

Article

Post-Crisis Sustainable Performance of Manufacturing SMEs: The Roles of Positive Orientation, Financial Slack, and External Networks

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Abstract: This paper examines the roles of positive orientation, financial slack, and external networks in the sustainability of small and medium-sized manufacturing enterprises (SMEs) following the global financial crisis in 2008–2009. The financial crisis is a good example of sudden, unexpected external disruption, in which a firm's resilience as well as sustainability is seriously tested. Using a sample of 207 manufacturing SMEs in Hong Kong, we tested the simultaneous effects of positive orientation, financial slack, and external networks on post-crisis firm performance through strategic change. Our findings show that positive orientation and external networks play an enabling role in strategic change, which in turn leads to high performance. The enabling role of financial slack is, however, not supported. The study also shows that positive orientation, financial slack, and external networks play a buffering role, which has direct and positive effects on performance. The results provide academics and practitioners with a new perspective of the underlying mechanism that sustains the firm performance of SMEs under a financial crisis.

Keywords: small and medium-sized enterprises (SMEs); positive orientation; financial slack; external networks; strategic change; sustainable performance; environmental hostility



Citation: Chan, A.; Cheng, F.; Cheng, S.-L. Post-Crisis Sustainable Performance of Manufacturing SMEs: The Roles of Positive Orientation, Financial Slack, and External Networks. *Sustainability* **2023**, *15*, 12998. <https://doi.org/10.3390/su151712998>

Academic Editor: Jooh Lee

Received: 27 June 2023

Revised: 20 August 2023

Accepted: 22 August 2023

Published: 29 August 2023



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1. Introduction

We have seen crisis upon crisis in the last two decades. These crises include the SARS outbreak (2003), the global financial crisis (2008), the European debt crisis (2009), the Tohoku earthquake and tsunami in Japan (2011), the North Korea crisis (2017), the China–US trade war (2018), and the COVID-19 pandemic (2019). These crisis incidents have a few things in common. First, most crises have had a regional or even high global impact on almost every aspect of our economy [1]. Second, customer demand and industry activities and confidence have collapsed during these crises [2]. A number of studies suggest that, in times of crises, the most affected enterprises are SMEs [3–5]. The sustainability of small firms in crisis contexts has been a concern, as they are crucial to the economy [6].

While the global financial crisis has negative impacts on small businesses, a significant minority of small firms are able to hang on and do well. They have demonstrated that business performance is positively associated with a firm's resilience, adaptability, and flexibility under recessionary conditions [7]. These studies strongly support the notion that firms should adjust existing strategies as well as develop new strategies to adapt to new circumstances, especially when its operating environment becomes uncertain and unstable [8]. Other research has also shown that a firm's performance after a financial crisis can be influenced by strategic changes, such as pursuing sustained cost reduction [9], increasing investment in advertising, R&D, manufacturing or process innovation, product innovation [10,11], engaging in more corporate acquisitions [12], and changing business models [10]. However, these studies have a few limitations. First, these studies have considered only one kind of strategic change and its impact on firm performance. Turning

a business around is a complex process which often requires a mixture of efficiency- and growth-oriented strategic change actions [13]. Second, the factors that enable strategic change are not clear. For example, financial slack is frequently cited as an enabler of strategic change [11,12,14]. Some case studies, however, have suggested that strategic changes can be influenced by many other factors as well [3,15]. Third, not all firms feel the impact of financial crises in the same way [16]. Very few studies have controlled for the organization's perception of economic and trading conditions, which may determine the organization's response to the crisis [5]. These limitations will be addressed in this study.

Our study looks at the 2008 global financial crisis, which took place between mid-2007 and early 2009. The research period is 2010–2012. For this study, we propose a model of strategic change based on the environment–strategy–performance paradigm [17,18]. In essence, the model theorizes that post-crisis firm performance is related to what kind of changes the firm makes to the business and the extent to which it changes [19]. We begin by investigating the kind of strategic change commonly undertaken by industrial firms facing an economic downturn or recession. We then investigate the factors that may influence the firm's extent of strategic change. We conduct a thorough review of the literature on how firms successfully recover from sudden environmental jolts (e.g., industrial actions, regulatory changes, terrorist attacks, extreme weather events, and economic crises) and propose that strategic change is affected by three distinct factors: an organization's orientation towards adversity, financial slack, and external networks. We then examine the simultaneous effects of these factors on the extent of strategic change. Finally, we test the relationship between the extent of strategic change and post-crisis firm performance while controlling for owner-managers' perception of environmental hostility, firm age, firm size, and possible industry effects.

We test the relationships by utilizing survey data gathered from 207 Hong Kong manufacturing enterprises operating in two industries (consumer electronics and garment manufacturing). The test results provide support for most of the hypothesized relationships. First, positive orientation and external networks have positive effects on the extent of strategic change. The effect of financial slack on the extent of strategic change is, however, negative and non-significant. Second, there is a positive relationship between the extent of strategic change and post-crisis performance, thus providing support for the environment–strategy–performance paradigm. Third, our post-hoc analysis indicates that the effects of positive orientation and financial slack on firm performance through strategic change are positive and significant. Additionally, positive orientation, financial slack, and external networks have direct positive effects on firm performance.

Our study advances recent research on firm survival and success during a financial crisis. It adds to the literature by showing that post-crisis performance is affected by multiple factors in both an indirect and a direct way. Of these factors, positive orientation and external networks play a particularly important role because they not only facilitate strategic changes, leading to high performance, but also buffer SMEs from the disruptions resulting from a significant financial crisis. Finally, this study provides scholars and business practitioners with a new perspective of how resilient SMEs achieve sustainable performance in times of crisis.

This paper is organized as follows. The next section provides the theoretical background and develops hypotheses for testing. In the method and results sections, the research design, survey instrument development and validation, data collection procedures, data analysis methods, and the results of statistical analysis are presented. The final section discusses the main findings. Implications to theory and practice are also discussed, and recommendations for further research are suggested.

2. Theoretical Background and Hypotheses Development

2.1. Positive Orientation and Strategic Change

For this study, positive orientation refers to the propensity to see crisis as an opportunity and to seize the opportunity despite uncertainty [20]. In other words, positive

orientation rests upon the firm's optimism and risk tolerance. This construct is grounded in psychological resilience, which seeks to understand how organizations bounce back from adversity [6,20–22]. Also, there are conceptual overlaps (e.g., opportunity seeking and risk taking) between positive orientation and the entrepreneurial orientation of a firm. Positive orientation can be thought of as a subset of entrepreneurial orientation to explore and capitalize on new opportunities in crisis contexts [23].

There are many scholars who argue that environmental jolts are both threatening and beneficial. Haveman et al., for example, contend that environmental jolts change the environment by removing the boundaries of existing industries, lowering or raising barriers to entry, restructuring the contexts of competition and cooperation, and altering relations between firms. They open up opportunities for organizational change [24]. Wan and Yiu found that an economic crisis opens up opportunities for slack-rich organizations to undertake more corporate acquisitions and hence benefit from it [12]. Salvato et al. also show that, after a natural disaster (e.g., earthquake), firms can turn adversities into entrepreneurial opportunities by exploiting their industry positioning and connections, as local communities and governments prefer to do business with trustworthy firms [25]. However, not many organizations interpret crisis events in a positive, constructive way. Rather, they tend to exhibit threat-rigidity reactions when experiencing a severe jolt, such as denying the severity of the jolt and delaying taking actions [24]. On the other hand, organizations that are positive about the jolts will use the disruptive events as an opportunity to explore the ideas and value of the organization [26], restructure underperforming assets [27], and seize future sources of competitive advantage [28].

The risk-taking propensity of a firm affects the extent to which it favors opportunities. The pursuit of new opportunities, such as introducing a new product or service, entering into a new market, forming alliances, or creating new business, involves risky moves. The reason is that pursuing new opportunities is time-consuming and requires large resource commitments [29], with the outcome being highly uncertain [30]. A conservative, risk-averse firm will hold back the investments needed to develop or maintain a competitive advantage in hostile environments [31]. On the contrary, risk-taking firms will engage in product–market innovation and undertake somewhat risky ventures [32]. Thus, the following is hypothesized:

Hypothesis 1. *Positive orientation is positively associated with the extent of strategic change.*

2.2. Financial Slack and Strategic Change

Often regarded as excess or redundant organizational resources [33–35], slack refers to a pool of resources that are immediately available to an organization to support initiatives [36]. There are many different typologies for slack. The most common categorization for slack is based on liquidity levels: available, recoverable, and potential [35]. Of these three types of slack, available slack is the most liquid asset. This study focuses on financial slack (an available slack coming from excess cash or retained earnings) because it can be easily deployed during an economic crisis [37].

There is a substantial amount of research related to the importance of slack, including the seminal papers by Bourgeois [38], Nohria and Gulati [39], and Singh [40]. Buffering and facilitating are frequently cited in the literature as the important roles of slack in times of crisis [41–43]. As Lefebvre succinctly states, “slack resources serve the functions of stabilizing and adapting that help firms deal with external shocks and explore additional, riskier business opportunities . . . In particular, available slack (cash in excess), the most fungible and versatile form of slack, is found to be particularly useful for facing economic downturns” ([44], pp. 1–4). The facilitating role of slack has received great attention from researchers. For example, an analysis of the adaptive responses of manufacturing firms to a financial crisis by Tan and See indicates that firms with high levels of slack tend to undertake more expansionary activities, such as forming new ventures, acquisitions, and diversifications [14]. Similarly, Wan and Yiu found a positive relationship between slack

and the number of acquisitions during a financial crisis [12]. The buffering role of slack has also received substantial empirical support [33,45]. It has been widely acknowledged that slack provides a buffer that allows the firms to maintain operations while pursuing recovery strategies [46], thus enhancing the organization's resilience in economic downturns [33,35].

However, there are also concerns about the effects of slack on firm survival. The link between slack (excess cash in particular) and inefficiency was identified in some studies. They argue that high levels of slack lead to inefficient investment decisions and generate opportunity costs which add rigidity to a firm [33,44]. This is supported by some studies, which show an inversed U-shape relationship between slack and corporate outcomes such as innovation or financial performance [42]. As our study focuses on manufacturing SMEs which are generally regarded as not resource-rich, this curvilinear relationship should not be a concern. Thus, the following is hypothesized:

Hypothesis 2. *Financial slack is positively associated with the extent of strategic change.*

2.3. External Networks and Strategic Change

There are many synonyms for external networks, like external ties [47], social capital [48,49], and social networks [50], indicating that external networks are a broad concept. This breadth or wideness is captured by the comprehensive definition of external networks provided by Gulati, Nohria, and Zaheer, who define external networks as “a firm's set of relationships, both horizontal and vertical, with other organizations—be they suppliers, customers, competitors, or other entities—including relationships across industries and countries” ([51], p. 203).

Many studies have suggested that external networks can play a vital role in helping firms to deal with unprecedented crises. First, external networks increase situational awareness. This is because firms can gather prompt and reliable crisis information from external networks, thus increasing their awareness about any potential risks or threats that might occur [47]. At the same time, firms can learn and adopt the adaptive responses to the crisis from more successful network peers [52]. Second, external networks facilitate opportunity discovery. External networks are important channels for capturing ideas and information that can be used to identify business opportunities, product innovations, and improvements in products or manufacturing processes [48–50,53,54], also contributing toward the forming of new ventures [55] and entry into foreign markets [56]. Third, external networks provide needed resources. External networks allow firms to access complementary resources from their allies, partners, and cooperation network that are crucial to innovation [49,50,57]. These resources include know-how, new technologies or new markets, joint research and development, and/or production [58]. In a study of Chinese manufacturing SMEs, Zeng et al. found a positive relationship between cooperation networks (e.g., government agencies, inter-firm cooperation, and research organizations) and innovation performance [59]. Yam et al.'s study also highlighted the important role of external expert organizations in the innovation capabilities of manufacturing firms [60].

Organizations that maintain close relationships with external stakeholders are also able to receive increased or at least the same level of support from external stakeholders in difficult times. Once short-term survival is secured, they can then design and implement appropriate recovery actions [61]. In sum, organizations with strong external networks are more able to innovate, find entrepreneurial opportunities, and solicit collaboration to exploit these opportunities [62]. Thus, the following is hypothesized:

Hypothesis 3. *External networks are positively associated with the extent of strategic change.*

2.4. Extent of Strategic Change and Firm Performance

In this study, we follow the definition of strategic change outlined by Barker and Duhaime, who define strategic changes as changes in the content of a firm's strategy to fit its environment [63]. Alternatively, it can be viewed as a difference in the form of an

organization's alignment with the environment [64]. A large number of studies suggest that the strategic environment fit has positive performance implications [1,8,10,65,66]. The strategic environment fit is of even greater importance in the post-crisis era, as crisis shock may trigger another unexpected dynamic [67].

The strategic changes can be broadly classified into two different types. The first type, called retrenchment, focuses on costs, assets, product lines, production lines, and overhead reductions [68–70]. The second type, called recovery, focuses on growth through different measures such as acquisitions [12], innovation [71], new business models [72–75], and investments in new technologies [76]. In a select overview of papers on strategic management, Wenzel et al. identified two additional types of strategic changes, namely persevering and exit. Simply put, persevering means preserving the *status quo*. Persevering may be a good strategy as not all firms want to engage in strategic changes too early. Exit means discontinuation of a business. Exits are sometimes desirable because they can free up valuable resources that can be used to support other strategic changes [77].

The study by Smallbone et al. shows that small firms responded to an economic downturn with a mixture of cost-cutting and revenue-growth measures [7]. A more recent study by Kraus et al. also shows that firms rarely rely on one type of strategy when embarking upon strategic changes. Instead, they use a combination of strategies in response to crisis situations [74]. The findings of Schmitt and Raisch add more insights into the relationship between strategic change and firm performance. They argue that retrenchment and recovery are a “duality”. They studied more than 100 change initiatives and concluded that the interaction between retrenchment and recovery activities enhances sales, market share, return on investment (ROI), and return on assets (ROA) [78]. Thus, the following is hypothesized:

Hypothesis 4. *The extent of strategic change is positively associated with post-crisis firm performance.*

2.5. Research Model and Hypotheses

The research model is depicted in Figure 1. The model explains the roles of positive orientation, financial slack, and external networks. We first hypothesize that positive orientation, financial slack, and external networks affect the extent to which a firm changes its strategies. We introduce several control variables, including industry type, manufacturing business type, firm size, firm age, and perceived environmental hostility. We then hypothesize that strategic change has important implications on firm performance. The model also contains the possible direct performance effects of positive orientation, financial slack, and external networks.

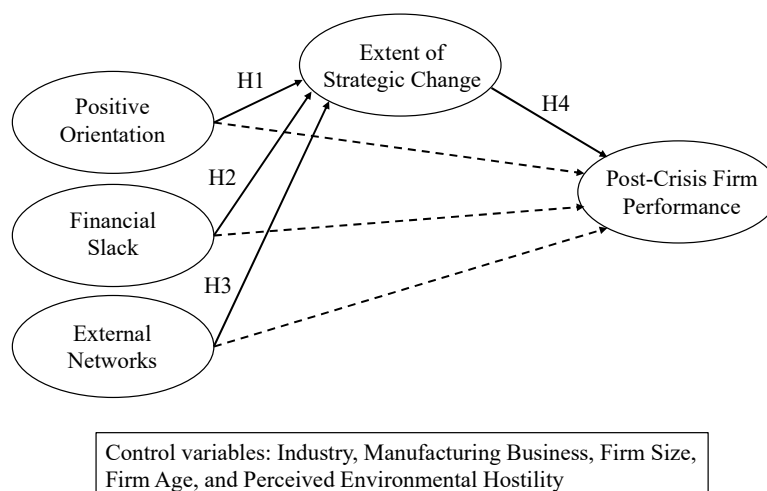


Figure 1. Research model and hypotheses.

3. Research Method

3.1. Sample and Data Collection

Data were collected through an online survey conducted between October 2013 and November 2013. The sample was drawn from two major industries in Hong Kong: consumer electronics and garment manufacturing. These two industries were among those most affected by the financial crisis in 2008–2009 [79]. The sample firms were obtained from two different sources concurrently. First, we identified approximately 1000 privately owned consumer electronics companies from the 2013 Directory of the Hong Kong Electronics Industry. The directory, published by the Hong Kong Electronic Industries Association, provided information on more than 3000 companies. We successfully contacted 485 consumer electronics firms by phone and a personalized invitation letter was mailed to these firms. The letter explained the purpose of the survey, guaranteed confidentiality and anonymity, and provided an open link to the online survey. A reminder letter was sent two weeks after the mailing of the first invitation letter. A total of 51 complete responses were received. The response rate was 10.5%, which is about the same as that found in previous studies on Hong Kong SMEs [80]. Second, we collaborated with a Hong Kong garment industry association to conduct the survey. Due to personal data protection, the survey was fully administrated by the industry association. A personalized email invitation was sent to the owners/senior managers of 1290 garment firms. The respondents accessed the questionnaire by clicking on a unique link provided in the email. The non-respondents and the respondents who had partially completed the questionnaire received a reminder email three weeks after the initial invitation was sent out. A total of 191 complete responses were received. The response rate was 14.8%.

To control the quality of the data, we performed a “purification” of the survey responses. First, if a response contained eight or more “don’t know” (37 items had the response option of “don’t know”) answers, the response was deleted from the data set. Second, companies with less than 100 employees and not belonging to any kind of manufacturing business were likely in the trading business and were excluded from the sample. The number of firms in the sample was finally reduced from 242 to 207. The sample characteristics are shown in Table 1.

Table 1. Sample characteristics (N = 207).

		Frequency	Percentage
Industry	Consumer electronics	48	23.2%
	Garment manufacturing	159	76.8%
Firm age	1–5 years	13	6.3%
	6–10 years	21	10.1%
	11–20 years	65	31.4%
	>20 years	108	52.2%
Firm size	1–100 employees	60	29.0%
	101–200 employees	32	15.5%
	201–500 employees	50	24.1%
	500–1000 employees	27	13.0%
	>1000 employees	38	18.4%
Manufacturing	OEM	139	67.1%
	ODM	33	15.9%
	OBM	25	12.1%
	Others	10	4.8%
Production	In China	180	87.0%
	Outside China	27	13.0%
Respondents	Owner	109	52.7%
	Not owner	98	47.3%
Job positions	Director	68	32.9%
	CEO/General Manager	52	25.1%
	Manager	50	24.1%
	Others	37	17.9%

3.2. Measurement of Variables

The variables were measured by multi-item scales adapted from previous research. A summary is provided in Appendix A. Positive orientation was measured by three items adapted from Covin and Slevin [31] and Syrett and Devine [46]. The first two items were used to measure the risk-taking propensity of organizations, and the third item was used to assess the firm's opportunistic approach to dealing with a crisis. Financial slack was measured by two items adapted from Tan and Peng [37]. These items were used to measure the discretionary, liquid resources of an organization. External networks were measured by three items adapted from Wu [80] and McCann et al. [81]. The first two items were used to measure top managers' ties with other firms (e.g., buyers, suppliers, and competitors) and with government offices (e.g., administration and industrial bureaus and other supporting organizations). The third item was used to measure a firm's ability to access resources from external networks. The items were measured on a 7-point Likert scale ranging from "very strongly disagree" (1) to "very strongly agree" (7), with the mid-point indicating "neutral" (4).

The extent of strategic change was measured by 10 items adapted from Barker and Duhaime [63]. The items included retrenchment actions, recovery actions and exits (divestment) typically undertaken by manufacturing firms in a declining situation. The respondents were asked to indicate the extent of change for each item on a 5-point scale (1 = "not at all", 5 = "extremely").

We measured firm performance over a 3-year period (between 2010 and 2012). The reason is that the benefits of strategic change projects generally take time to realize. We operationalized firm performance based on Davies and Ko's 3-factor model [82]. The first factor represented "achievement of strategic objectives" and was measured by 3 items. The second factor, which consisted of 5 items, represented "effective adaptation". The third factor represented "financial performance" and consisted of 4 items. Additionally, perceptual measures instead of objective measures were used in measuring organizational performance. The respondents were asked to indicate their level of satisfaction for each item on a 7-point Likert scale ranging from "very strongly satisfied" (1) to "very strongly dissatisfied" (7), with the mid-point indicating "neutral" (4). The means of item scores for each of the three factors formed three scales, which were used as indicators for firm performance.

The Cronbach's alpha (α) of all constructs is close to or above 0.70, except for external networks ($\alpha = 0.56$). The composite reliability (CR) and average variance extracted (AVE) of all constructs was above 0.7 and 0.5, respectively. The results suggest that the constructs have adequate reliability. All items load significantly on their respective constructs ($p < 0.001$). These results suggest that the constructs have good convergent validity. We also followed the suggestion of Hair et al. to test the discriminant validity by comparing the AVE values for any two constructs with the square of the correlation estimate between these two constructs [83]. The AVE values are greater than the correlations between different constructs. Also, item loadings under the same construct are higher than those of different constructs. The results indicate that the constructs have good discriminant validity. We have also examined the variation inflation factor (VIF). The VIF indicates whether a construct has a strong linear relationship with the other constructs [84]. The VIF values for all independent variables (i.e., positive orientation, financial slack, external networks, and the extent of strategic change) are between 1.27 and 1.57, which are far below the threshold values. The results indicate that multicollinearity is not a concern in this study.

Self-reported data provided by the same person are likely to be subject to bias resulting from any artifactual covariance between the independent and dependent variables, and such common method biases resulting from the same rater can have potentially serious effects on research findings [85]. We conducted a Harmon one-factor test [86] and found that the most covariance explained by one factor is 45.4%, indicating that common method bias is unlikely to cause serious effects.

Additionally, a t-test was performed to detect if there was any non-response bias [87]. We compared the first 10% of respondents and the last 10% of respondents [60]. The test shows no significant differences between the early respondents (i.e., first 10% of respondents) and the late respondents (i.e., last 10% of respondents) in terms of positive orientation ($t = -0.178$, $p = \text{n.s.}$), financial slack ($t = 0.461$, $p = \text{n.s.}$), external networks ($t = -0.045$, $p = \text{n.s.}$), the extent of strategic change ($t = -0.751$, $p = \text{n.s.}$), and firm performance ($t = -0.960$, $p = \text{n.s.}$), indicating that non-response bias is not a problem in this study.

3.3. Control Variables

We included 5 control variables in the multiple regression analysis. The first control variable is the industry in which the firms operate. We controlled for industry effects by using a dummy variable ("1" for garment, "0" for consumer electronics). The second control variable is the type of manufacturing business to which the firms belong. Davies and Ko's study of Hong Kong's electronics industry found a negative relationship between original equipment manufacturing (OEM) and firm performance [82]. We controlled for the effects of the type of manufacturing business by using a dummy variable ("1" for OEM, "0" for other manufacturing businesses).

The third and fourth control variables are firm age and firm size, respectively. Resistance to change may increase with firm age and firm size. This is because old organizations have more formalized relationships and standardized routines, and large organizations place greater emphasis on predictability, formal roles, and control systems [88]. Mature firms (established more than 20 years ago) are coded "1"; younger firms (established less than 20 years ago) are coded "0". SMEs (firms with less than 1000 employees) are coded "1", and large firms (firms with more than 1000 employees) are coded "0". This definition of SMEs is in line with the Chinese Ministry of Industry and Information Technology's classification of industrial SMEs. We adopted this definition because the majority of the sample firms are actively manufacturing in China.

The last control variable is perceived environmental hostility. The owner-managers' perception of environment hostility (e.g., competition intensity and market growth) may affect certain strategic choices made by the SMEs, such as product innovation [89]. We adopted the items used by Ward et al. [90] and Miller [91] to form a 5-item scale for measuring organizations' perception of environmental hostility. The respondents were asked to indicate a score for each item on a 5-point Likert scale (1 = "not at all", 5 = "extremely").

3.4. Questionnaire Development

The items were translated into Chinese and back-translated by an independent translator. The translation was then reviewed by a professor of management and a doctoral student, who was an executive director of a large manufacturing firm in Hong Kong, to confirm that the original meaning was retained in the process of translation. The questionnaire was pre-tested using a group of five SME owner-managers. A few minor issues regarding Chinese wordings were identified and we revised the wordings based on their suggestions.

The questionnaire consisted of three sections. The first section contained questions about environmental hostility, strategic changes, positive orientation, financial slack, and external networks. The next section contained questions about the background of the company and the respondent, such as industry, firm age, firm size, manufacturing business, and the respondents' management position and area of responsibility. The final section contained sensitive questions about firm performance, such as sales and profits over a 3-year period.

4. Analysis and Results

Table 1 presents the characteristics of the sample firms. In total, 23.2% of the sample firms were consumer electronics companies, and 76.8% were garment companies. Overall,

52.2% of the firms in the sample were established over twenty years ago. The sample firms are mostly SMEs, as 81.6% of the firms have less than 1000 employees. In terms of manufacturing, 67.1% of the firms engaged in OEM business and 87% of the sample firms produced their products in China, which is typical of Hong Kong manufacturing enterprises. Over 50% of the respondents were owners of the firms. Regarding responsibilities, 58% of the respondents held the position of Director, Chief Executive Officer (CEO), or General Manager, and 24.1% were managers of the firms. The means, standard deviations, and correlations of variables are presented in Table 2.

Table 2. Means, standard deviations, and correlations.

	Mean	S.D.	1	2	3	4	5	6	7	8	9
1. Industry	0.77	0.42	1.000								
2. Manufacturing business	0.67	0.47	0.152 *	1.000							
3. Firm size	0.82	0.39	0.153 *	0.093 +	1.000						
4. Firm age	0.52	0.50	−0.251 ***	0.010	−0.254 ***	1.000					
5. Perceived environmental hostility	3.39	0.68	0.014	0.073	−0.013	0.155 *	1.000				
6. Positive orientation	4.79	0.90	−0.105 +	−0.057	−0.206 **	0.006	−0.067	1.000			
7. Financial slack	4.76	1.20	−0.070	−0.126 *	−0.162 *	−0.052	−0.187 **	0.511 ***	1.000		
8. External networks	3.69	1.00	0.257 ***	−0.012	−0.048	−0.162 *	−0.142 *	0.253 ***	0.346 ***	1.000	
9. Extent of strategic change	2.07	0.71	0.083	−0.082	−0.055	−0.240 ***	0.133 *	0.238 ***	0.126 *	0.283 ***	1.000
10. Firm performance	3.91	0.96	0.006	−0.150 *	−0.043	−0.167 **	−0.334 ***	0.426 ***	0.504 ***	0.462 ***	0.307 ***

Notes: industry, 1 = garment, 0 = consumer electronics; manufacturing business, 1 = OEM, 0 = others; firm size, 1 = SME, 0 = large enterprise; firm age, 1 = mature, 0 = young. + $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

SPSS 21 was used to perform the data analysis. Table 3 summarizes the results of the first set of regression analysis tests using the extent of change as a dependent variable. Model 1 is the baseline model with only five control variables. Model 2 builds on Model 1 by including positive orientation, financial slack, and external networks in the model. As expected, the effects of firm age and firm size on the extent of strategic change are negative, while perceived environmental hostility has a significant and positive effect on the extent of strategic change. Model 2 shows that the extent of strategic change is positively related to both positive orientation and external networks. The relationships are significant even after controlling for industry, manufacturing business, firm size, firm age, and perceived environmental hostility. The coefficient of financial slack is, however, negative and not significant. Thus, Hypothesis 1 and 3 are supported but Hypothesis 2 is not supported. Additionally, Model 1 and 2 show that adding positive orientation, financial slack, and external networks increases R^2 by 9.7% ($p < 0.001$), indicating that the significant effects of positive orientation, financial slack, and external networks are substantive.

Table 3. Multiple regression results (first set).

	Model 1	Model 2
Constant	1.855 ***	0.439
Control variables		
Industry	0.069	−0.008
Manufacturing business	−0.131	−0.121
Firm size	−0.227 +	−0.118
Firm age	−0.409 ***	−0.363 ***
Perceived environmental hostility	0.191 **	0.226 **
Independent variables		
Positive orientation		0.160 **
Financial slack		−0.032
External networks		0.168 **
R^2	0.110	0.208
R^2 Change	0.110	0.097
F Change	4.993 ***	8.121 ***

Notes: dependent variable = extent of strategic change. + $p < 0.1$, ** $p < 0.01$, *** $p < 0.001$. N = 207.

Table 4 presents the results of a second set of regression analysis tests using post-crisis firm performance as a dependent variable. Model 3 is the baseline model with control variables only. Model 4 adds positive orientation, financial slack, and external networks in Model 3. Model 5, which is the full model, adds the extent of strategic change in Model 4. Model 5 shows that positive orientation, financial slack, external networks, and the extent of strategic change are positively and significantly related to firm performance after controlling for industry, manufacturing business, firm size, firm age, and perceived environmental hostility. Hypothesis 4 is therefore supported. Model 4 and 5 also show that when strategic change is added, R^2 increases by 2.9% ($p < 0.01$), indicating that the significant effect of strategic change is substantive.

Table 4. Multiple regression results (second set).

	Model 3	Model 4	Model 5
Constant	5.820 ***	2.051 ***	1.937 ***
Control variables			
Industry	0.012	−0.089	−0.087
Manufacturing business	−0.246 +	−0.176	−0.144
Firm size	−0.175	0.118	0.148
Firm age	−0.259 +	−0.138	−0.044
Perceived environmental hostility	−0.434 ***	−0.304 ***	−0.362 ***
Independent variables			
Positive orientation		0.228 **	0.186 **
Financial slack		0.195 ***	0.203 ***
External networks		0.281 ***	0.237 ***
Extent of strategic change			0.259 **
R^2	0.146	0.443	0.473
R^2 Change	0.146	0.298	0.029
F Change	6.863 ***	35.290 ***	10.903 **

Notes: dependent variable = firm performance. + $p < 0.1$, ** $p < 0.01$, *** $p < 0.001$. N = 207.

The positive and significant coefficients of positive orientation, external networks, and the extent of strategic change suggest that positive orientation and external networks have positive significant effects on firm performance through strategic change. To examine the significance of these indirect effects, we conducted a post-hoc analysis using the PROCESS tool [92]. PROCESS is regression-based and uses a bootstrapping method for analysis. Figure 2 presents a graphic summary of the PROCESS results. The indirect effects of positive orientation are significantly greater than zero at a 95% confidence interval [0.013, 0.092]. Similarly, the indirect effects of external networks are significantly greater than zero at a 95% confidence interval [0.013, 0.088]. The results thus show that positive orientation and external networks positively and significantly affect firm performance in both a direct and indirect way, while financial slack only has a significant direct effect on firm performance.

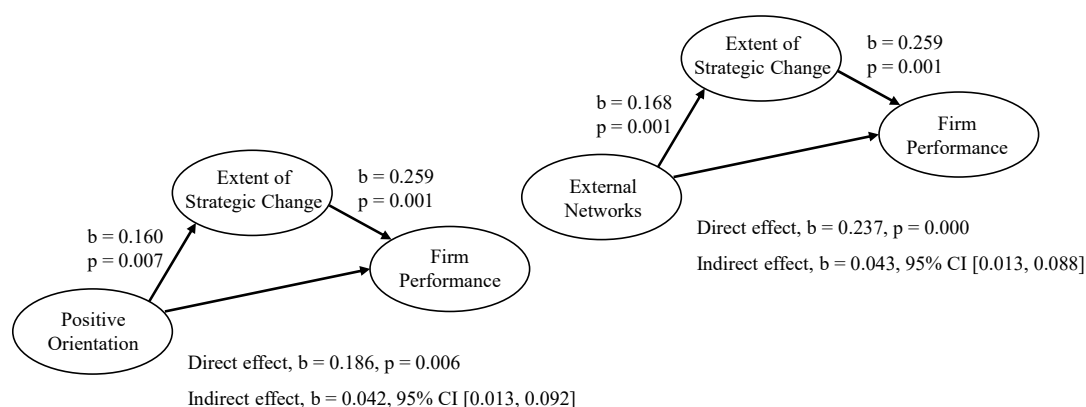


Figure 2. PROCESS results.

5. Discussion and Conclusions

This study looks at the 2008 global financial crisis, which disrupted not only financial markets but also the economy worldwide. Different from other crisis incidents, the global financial crisis has had lasting effects, and many economies still feel the negative impact many years after the crisis [93]. Our research focus is on the sustainability of small businesses in the post-financial crisis era. We took a sample of manufacturing SMEs in Hong Kong. We began our research by investigating what strategic changes industrial firms commonly make in bad economic times and the factors that enable these changes. Drawing on previous studies on the recovery of firms from environment jolts, we propose that positive orientation, financial slack, and external network positively affect the extent of strategic change, which in turns lead to high performance. When examining the relationship between strategic change and firm performance, we controlled for the effects of perceived environmental hostility and other firm characteristics. Our study shows that positive orientation has a significant positive effect on firm performance through strategic change. Our findings support that positive, forward-looking organizations are more able to take actions to overcome or reduce the negative impacts of an adverse event, resulting in good performance [94]. The direct effect of positive orientation on firm performance, while significant, is less obvious. One possible explanation for this is that organizations with a positive orientation achieve better performance because of the motivated effort and perseverance of their employees [95].

Our study does not find support for the indirect effect of financial slack on firm performance through strategic change. The result is opposite to a similar study by Guo et al., which found that financial slack positively affects firm performance for Chinese manufacturing SMEs, and this positive effect is partially mediated through R&D investment [41]. There are two possible explanations for this. First, Zona found that the willingness of a firm to increase investment in the face of environmental threats would depend on the amount of financial resources available [11]. This could be our case as our sample consists mainly of SMEs engaging in OEM business. SMEs are characterized by limited resources [96], and the OEM business is a low margin business [97]. Small and medium-sized OEMs are therefore unlikely to generate a lot of financial slack, and that explains why financial slack plays a non-significant role in enabling strategic change. Second, as Guo et al. indicated, the relationship between financial slack and strategic change can be weakened by some external factors, such as government subsidies [41]. This is most likely our case. In the presence of strong external networks, firms are able to make use of financial and other resources outside the firm to support strategic changes, rather than using their own resources. Our study shows that financial slack has a direct, positive effect on firm performance. The buffering role of financial slack is supported. The firms tend to use their financial reserves to compensate for their losses [98], maintain employee wellbeing when faced with difficult economic times [15], and absorb inevitable disruption and uncertainty while adapting to new demands and conditions [46].

This study supports the hypothesis that the extent of strategic change is positively associated with external networks. As discussed, external networks facilitate some change actions that are commonly undertaken by manufacturing firms for survival, such as innovation [99]. Market networks such as suppliers, customers, competitors, alliances, and partners can facilitate organizational innovation by providing new ideas for production processes and managerial skills, while institutional networks such as government agencies, universities, research institutes, and trade associations can offer new scientific and technological knowledge that facilitates product innovation [100]. We also found a direct and positive relationship between external networks and post-crisis firm performance. During difficult economic times, external networks can provide critical resources (e.g., favorable price and/or credit terms from suppliers and short-term government loans for small businesses) to prevent the firm from being affected by disrupted supply chains and poor financial liquidity, which often cause many SMEs to fail in a fluctuating and changing environment [101]. Our study provides empirical support for the positive performance implications of strategic change. We found that manufacturing SMEs which undertook more change actions (from cost-cutting to investment) performed better after the financial crisis. This is in line with some studies, which have observed that, in a challenging economic environment, successful firms undertake not only cost-cutting strategies but also investment strategies for long-term survival [65,102].

Of the five control variables, only one is statistically significant, i.e., perceived environmental hostility. Often treated as the opposite of munificence [90], environmental hostility is the source of unfavorable conditions beyond the control of the firm [103]. An economic crisis can lead to increased hostility in the environment. It can not only have a temporary negative effect on customer demand, but also changes the nature of customer demand in the long term through factors such as increased price sensitivity and higher rates of brand switching [104]. Competition intensity is also likely to increase during an environment jolt because less excessive capacity is available for growth in the environment [105]. Our research shows that owner-managers' perception of environmental hostility and firm performance are negatively related. Our research also shows that how a firm perceives environmental hostility affects the extent of strategic change within it. This is consistent with previous studies, which found that firms are likely to initiate more risky actions, such as changes in products and markets [36], or invest in new competence to neutralize threats as the environment becomes hostile [106,107].

Our research findings are in line with the latest research on organizations' responses to the COVID-19 pandemic. These studies mainly use literature reviews, secondary data, or case studies as their research methodology. For example, Ding and Li identified the importance of strategic changes for firm survival. Their study suggests that firm survival during and after the pandemic rests upon (1) short-term strategies, such as cutting costs, shutting down facilities, and looking for external funding, and (2) long-term strategies, such as new business models, marketing and strategic innovations, and business acquisitions and mergers [108]. Wenzel et al. also found that retrenchment and innovation are among the common strategic responses that business firms have adopted in reaction to the pandemic [77]. The study by Chhatwani et al. highlights the importance of positivity for firm survival in small firms. The study found that small business owners who are more positive about challenges tend to be less depressed, leading to higher chances of firm survival during the pandemic [6]. Hadjielias et al. reported similar findings. They found that owner-managers who remained largely optimistic and forward-looking were more able to maintain workplace harmony, make the business more agile, and mobilize family resources essential for their survival [22]. On the other hand, the study by Chit et al. points out the importance of the ability to innovate, institutional connectedness, and financial reserves in SMEs in surviving the pandemic [109].

In sum, this study reveals the key factors that contribute to the sustainable performance of SMEs under the context of unprecedented financial crises. It provides strong empirical evidence that firms with a positive orientation, good market and institutional networks,

and adequate financial slack are more able to adapt, hence recovering more quickly and attaining more sustainable performance in the post-financial crisis era. The implications of our research findings will be discussed in the next section.

6. Implications

Our findings have several practical implications for small business owner-managers. While financial crises have negative and significant impacts upon almost every firm, our study suggests that they can develop sustainable performance in a number of ways. First, firms that are able to capture the opportunities hidden in a financial crisis and capitalize on them are likely to outperform the other firms and remain sustainable at the same time. Firms with a positive orientation are also likely to perform better because this makes people in the organization more proactive and confident that they can overcome an adverse event. Firms can foster a positive orientation by developing organizational practices that encourage opportunity seeking and risk taking [110]. Second, external networks play a critical role in the survival and success of firms by allowing the firms to access to the needed resources and information. Firms should build strong external networks by being actively involved in network participation, particularly in market networks and institutional networks [100]. Moreover, as the business environment changes over time, it is necessary for firms to constantly build and renew their external networks in order to continually exploit the resource and information benefits. Third, financial slack is essential if firms are to absorb shocks and maintain the functions of an organization during the crisis. Therefore, firms should maintain appropriate financial slack, usually in the form of cash and liquid assets, which can be quickly deployed to buffer them against unexpected crises. Building up excessive inventory is also one way to increase financial slack, since firms often face logistic problems in times of natural or financial crises [111,112].

The findings also have implications for policymakers. Government support for small business survival has been widely discussed in the literature [22,113–115]. While government grants, loans, subsidies, guarantees, and tax rebates are critical for immediate survival, it may be worthwhile to develop training programs for owner-managers that focus on venture capital, entrepreneurship, and innovation for long-term sustainability [114]. The government can also sponsor small business associations to organize seminars, forums, local trade fairs, and overseas trade visits to help owner-managers form and/or expand their social networks for knowledge sharing [22].

This study has several limitations which may have implications for future research. First, we used a sample of Hong Kong manufacturing SMEs in the study. While Hong Kong manufacturers have been known for their adaptability and flexibility [116], the generalizability of findings is open to question. One recommendation for future work is to replicate the research in other export-oriented countries in Asia and in different crisis contexts (e.g., the COVID-19 pandemic). Second, additional measures for external networks are recommended for more reliable and valid assessment of the construct. For example, we recommend that family networks be included in external networks, as support from immediate family members could help businesses through times of crisis [98]. Third, this study has not controlled for the effect of cultural aspects. Davies and Ma found that some strategic choices are culturally determined. Their study suggests that attention should be paid to Chinese family business (CFB) characteristics since they cause Chinese family firms to be inclined toward traditional strategies such as a dominant boss, paternalism, a short-term orientation, and highly personal networking [117]. We therefore recommend that CFB characteristics be introduced as a variable in research models and that their potential effects on strategic change be controlled for. Last, but not least, our research only covers a period of three years, and we have not conducted further investigation as to what has happened to the firms in more recent years. The negative impact of a financial crisis can last for many years. Therefore, it would be of interest to extend the time span when replicating the study in the future.

Author Contributions: Conceptualization, A.C.; methodology, F.C.; writing—original draft, A.C. and F.C.; writing—review and editing, S.-L.C.; supervision, A.C. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Not applicable.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Table A1. Measurement items.

Constructs		
Standardized Factor Loadings		
Perceived environmental hostility ($\alpha = 0.76$, CR = 0.84, AVE = 0.51)		
1.	Decrease in customer demand	0.69
2.	Increase in labor shortages	0.76
3.	Increase in operating costs	0.79
4.	Increase in legal, political, and economic regulations	0.78
5.	Increase in competition intensity	0.70
Positive orientation ($\alpha = 0.68$, CR = 0.82, AVE = 0.60)		
1.	Our company believes that, owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives	0.77
2.	When confronted with decision-making situations involving uncertainty, our company typically adopts a bold, aggressive posture in order to maximize the probability of exploiting potential opportunities	0.76
3.	Our company views the crisis primarily as an opportunity to advance rather than a threat to our business	0.80
Financial slack ($\alpha = 0.86$, CR = 0.93, AVE = 0.87)		
1.	Our company's retained earnings have been sufficient for growth and expansion	0.95
2.	Our company has a pool of financial resources that can be used on a discretionary basis	0.93
External networks ($\alpha = 0.56$, CR = 0.77, AVE = 0.53)		
1.	Our company has a strong support network of partnerships	0.80
2.	Our company has high levels of networking with relevant government offices	0.70
3.	Our company has easy access to resources for growth and expansion	0.70
Extent of strategic change ($\alpha = 0.89$, CR = 0.91, AVE = 0.50)		
1.	Acquire firms competing within historical lines of business	0.76
2.	Acquire firms competing outside historical lines of business	0.82
3.	Divest organizational units	0.75
4.	Establish new internal ventures or start-ups	0.69
5.	Enter into joint ventures outside traditional lines of business	0.76
6.	Introduce new products or expand product lines	0.80
7.	Modernize manufacturing capacity with equipment utilizing new technologies	0.73
8.	Increase or decrease the capital available for research on new products or manufacturing processes	0.65
9.	Increase or decrease the capital available for new product development	0.70
10.	Implement new production management and methodology	0.71
Firm performance between 2010 and 2012 ($\alpha = 0.88$, CR = 0.93, AVE = 0.81)		
Achievement of strategic objectives		
1.	i. We have been very successful in achieving our strategic objectives	0.93
	ii. We are very satisfied with the overall performance of our company	
	iii. We are very satisfied with our performance compared with our competitors	
Effective adaptation		
	i. We have been very successful in achieving our strategic objectives	0.88
	ii. We are good at quickly implementing strategic changes	
2.	iii. We take advantage of opportunities quickly	
	iv. We do a good job in keeping up with environmental changes	
	v. When emergencies occur, we cope very successfully	
Financial performance		
	i. Total sales	0.90
3.	ii. Total profits	
	iii. Growth of sales 2010–2012	
	iv. Growth of profits 2010–2012	

Note: α = Cronbach's alpha; CR = composite reliability; AVE = average variance extracted.

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