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An Exploration of Determinants of Corporate Social Innovation: Insights into Organizational Capabilities

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Abstract. Most large enterprises are self-disciplined in various aspects of corporate social responsibility (CSR), such as employee, customer, and partnership, promoting and implementing CSR standards according to their internal needs. Looking into the future, corporate social innovation will become the main axis of CSR activities. The research model identifies the pre-factors of corporate social innovation, setting enterprise organizational capability (including grassroots learning capability, narrative change capability, and network ties capability) as the independent variable, corporate social innovation (including product-based innovation, process-based innovation, socially transformative innovation) as the intermediary variable, and performance (including market performance and business performance) **as** the dependent variable. A questionnaire survey (samples from 192 companies are collected). The findings show that narrative change capability and business ties capability positively and significantly determine enterprises' socially transformative CSI, product-based CSI, and process-based CSI. Further, product-based CSI affects firms' market performance, while process-based CSI influences firms' operational performance. Meanwhile, socially transformative CSI does not affect firms' performance. These findings can be provided to corporate managers as a reference for organizational capability planning and the direction of corporate social innovation.

Keywords. Corporate Social Innovation, Grassroots Learning, Narrative Change, Network Ties Capability

Introduction

CSI refers to corporations which integrate social innovation into their corporate activities. Although CSI is a new term, an increasing influx in CSI displays a growth trend (see Insights, 2018 Social Innovation Exchange Ltd.). Two terms: "social enterprise" and "CSI", are sometimes confused by people. In practice, both social enterprise and CSI are strategic actions that create positive effects for environmental/social issues through innovative methods. Despite researchers attempt to identify the development process of CSI [1], we still cannot understand what organizational capabilities could stir and benefit CSI outcomes. In this study, we select three independent factors: grassroots learning capability, narrative change capability, and network ties capability, and then link these determinant factors to firms' CSI (i.e., product-based social innovation, process-based

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social innovation, and socially transformative social innovation; see [1-3]) and further connect them to firms market/operation performance.

1. Literature review

1.1. Grassroots learning capability and CSI

Compared with market innovation, grassroots innovation pays more attention to social or community issues but neglects commercial benefits. Researchers now identify the impacts of grassroots initiatives on social innovation and have started to treat grassroots initiatives as the sustainable development source of enterprises [4-6]. Grassroots Innovation approaches the richness and complexity of bottom-up processes of social innovation [7], it "operates in society arenas and involves committed activists experimenting with social innovations" [4]. In terms of Singh et al.'s [8] questionnaire item development, this study considers grassroots learning capability appropriate and worthy of being intensely cultivated by enterprises when expecting good CSI. To measure the capability of grassroots learning of enterprises in Taiwan, and clarify its impacts on firms' CSI, this paper proposes the following hypothesis:

Hypothesis 1: The capability of enterprises' grassroots learning determines the development of enterprises' corporate social innovation

1.2. Capability of narrative change and CSI

From 2016, Narrative Initiative started to guide people to focus on the issue of narrative change: how it works in the world (see Narrative Initiative, 2019). "Narrative of change" could be defined as "sets of ideas, concepts, or storylines about change and innovation" [9]. For social innovation, essential elements to analyze "narrative change" may include context, actors, and plot [9]. Enterprises that possess narrative change capability will include the strategic adaptation capability of narrative of change and implementation abilities on how and what to do [9]. In this study, we consider the narrative change capability [9-10] to be helpful for the implementation and to stir the enterprises' CSI [1-3]. Accordingly, Hypothesis 2 is proposed as follows:

Hypothesis 2: The capability of enterprises' narrative change determines the development of enterprises' corporate social innovation.

1.3. Network ties capability and CSI

When discussing a firm's network capabilities, researchers emphasize three types of network ties: social network ties, business network ties [11], and institutional network ties [12]. Social network ties can be measured by three factors: a firm's ability to gather industry information faster than competitors through a network of contacts, the

establishment of professional relationships with influential individuals in the industry, and engagement in informal social activities with influential industry figures [11-13]. Business network ties are defined as a firm's relationships with its customers, suppliers, distributors, partners, and competitors [11-13]. Finally, enterprises sometimes conduct institutional network ties to interact with public and semi-public agencies to obtain resource advantages they couldn't acquire from social exchanges [12-13].

Singh et al. [8] have found that grassroots learning practice and networking capabilities have highly significant effects on firms' economic or non-economic benefits. To clarify the differences among various details in network ties capability, this study identifies network ties capabilities in terms of three aspects: social network ties, business network ties [11], institutional network ties [12-14], etc., and verifies their effects on the CSI of enterprises. This study proposes that firms that exhibit a greater level of network ties capability (i.e., social network ties, business network ties, and institutional network ties) will benefit to varied types (e.g. product-based, process-based, socially transformation, etc.) of the CSI outcomes of enterprises. Hypothesis 3 is thus proposed as follows:

Hypothesis 3: The capability of enterprises' network ties determines the development of enterprises' corporate social innovation.

1.4 Corporate Social Innovation

Social innovation is multi-dimensional innovation for creating something new or different; it should be actualized [15] and possesses influential power to improve society [3]. In academia, Shier and Handy [2] define social innovation for enterprises using three dimension factors: product-based, process-based, and socially-based social innovation. Svensson et al. [3] further adopt Shier and Handy's [2] social innovation scale using three dimensions: (a) product-based (e.g., type of product or service), (b) process-based (e.g., altering administrative procedures), and (c) socially transformative innovations (e.g., promoting changes in public perception of social issues). In this study, the items of CSI developed by Shier and Handy [2], Svensson et al. [3], and Oeij et al. [1] are referenced to measure the CSI outcome level of enterprises in Taiwan's industries; they comprise three sub-dimensions: product based social innovation, process-based social innovation and socially transformative social innovation.

1.4.1. The effects of CSI on market performance and operation performance

This study adopts those scales developed by Pérez-López and Alegre [17], Rajapathirana and Hui [18], and Shih [19] to measure market performance for enterprises. In another aspect, this study adopts the scales developed by Powell and DentMicallef [20] and Shih [19] using both subjective measurement and objective indicators (the past three years' profit margin) to measure business operation performance. To measure the operation performance of responding firms, respondents have to evaluate their "firm's financial performance level, the level of sales growth, as well as their firm's earnings growth in comparison to their competitors over the past three years" [19-20]. Product/service

innovation helps enterprises to develop new markets or explore new industries [21] and obtain profit [18]. Accordingly, this study considers that CSI outcomes tend to stir firms market performance [16-18] and operation performance [19-20]. The following hypotheses are thus proposed accordingly.

Hypothesis 4: The development of corporate social innovation determines enterprise market performance.
Hypothesis 5: The development of corporate social innovation determines enterprise operation performance.

2. Research methodology

2.1. Research Framework

This study employs a combination of case study and questionnaire design methodologies. The research framework is as Figure 1.

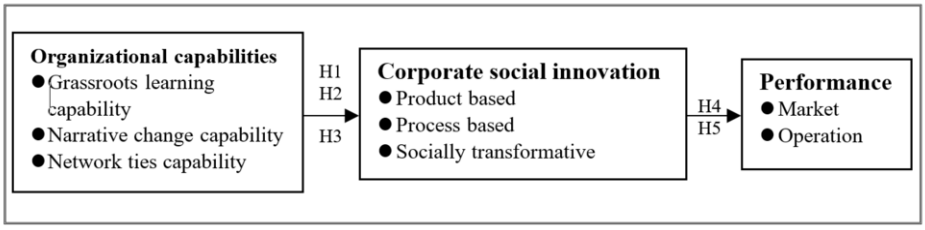

Figure 1. Research Framework.

3. Data collection and analysis method

3.1. Sampling and survey methodology

This study selects Taiwan's financial, electronics, service, and information and technology industries as the sampling targets. The research invites targeted respondents to answer the questionnaire based on different considerations. In total, there are 192 responding firms in this study. The questionnaires were distributed to the sampling targets by Internet, phone, mail, or face-to-face interviews in terms of several research assistants or e-documents sent via the university. Data analysis methods used in this research include factor and validity analysis and linear regression.

3.2. Factor and validity analysis

The discussion factors in this study include grassroots learning capability (GLC), narrative change capability (NCC), social ties capability (SIC), business ties capability (BIC), institutional ties capability (ITC), socially transformative corporate social innovation (STCSI), product-based corporate social innovation (PDCSI), process-based corporate social innovation (PRCSI), market performance (MP), and operational

performance (OP). The results of factor analysis and reliability analysis are listed in Table 1. The table shows that all the eigenvalues of factors exceed 1, while the Cronbach's α values for every factor exceed 0.7. These results indicate acceptable validity and reliability of the dimensional factors.

Table 1. Factor analysis and validity analysis of discussion factors.

Factors		**Eigenvalues**	**Cronbach's α**
Grassroots learning capability		3.263	0.924
Narrative change capability		8.501	0.955
Network ties capability	Social ties	1.145	0.774
	Business ties	1.713	0.854
	Institutional ties	6.714	0.876
Corporate social innovation	Socially transformative	2.340	0.753
	Product-based CSI	2.541	0.788
	Process-based CSI	2.779	0.853
Market performance		3.899	0.926
Operation performance		3.566	0.899

3.3. The influence level of independent factors on firms CSI

In the regression analysis results, this study focuses on the positive effects of independent factors on dependent variables. Table 2 shows that the results of regression models 1, 2, and 3 indicate the contribution of narrative change capability (NCC) and business ties capability (BIC) to firms' socially transformative corporate social innovation (STCSI), product-based corporate social innovation (PDCSI), and process-based corporate social innovation (PRCSI). Meanwhile, grassroots learning capability (GLC), social ties capability (SIC), and institutional ties capability (ITC) have no effect. Regarding market performance and operational performance, models 4 to 5 display product-based corporate social innovation's (PDCSI) effects on firms' market performance. In addition, process-based corporate social innovation (PRCSI) has significant and positive effects on firms' operational performance. Thus, their moderating roles are worth discussing. The final results from the regression models suggest partial support for H3, H4, and H5, significant support for H2, but no support for H1.

Table 2. Regression analysis for Taiwanese firms.

Factors	Model 1 STCSI	Model 2 PBCSI	Model 3 PRCSI	Model 4 MP	Model 5 OP
	β	β	β	β	β
Independent factors					
Grassroots learning capability (GLC)	0.121	0.056	0.075		
Narrative change capability (NCC)	**0.429*****	**0.433*****	**0.208***		
Social ties capability (SIC)	-0.025	0.111	0.017		
Business ties capability (BIC)	**0.355*****	**0.339*****	**0.381*****		
Institutional ties capability (IIC)	-0.039	0.050	0.041		
Mediating factors					
Socially transformative CSI (STCSI)				0.078	-0.014
Product-based CSI (PBCSI)				**0.312****	0.182
Process-based CSI (PRCSI)				0.045	**0.231***
Adjust R^2	0.429	0.444	0.240	0.151	0.121
Durbin Watson	1.864	1.519	1.290	1.965	1.792
F value	29.818***	31.707***	13.120***	12.422***	9.804***

Note: Significance at the 95% confidence level. $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$.

4. Discussion and conclusion

This research constructs and verifies the conceptual models via managers' viewpoints and is supplied from two case studies. Differences in narrative change capability and business ties capability levels in firms may influence the level of firms' corporate social innovation outcomes (product-based/process-based/socially transformative corporate social innovation). Furthermore, the degree of distinct social innovation outcomes tends to increase firms' market performance and operational performance. We present the theoretical contributions and management implications as follows.

For developing CSI, firms may initially focus on establishing narrative change capability. For instance, they may consider determining the roles that managers or employees would play, what past and current problems and societal challenges are framed, which activities by the initiative and other actors are driving and/or hindering change, and how narratives of change relate to dominant societal narratives [9-10]. Regarding network ties capabilities, business ties capability could stir corporate social innovation, while the other two ties capabilities have no effects. Second, product-based CSI determines market performance, while process-based CSI has significant positive impacts on firms' operational performance. Socially transformative CSI does not affect firms' performance, most probably because the research targets are general businesses, not social businesses. For sustainability, firms have to seek profits despite executing CSI.

In two case studies, Case A offers digital education services. The critical success factor of Company A lies in its pursuit of social innovation to cultivate students' mental feelings and education requirements. CEO A considers grassroots learning capability vital because it is helpful to narrative change capability and leads to successful CSI and

firms' performance. The other case is a medical and health examination center, which is an independent provider of medical and health examination services. General Manager B said that Company B focuses on product-based CSI and process-based CSI because the sustainability source of enterprises is profit. The primary CSI style used in the two case companies is product-based CSI and process-based CSI because they are helpful to firms' market performance and operational performance. The difference between these two companies is that one considers grassroots learning worthwhile for CSI (Case A). In contrast, another considers that grassroots learning could comprehend consumers' needs but could not benefit firms' CSI (Case B). Consequently, our research raises the patterns of Taiwanese firms' CSI modes and the relationships between the independent and mediating factors and firms' market performance and operational performance practices.

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