 6,000 random non-state-owned firms from the State Administration for Industry and Commerce (National General Administration for Industry and Commerce, 2022). The sampling was done as specified in Hermundsdottir et al. (2022). Managers and/or business owners were invited to participate in the study by email. The invites were sent out in November 2022, but some emails bounced back, indicating that the contact information was no longer valid. A substantial portion of the invites remained unanswered for unknown reasons or rejected. The main explanation for the reduced number of the ultimately-filled questionnaires is linked to the post-Covid-induced limitations and is subject to the current market situation to be considered as a part of the research findings. A total of 424 valid questionnaires were returned (N = 424), giving a response rate that falls within the range of 14% to 19% recommended by Haneberg (2020).

The questionnaire form employed here was developed using constructs from previous studies (Caloghirou et al., 2022; Hermundsdottir et al., 2022). It consists of 2 sections, which are the profile of the respondent (in our case, a Chinese firm) and data on innovation

and strategies. The questionnaire includes closed-ended single-choice items, open-ended items, and combined items with "Other" as one of the answer options. To ensure respondents understand the questions, the questionnaire form was validated through a preliminary assessment by industry practitioners and domestic researchers.

The questionnaire was written in Chinese. It has 18 items divided into two sections: respondent profile with 7 items and analytical section with 9 items. The respondent profile includes the following items: year of establishment of the firm (Q1), form of ownership (Q2), respondent's position at the enterprise (Q3), sector in which the firm operates (Q4), firm size (number of employees) (Q5), profitability dynamics (Q6) and employment dynamics (Q7). The analytical section includes questions about the relationship between corporate strategies and innovation.

2.2 Basic research methods

The study has been done using the traditional strategy of data compilation and analysis. The data was collected using a structured questionnaire. At the primary data processing stage, large data sets were reduced to a convenient size through encryption. The data analysis procedure involved a set of general scientific, econometric, and economic-statistical research methods, including correlation, structural analysis, and two-dimensional distribution. The item-total correlation method was used to assess the normality and acceptability of items. The results were interpreted using the graphical data presentation method. All operations were done in Microsoft Excel.

2.3 Research limitations and ethics of research

The study has several limitations. First, some email addresses used to invite respondents turned out as invalid. Furthermore, a considerable portion of firms did not respond to an email invitation; the reason is unknown, although is considered to be tightly connected to the post-Covid-induced volatility and changes in the market, leading the enterprises to the situations of being wound-up or relocated.

Second, many business executives who responded to an invitation did not want to participate in the survey due to data leakage concerns. Other limitations include low budget and time constraints, based on the necessity to continue the research in the circumstances when waiting for the companies' response or travelling to their potential present location would take up too much time and money and thus would be considered unviable. Note that the timely adjustment of the questionnaire form made it possible to minimize the impact of the second limitation.

All the materials and data under the analysis in the present articles are available in public access and subject to no copyright, thus there is no conflict of interest in the authors' developments.

3 Results and discussion

3.1 Results

It is obvious that global trade is being transformed by the digital economy and thus new possibilities emerge for enhancing the competitiveness on the international level for exporters and importers. However, these relationships are not homogeneous, they cover different layers of the economy including the digital economy development and resource allocation efficiency, as well as the expert enterprise markup. These are subject to regional modifications, which are mostly visible nowadays in the Eastern countries, China being among them. Thus, rather remarkable improvements are quite visible in those regions due to the fact that the level of technology and capital are being intensified in both government-controlled and non-state companies, and the crisis only contributes to boosting the markup of the expert enterprises nowadays (Yuan et al., 2025). Lately, there has been a lot of attention from the world community towards corporate social responsibility consisting of the financial and non-financial elements of management, including employee care supplier management, corporate governance, environmental management and risk management in social welfare activities and corporate operations. This results in much closer attention being paid to implementing more transparency for the operational activities of the companies, thus requiring the operating value of corporations to be reestablished with a focus on the principles of sustainable development (Li & Lee, 2024). In this connection, there is a call for understanding the extent of corporate image and social responsibility for the sake of consumer engagement in sustainable consumption in China. The conducted survey has allowed us to understand a number of patterns and processes in this respect.

The survey questionnaire was made up of 14 major questions aiming at collecting enough data representing the firms' patterns from the point of view of their overall operational history, employment, business area and innovative development patterns in order to figure out the current trends and perspectives in this field. In the survey, most respondents were firm owners (40%) or top managers (59%). Only 1% of the respondents chose the "Other" option. Of these, half said they were "deputy directors" and thus had sufficient competence to participate in the research project. Respondents were primarily from small and medium-sized firms in 4 sectors: manufacturing (53%), trade and services (40%) and agriculture (7%).

The respondents' perception of the link between individual strategies (Q7 to Q10) and their firm's business activity was assessed on a 5-point Likert scale, with higher scores corresponding to a better assessment (the exact wording of the items is available in Tab. 1). The subjective assessment of the effects of a strategic change ranges from 1.99 to 4.01 (Tab. 1). The item-total correlation coefficients of more than 0.4 indicate a high correlation and assume the normality and reliability of the sample.

The COVID-19 impact on the implementation of innovation (Q11 to Q14) was assessed in a similar fashion (the exact wording of the items is available in Tab. 2). The subjective

Tab. 1: Analysis of acceptability, normality, and reliability of the sample for Q7, Q8, Q9, Q10

No.	Items	Mean value (μ)	Standard deviation (σ)	Item-total correlation (r_{xy})
Q7	Product diversification strategy had a major impact on the business activity of our company in 2020–2023	4.01	0.84	0.49
Q8	Merger and acquisition practices had a major impact on the business activity of our company in 2020–2023	2.62	0.98	0.59
Q9	Geographical diversification strategy had a major impact on the business activity of our company in 2020–2023	1.99	0.81	0.46
Q10	Sustainable development strategy had a major impact on the activities of our company in 2020–2023	3.94	0.79	0.50

Source: own

Tab. 2: Analysis of acceptability, normality, and sample reliability for Q11, Q12, Q13, Q14

No.	Items	Mean value (μ)	Standard deviation (σ)	Item-total correlation (r_{xy})
Q11	Before the COVID-19 pandemic, our company was actively innovating in different areas	3.96	0.8	0.53
Q12	Our company is actively innovating during the post-COVID-19 period	3.00	0.82	0.49
Q13	In times of crisis, innovations are of secondary importance to development	2.03	0.82	0.47
Q14	A limited range of investment options during the crisis hampered the adoption of innovations	3.90	0.81	0.51

Source: own

assessment of innovation effects from the crisis ranges between 2.03 and 3.96, with a standard deviation of less than 0.82. The item-total correlation coefficients for each innovation-related item exceed 0.4, indicating a high correlation, as well as normality and reliability of the sample.

The research hypotheses were tested using the bivariate distribution method. Results show that private and limited liability firms were stimulating innovations more actively during the post-crisis period compared to companies with other types of ownership. Specifically, the percentage of respondents who chose positive options for items Q11 and Q12 was 19.3% and 23.2% higher among private and limited liability firms, respectively, than joint-stock companies. Such variation in the stimulation of innovation activities likely stems from the different decision-making and approval procedures deployed at the studied firms. This refutes the first research hypothesis (*H1*).

The analysis of bivariate size distribution failed to reveal significant differences in responses. Hence, the second research hypothesis (*H2*) can be considered confirmed. In this connection, it is appropriate to claim that the bivariate data has been rather properly collected and analysed, turning the response variables into the proof of a strong relationship between the explanatory and response variable, thus making the obtained data independent, quantitative, continuous, and ultimately demonstrating that it possesses a bivariate normal distribution. It shows how important it is for the corporations in China to combine innovations with the core corporate management values, such as team development, constant research, feedback implementation, active planning and evolution of the business strategies. While most innovative activities are currently available to be achieved by the AI-implemented tools, the team education is necessary for both top management and the employees of the corporation, as well as the shareholders, to be done in a combined manner, striving for the interaction between the conventional and innovative approaches. The statistics discovered in this research allows to understand that shareholders' involvement into the innovative process has a slow, but confident tendency to increase, regardless of the post-Covid crisis challenges, although deeper research is yet to be conducted.

Sustainable development and innovations go hand in hand at any stage of economic development, and there is a call for creating and utilising special facilitators for the development to follow the principles of sustainability, special economic policies can be created for this purpose in order to motivate different corporations comply with the goals of sustainable development that are largely discussed at the basis of the 2030 agenda around the world, as well as include the attempts to get rid of a number of regional inequalities connected to different forms of sustainable development which occurred due to the disproportions of innovation levels (Chaparro-Banegas et al., 2024). Therefore, the innovation activities in China are subject to the increased need for innovation stimulation and the results of this research have demonstrated certain trends.

The two-dimensional (2D) sectoral distribution revealed no significant differences in the stimulation of innovation activities between manufacturing, trade, and services firms. The agricultural firms, on the other hand, were much less active in post-crisis innovation activities (i.e., the value is 27.3% below the average). Hence, the third research hypothesis (*H3*) can be rejected (Fig. 1).

It is obvious that the companies operating in the field of agriculture currently seem to be lagging behind the other major sectors of economic activities as per the extent to which they invest their time and funds in the improvement and development of the modern technologies, hence their present innovation-connected design is not catching up with the others, yet can be largely considered as the most promising, possessing a huge potential of innovative activities and further projects to be invested in.

In addition, start-ups and new firms (those less than 5 years old) were stimulating innovation more actively compared to older firms that have been around for more than 5 years; the difference is 14.7%. This finding confirms the fourth research hypothesis (*H4*) that the stimulation of post-crisis innovation activities depends on the FLC stage. Firms prioritising diversification strategy were the most active in terms of innovation, while those focusing on mergers and acquisitions were the least involved. This finding confirms the fifth research hypothesis (*H5*). Note that the overwhelming majority of respondents disagreed with the statement that "innovation is of secondary importance during the post-crisis period,"

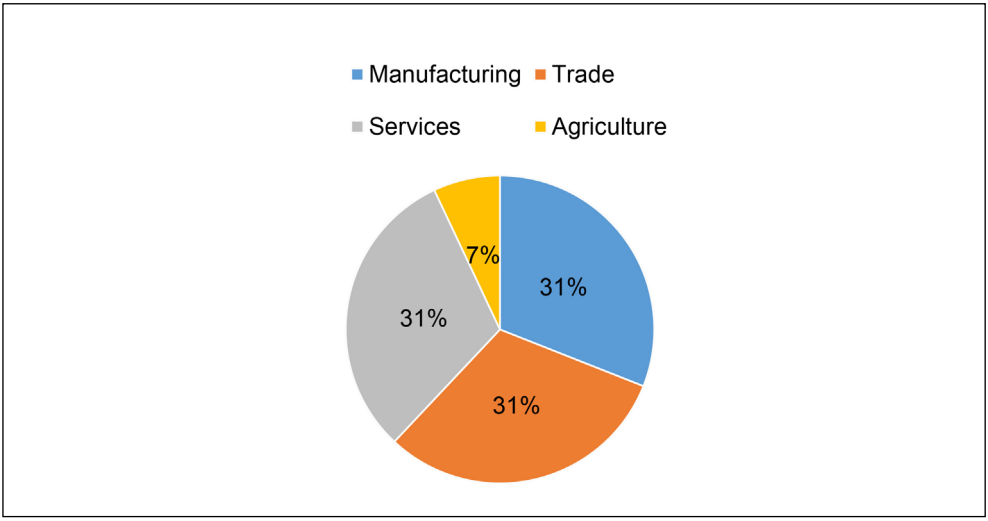

Fig. 1: **The ratio of the companies developing innovations in China in the post-crises period by sectors**

Source: own

assuming that innovation is a prerequisite for sustainable development.

The research has clearly demonstrated that innovation incentives can be pretty similar in manufacturing, trading and services, even though post-crisis innovation definitely is prioritised mostly in the trading area. The old market pending the introduction of innovative ideas is losing in front of the younger companies, which is the point for further discussion and urgent measures calls for extra measures to be taken in the near future.

The creative approach in management for innovative ideas and steps is a prerequisite for motivating the companies to utilise more frequently and deeply the post-crisis innovation schemes and instruments through the multiple and eclectic strategy implementation. Modernisation and creative management at the level of leadership are to be considered one of the pillars for further modernisation of the companies operating at different levels. The strategy of innovation in developing countries in the post-COVID-19 period so far has not been used to its full potential, as the example of China shows. The companies of different levels and sizes appear to be in relatively similar positions speaking of the need to combine and diversify the innovations strategy for their further development, through the practice of takeover and combined cooperation.

3.2 Discussion

Given the significant role of innovation and strategy in corporate development, it seems vital to understand the relationship between these two elements (Chen & Hao, 2022; Hao et al., 2023; Javeed et al., 2022). The current research project offers a methodological framework developed specifically for this purpose that draws upon a small number of recent studies. One such work explores the impact of COVID-19 on environmental innovation in manufacturing companies (Hermundsdottir et al., 2022). Note that despite considerable attention to strategy building in the time of the COVID-19 crisis, Hermundsdottir et al. (2022) focused more on environmental aspects. By comparison, the present study looks at the link between innovation and post-crisis strategy in general. Another study addressed the influence of corporate strategy on innovation with corporate risk as a mediator (Li et al., 2021). The COVID-19 effects were overlooked, however.

The effects of sustainable corporate strategy amid the COVID-19 pandemic were previously explored by Jílková (2021). By spacing the observation times apart (wave 1: March 15 to April 15,

2019; wave 2: March 15, 2020, to April 15, 2020), Jílková (2021) enabled the comparison of employee perceptions of the benefits provided to them before and after the COVID-19 pandemic. Unlike Jílková (2021), who focused on the human capital effects of a sustainable post-crisis strategy, the present study addresses the innovation perspective. It has been discovered that the increasing demands that the society of China poses to the economic development in general and corporate culture and activities in particular, changes considerably the patterns of their consumption and can ultimately lead to better conditions of the economic climate and the environment at the same time. A positive corporate image and social responsibility, involved in the huge companies' operations, can be called by far the most important factors that allow consumers in Chinese society to get involved in sustainable consumption. Obviously, the corporate image of any huge enterprise plays one of the most outstanding roles when it comes to appealing to the customers and trying to keep them for as long as possible within the company's operational domain. The corporate image is a basic concept that plays to the creation of the consumers' perceptions of the company using different direct and indirect instruments. (Streimikiene et al., 2024). The acceptability, normality and reliability analysis have demonstrated the increased awareness of the Chinese corporate shareholders and stakeholders regarding the connection between the degree of innovative initiatives and the corporate culture development. Using the quantitative and qualitative research, it has become evident that sustainability in the newly-emerged situation in non-state corporations of China largely depend on the level of intensity that the interactions with all the market participants can be achieved, regardless of their current economic state. The hypothesis having appeared and verified in the present study prove the emergence of an exclusive type of corporate culture development in the Eastern countries, such as China, therefore giving way to a new bend of their economic development for the time-being. The speed which China has been applying technologies to their development of logistics with, and the interactions between different fields of economy, apparently have considerably transformed the speed of the economy in general. Nevertheless, it was not enough for the overall positive image of the economic development, because it lacked sustainability, which was largely based on the restrictions, connected to the carbon emissions and many other efficiency tools that are connected to not only the industrial pattern and design of the economy, but also with the high-quality development of the environmental protection methods (Zhou et al., 2024). Corporate strategy and innovation depend a lot on the basic principles typical not only for China, but for the world economy as a whole, and this includes taking care of the end-of-pipe solutions and reducing the carbon footprint through the development of modern technologies, that can ultimately form not only the corporate culture for every particular enterprise, but also give a solid ground for the long-term sustainability in every sector of the country's economy, that keeps being integrated into other regions and the global structure. In this connection, there is a very important layer of research that has to be done connected to the development of the Innovations of business models that are based on responsibility and sustainability. The so-called stakeholder theory and stakeholder approach signifies looking after all the participants of the enterprise's activities, based on their location around the facilities and operations the company has in the area, as well as the shareholders' concerns. Profit will always be the most important motivation for any company to run, yet the community is supposed to be taken into consideration to a larger extent from now on. Thus, the responsibility of innovation is on the verge of being followed, in addition to the technological innovations that are already being applied everywhere in modern economic activities of China. This will result in further progressive opportunities for the country to have the leading positions in the world economy for many years to come. The inclusiveness and business ethics alone as the basis of a responsible stakeholder approach are irrelevant for these circumstances and have to consider all the third parties through the correction of the company's behaviour and methods of achieving their financial and managerial success (Magni et al., 2024).

Despite substantial research on the relationship between corporate strategy and innovation, this study put forward hypotheses that have not been previously tested by empirical evidence. In addition, it provides data that partially confirms or refutes previous findings. The results

of this study can expand our knowledge regarding the relationship between corporate strategy and innovation during the post-crisis period, enabling the development of adequate solutions for reviving the real economy after the COVID-19 crisis.

Conclusions

This study sought to identify the mutual effects of corporate strategy on innovation in developing countries during the post-COVID-19 period. The research hypotheses are that the stimulation of post-crisis innovation activities does not depend on (*H1*) the ownership of the firm, (*H2*) its scale of operation, (*H3*) and industry but on (*H4*) the firm's life cycle stage and (*H5*) the strategy complexity level. The survey of nearly 424 firm owners, managers, and deputy directors revealed that private and limited liability firms were stimulating their innovation activities more actively after the COVID-19 crisis when compared to joint-stock companies. The percentage of respondents who chose positive options for items Q11 and Q12 was 19.3% and 23.2% higher among private and limited liability firms, respectively than among joint-stock companies. This finding refutes the first research hypothesis (*H1*). The fact that there were no significant differences between firms with different scales of operation confirms the second research hypothesis (*H2*). While the manufacturing, trade and services firms exhibited similar levels of innovation activity, agricultural firms demonstrated lower values (27.3% below the average). Therefore, the third research hypothesis (*H3*) can be considered refuted. The empirical evidence suggests that start-ups and new firms (those less than 5 years old) were stimulating their innovation activities more actively after the COVID-19 crisis compared to firms older than 5 years (14.7% below the average). This finding confirms the fourth research hypothesis (*H4*). The bivariate distribution shows that the highest level of innovation activity is associated with deploying a diversification strategy, and the lowest level of innovation activity is supposedly linked to merger and acquisition practices. This finding confirms the fifth research hypothesis (*H5*). To sum up, the first and second hypotheses (*H1* and *H3*) were empirically proved to be false, and the remaining hypotheses (*H2*, *H4* and *H5*) were confirmed.

To expand this research, further analysis is to be conducted, mostly based on the theories of triple helix, quadruple helix and quintuple helix. This will allow us to extend and expand a lot the research done in this article and enlarge the understanding of the models of innovation economics, that present civil society and the environment as the most important and basic pillars and focal points of any policy, as well as practice and emphasise that the civil society complements their top-down government initiatives and industry policies and practices regarding the inclusive role of the sustainability priorities for the stakeholders and they environment, on the one hand, and figure out how this leads to smart, sustainable and inclusive growth. Further research based on triple helix, quadruple helix and quintuple helix theories is bound to help more in highlighting the rule that the natural environment of the society and sustainable development in the frames of expanded knowledge and innovations are the leading drivers for the production of that knowledge and innovation, as a definition of opportunities for the knowledge society and knowledge economy. Therefore, the models of knowledge, necessary for a more profound understanding of the link between corporate strategy and innovation in developing countries, will show a deeper connection between the models of knowledge in the sustainable development of a particular country on a global scale.

Implications. The present findings can be used to inform corporate strategy decisions in the real sector of the economy after the COVID-19 crisis. They also serve as a platform for further research. The most promising areas of research, in this case, are priority innovations in different strategic scenarios, factors influencing the innovation effects of corporate strategies, and the impact of corporate strategy and innovation on competitiveness in a post-pandemic world.

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