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After the Ground Stopped Shaking: Socioemotional Wealth and Social Capital in Post-Disaster Recovery of Small Family Businesses

Master's Thesis within Business Administration (article track)

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Master's Thesis in Business Administration

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Abstract

This study is the first to measure the interaction of socioemotional wealth (SEW) and social capital, consisting of community and institution, and their impact in post-disaster recovery of small family businesses. Hierarchical multiple regression is used based on a sample of 79 small family businesses in Indonesia. Our findings suggest that family firms in post-disaster situation are able to pursue both SEW goals *and* economic gains, thus breaking the trade-off between SEW vs. economic benefits. More specifically, we found that SEW—as a strategic decision making tool—shows its prominence on the interaction between SEW-community and SEW-institution. This implies that small family businesses need to find synergy between socioemotional endowments and social capital to help them to bounce back and recover after a disaster.

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Prologue

One morning has turned into a thrill. At 05:54 local time, 6.3-magnitude earthquake struck the city of Yogyakarta, Indonesia in May 27th, 2006 with the epicenter just 20 km in the south-southeast of the city (USGS, 2006). What was supposed to be a rush morning for the people to go to their offices and schools had became a calamity filled with terror and panic. The city was continuously shaken in one minute by the tectonic subduction that lies under the country. To make even worse, rumors were spread that the earthquake will be followed by a tsunami. People were traumatized by the tsunami that hit Aceh in 2004 and they were chaotically fleeing to the north in the midst of a deadlock traffic. There was no tsunami occurred, fortunately. But the numbers of casualties reached more than 5,700 people, more than 38,000 people were injured, and as many as 600,000 inhabitants were displaced in Bantul, Yogyakarta area (USGS, 2006). Plenty amount of houses and buildings were collapsed and rendered unusable. The victims were terribly shocked that they lost not only their houses but also their beloved relatives. At this point, the evacuees were heavily dependent on the aid distributed by the humanitarian reliefs and government. The local economy was in a quagmire.

> *Indonesia is on the frame as one of the most disaster-prone regions. It lies within the Ring of Fire, the home of over 75% of the world's most active volcanoes. Not only rich with active mountains, Indonesia is also strategically located where three tectonic plates join: Euraisan plate, Australian plate, and Philippine plate (USGS, 2012). In short, volcano and earthquake are lurking beneath.*

1. Introduction

1.1 Background

In the scenario above, many people lost their lives and some even lost their businesses which were their livelihood. Most importantly, the flourishing of the community was also dependent on the survival and success of the small businesses. But in a disaster context, survival of small businesses is more difficult, that is the size of the business determines the success factor, for example large businesses have a better rate of success compared to small businesses (Kalleberg & Leicht, 1991). This is because they have the necessary resources to bounce back to recovery, whereby for small businesses, due to the lack of having their own resources, survival success factors is dependent on aides from institutions, community, and many other factors (Runyan, 2006).

Having said that, many of the businesses that were affected by the disasters in Yogyakarta were small businesses and most of these businesses were family-owned. Compared to the medium and large-sized businesses, these small family businesses are more susceptible to external disruptions due to the limited access of their resources, which is made worse by the inevitable loss of economic and human capital in the face of disaster. This leads to a double hit consequence, because of their dependence on goods and services necessary for them to recover are provided by other small businesses who themselves are also impacted by the disaster (Schrank, Marshall, Hall-Phillips, Wiatt, & Jones, 2013).

The described scenario of Yogyakarta, where earthquake swept away the small businesses' means of production, suppliers, customers, and even the marketplace, made it difficult for a successful recovery for these businesses even after the disaster. In a double hit situation, it raises the importance of the network between individuals in the community, which is associated to social capital, for their recovery and survival. Thus, social capital plays a crucial role here by building resilience and entrepreneurship of the local community and their businesses in post-disaster (Aldrich, 2012; Westlund & Bolton, 2003); even more, social capital is even reinforced when economic and human capital perish (Johannisson & Olaison, 2007). Therefore, it is assumed in this paper: social capital consisting of both community and the institution is an important factor for the recovery of small family businesses in a post-disaster situation.

Also emphasizing on the above, family businesses in general are marked with unique characteristics and peculiarities, such as having a strong preference for a broader spectrum of non-economic utilities, including prioritization of concepts of self and identity as being important in creating a positive family image and reputation for the firm (Kepner, 1983), being recognized for their generous deeds, enjoying both the social support and prestige from their family and community from friends and acquaintances (Lee & Rogoff, 1996), and the accumulation of "social capital" (Arregle, Hitt, Sirmon, & Very, 2007) among others.

The above mentioned non-economic endowments have been collectively coined by Gomez-Mejia et al. (2007) as "socioemotional wealth" (SEW), which has the focus of viewing the family as a unit of analysis where the family members interact as individuals in a network. Hence, parallel to the emergence of integrating social capital in family business, the term socioemotional wealth came into place as an overarching concept that refers to non-financial aspects or “affective endowments” of family business (Berrone, Cruz, & Gómez-Mejía, 2012). This concept was initially presented to explain family firms’ behavior *vis-à-vis* risk taking (Gómez-Mejía et al., 2007) and since then SEW has grown to explain family firms’ behavior on managerial decision (Gómez-Mejía, Cruz, Berrone, & Castro, 2011). Drawing from these arguments, we assume that SEW is fundamental for the small family businesses in rebuilding their resources, which later leverages the performance.

Based on the above as our second assumption, we take the stance to relate SEW with social capital in regard to the recovery of small family businesses in a post-disaster situation. In fact, we go further to say that social capital consisting of community and institutions need the interaction with SEW in order to lead to a sustainable recovery of small family businesses in post-disaster milieu. Hence, with the dimensions of SEW developed by Berrone et al. (2012) and its recent development, this research will be posed as an answer to the call of a theoretical stretch of investigating the contribution of SEW on its relations to family businesses in post-disaster recovery.

1.2 Problem Discussion

There is a growing discourse on SEW as an all-embracing notion of nonfinancial value that drives the behavior of family businesses (Berrone et al., 2012; Berrone, Cruz, Gómez-Mejía, & Larraza-Kintana, 2010; Gómez-Mejía et al., 2011; Gómez-Mejía et al., 2007). While the development of the social capital theory dates back to 1970s (Granovetter, 1973), our awareness and understanding on SEW are just started when Gómez-Mejía et al. coined the term in 2007. With both concepts are argued to be unique in particular to family business, little do we know about *the combination* of both in regard to family businesses performance.

There is a gap in the literature when it comes to family business *and* post-disaster recovery. For instance, our desk research on Scopus by using the keywords ‘family business post-disaster recovery’ returns only seven entries with two relevant articles related to our research purpose (and returns one result if the word ‘firm’ is used instead of ‘business’). In these two articles, there is no explicit use of the term family business. However, one article takes the view on measuring the demise and survival rate of small businesses (Schrank et al., 2013) while the other one takes the view on the vulnerability of both small and large businesses to disaster (Zhang, Lindell, & Prater, 2009). The closest subjects so far when it comes to family business recovery are more related to grief (Shepherd, 2009; Shepherd, Wiklund, & Haynie, 2009), business exit (Salvato, Chirico, & Sharma, 2010), and declining performance (Morrow, Sirmon, Hitt, & Holcomb, 2007). Then we decided to start our review from the context of origin, post-disaster recovery.

On the other hand, studies being done on post-disaster recovery bring to light the critical role of social capital in building the resilience of the community. Here it lies the red thread, social capital is the crux on both family business and post-disaster recovery. If we take into account our previous assumption about SEW, then the chain of SEW *and* social capital *and* post-disaster recovery seemed to be a promising field of research to be addressed—and there are little studies, if not none, being done in this area.

1.3 Purpose of Study

By taking the context of post-disaster recovery in small family businesses, we position this study to extend our understanding on the theory of SEW in family business, especially on its interaction with social capital. This purpose leads us to the following research question: Does SEW enhance or diminish the role of social capital in post-disaster recovery of small family businesses? Hierarchical multiple regression analysis is used to answer this question.

2. Theoretical Framework and Hypotheses

In this chapter, we are mainly focused on discussing the connection between several concepts that are in place: social capital, post-disaster recovery, small family businesses, and SEW. An extensive literature review about each concept separately is provided in Appendix B.

2.1 Social Capital and Post-Disaster Recovery

Research on post-disaster recovery have found that social capital plays an important role in building the resilience of the community (Aldrich, 2012). Not only for the resilience of the community per se, disaster is also found to trigger the creation both entrepreneurship and social capital that were invisible when “business as usual” rules in society (Johannisson & Olaison, 2007). Other studies also highlight the importance of local social capital in optimizing the humanitarian and disaster relief process (Day, Melnyk, Larson, Davis, & Whybark, 2012) and as predictor for the success of nascent entrepreneurs (Davidsson & Honig, 2003). Departing from these findings, it can be inferred that social capital has to be taken into account in the discussions of post-disaster recovery.

Social capital in its essence can be described as the ability of actors to extract benefits from their social structures by being members of a network (Davidsson & Honig, 2003; Lin, Ensel, & Vaughn, 1981). While other types of capital, such as human capital and cultural capital, are focused on the quality of individuals, social capital put emphasis on the network *between* individuals (Lin, 1999). According to Nahapiet and Ghoshal (1998, p. 243) social capital is “the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit.” This embedded resources lead to the creations of intellectual capital, inter-firm learning, supplier interactions, product innovation and entrepreneurship, and therefore it is considered to be a highly important resource (Adler & Kwon, 2002; Nahapiet & Ghoshal, 1998). In other words, social capital is a function or a role that makes possible the achievement of certain ends that in its absence would not had been possible (Coleman, 1988).

2.2 Social Capital in Post-Disaster Recovery for Small Family Businesses

In post disaster situation, families lost their businesses and—as consequence—are dealing with grief which is a typical response associated with the loss of something important (Archer, 2004). The business is important not only because it offers income independence (Baumol, 1990) and a sense of satisfaction (Douglas & Shepherd, 2002), but also because it is associated to family activities and the embodiment of the family pride and identity (Meyer & Zucker, 1989). Although this being the case, families tend to recover much quicker when they utilized their strong ties in social capital relationships (Bolin, 1976). This concept here could be related to the concept of SEW, which will be discussed later in section 2.3.

On continuing on the above, family businesses are influenced by the family relationships where the relationship determines how the business is structured, governed, and managed (Salvato & Melin, 2008). The relationships here is characterized by strong integration of the family within the firm, where it leads to the strong forms of internal social capital that become valuable resources in themselves, which is sometimes defined as "survivability capital" (Sirmon & Hitt, 2003). This survival capital helps them quickly recover their business in post disaster milieus.

The survivability capital associated to the internal social capital of the small family businesses consists of both the integration of the unique resources and the survivability capital (Salvato & Melin, 2008). The unique resources and the survivability capital comes from the pooled personal resources of the family where they are willing to give loan, contribute, or share the loss of resources as means of help in their recovery process (Danes, Lee, Stafford, & Heck, 2008; Salvato & Melin, 2008). In contrast to this, it has also been stated that the forms of social capital in family businesses are often crowded with difficulties that are related to emotional ties, nostalgia, and lack of commitment escalation that have a negative consequences for the business that affect the making of important decisions (Sirmon & Hitt, 2003). Many researchers have also concluded that family tends to have a strong level of familial, trustworthiness, and group solidarity within the social capital as a result of shared loss and experience in a disaster milieu (Bolin, 1976; Zakour & Gillespie, 2013). However, in times of huge disasters, the strong level of internal social capital alone is not enough. Family business owners have to look for external social capitals if they are to survive as the timing between threat and response are happening in a relatively short time. In addition to the support from the family, they need friends, neighbors, surrounding communities, and other institutions like banks and NGOs, which are also essential for the recovery of small businesses.

In conclusion it could be said, social capital captures both the internal and external relationships that people enjoy in social structures and this allows them to recognize and exploit opportunities that lead to new venture creations (Davidsson & Honig, 2003; Westlund

& Bolton, 2003) and it even contributes to the recovery of small businesses faced in a pre- or post-disaster situation. Thus, we deconstruct the relation between social capital and family businesses in post-disaster recovery into two parts that correspond to (1) community and (2) institution.

2.2.1 Community Support and Institution Support in Post-Disaster Recovery

The operations of a business is interlinked to the society where it operates. As business is a social entity, the interaction between the business and the surrounding community gradually creates bonds that eventually will be a source of recovery in disaster (Paton, 1997). In family business, social capital is created when the family develops relationships outside the family with friends, employees, customers, suppliers, and other stakeholders that in turn generates goodwill (Dyer, 2006). The more the family invest in building and maintaining these networks, the stronger the stability, closure, and interdependence between the actors that may be of benefits for the family business in the future (Arregle et al., 2007).

In a larger extent of society during post-disaster, a study by Kaniasty and Norris (1995) in the context of Hurricane Hugo has found that the victims were united into ‘altruistic’ or ‘therapeutic’ communities characterized by solidarity, togetherness, and mutual helping. Other findings from case studies in Kobe, Japan and Gujarat, India earthquakes have shown that the level of trust, norms, and participation for collective actions in the communities played important roles for disaster recovery (Nakagawa & Shaw, 2004). Scholars also termed the notion of community resilience as a configuration of networked adaptive capacities where social support and community bonds, roots, and commitments are the factors affecting the resilience (Norris, Stevens, Pfefferbaum, Wyche, & Pfefferbaum, 2008).

By combining the view of community support toward the society in general and toward the business in particular, we operationalize community support as “the support received from the surrounding friends and neighbors to the business owner’s recovery in both terms financially and non-financially through moral, spiritual, and physical support.” These lead us to the following hypothesis:

Hypothesis 1a: Community support is positively related to small family business post-disaster recovery.

Disaster is not only a concern for the surrounding communities, but it also receives magnitude of exposures that pull national and international institutions to help the relief process. With post-disaster recovery being divided into two major part of restoration and long-term recovery (Mayunga, 2007), institutions such as the governments, humanitarian reliefs, and banks contribute to the recovery processes by providing aid in forms of economic capital—by donating money, production tools—and human capital—by providing skill development trainings. From the outset, it comes naturally that the aid from these institutions will always positively influence recovery. But the evidence so far have shown mixed results. Becker (2005) as cited in Aldrich (2012) argues while aid can obviously help in the immediate response to disaster, the large inflow of aid from rich nations will only assist in the very near term. The vast amount of aid given after the 1972 Managua earthquake in Nicaragua triggered massive corruption and engendered a revolution and counter-revolution, not rapid recovery (Garvin, 2010 as cited in Aldrich, 2012). Aldrich (2012) even goes further to ascribe the idea of more money will lead to faster recovery as a 'folk wisdom'. On the other hand, a study on Hurricane Andrew found that household recovery depended on both private funds and federal and state public assistance programs (Dash, Peacock, & Morrow, 2000). After acknowledging these arguments, we submit on the latter where business recovery will also dependent on institution support. Hence:

Hypothesis 1b: Institution support, in the form of external aid, is positively related to small family business post-disaster recovery.

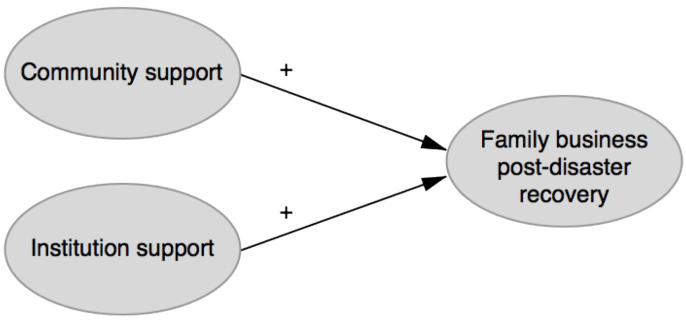

Figure 1. Hypotheses 1a and 1b.

Until this point it should be clear that community and institutions are the components within the social capital. Its role are found to be important for post-disaster recovery and through this paper we deduce that its usefulness is also true for small family businesses' recovery. As was stated before in the introduction, parallel to the emergence of social capital as an important factor in family businesses, the term socioemotional wealth came into place as an overarching concept that refers to non-financial aspects or "affective endowments" of family owners (Berrone et al., 2012). That is to say, although the social capital stated here covers both the community and the institutions, the concept of SEW explains how the involvement and dedications of the families to their businesses will decide the usage of the resources—including social capital.

2.3 Socioemotional Wealth and Social Capital

Gomez-Mejia et al. (2007) take the discussion on family business literature to the new area by coining SEW model to capture the nonfinancial aspects that motivate family firms' strategic decision. SEW is defined as the family-oriented social and emotional attachment of the individuals to their businesses (Berrone et al., 2012). Since its inception, this concept has been used to explain family firms behavior toward risk avoidance (Gómez-Mejía et al., 2007), corporate reputation (Berrone et al., 2010; Zellweger, Nason, Nordqvist, & Brush, 2011), managerial decision (Gómez-Mejía et al., 2011), proactive stakeholder engagement (Kellermans, Eddleston, & Zellweger, 2012), and family employment (Cruz, Justo, & De Castro, 2012). On their subsequent work, Berrone et al. (2012) describe the dimensions of SEW as (1) family control and influence; (2) family members' identification with the firm; (3) binding social ties; (4) emotional attachment; and (5) renewal of family bonds to the firm through dynastic succession. The all-embracing notion of SEW construct has proven to be useful for interpreting a wide variety of family business phenomena and it is the single most important feature of family firm's essence that separates it from other organizational forms (Berrone et al., 2012).

Bringing together SEW and social capital, we argue that SEW is a modifier that adds or restricts the creation and usage of social capital. This corresponds to Granovetter (1973) who argues that weak ties are seen as indispensable to individuals' integration into communities while strong ties lead to overall fragmentation. Further he adds, "the strength of a tie is a combination of the amount time, the *emotional intensity*, the intimacy (mutual confiding), and the reciprocal services which characterize the tie" (Granovetter, 1973, p. 1362). In this light, we can infer that SEW is equivalent to the emotional intensity he is referring about.

Based on the principle of trust and reciprocity that characterize social capital (Coleman, 1988), family businesses that have a strong SEW, i.e. those who can create and strengthen their bonding and bridging social capital, will be in the position to get more support from their immediate family members and neighboring communities. While this is also true that through cultivating the social ties family businesses can have more access to institutional support, their reliance on the support is still subject of further examination. Bertrand and Schoar (2006) found a very moderate support to the idea that stronger family values should be mainly interpreted as a reflection of weak formal institution. In other words, it suggests that the strength of family values in a business should not be interpreted in relation with the weakness of formal institution. Instead, in this study we attempt to relate the strength of SEW with *the reliance* to institutional support.

Other study reports that SEW has a negative impact on proactive stakeholder engagement, suggesting that SEW can be either an affective endowment or burden for family firms and their constituent (Kellermans et al., 2012). This finding explains that strong SEW in certain dimensions lead to family-centric behavior, which contribute to harmful stakeholder behaviors. In the context of small businesses, the stakeholders are quite limited to one of the three categories between family, community, and formal institutions. Studies have shown that the preservation of SEW is the main concern of family firms when they are exposed to performance risk. For example, family firms will rely less on formal institutions such as cooperative (Gómez-Mejía et al., 2007) or other external source of fund since they are afraid of losing the control of the business. The higher the degree of SEW in family firms, the more it inhibits their openness and reliance toward the institution due to the 'double-sided sword' effect of SEW.

Based on the above, as was previously mentioned, it is important to relate SEW with social capital in regard to the recovery of small family businesses in a post-disaster situation. In fact, we go further to say that social capital, which comprised of the community and institutions, needs the interaction with SEW in order to lead to a sustainable recovery of small family businesses in post-disaster.

Furthermore, we also take a stance that the interaction of SEW with the community support will enhance the recovery, while the interaction between SEW and institution support will diminish the recovery. SEW may positively enhance the relationship of the community toward the recovery because of the common principles held by both the community and SEW of family businesses, which are trust and reciprocity (Coleman, 1988). As for institution that lacks the same common principle, we assume the interaction between SEW and institution support will diminish instead of enhance the relationship towards recovery. Hence, based on these arguments on family businesses being more open towards community but restricted towards institutions in the context of SEW, we suggest the following hypotheses:

Hypothesis 2a: SEW moderates the relationship between community involvement and small family business recovery. SEW enhances the relationship that community support has with small family business recovery.

Hypothesis 2b: SEW moderates the relationship between institution support and small family business recovery. SEW diminishes the relationship that institution support has with small family business recovery.

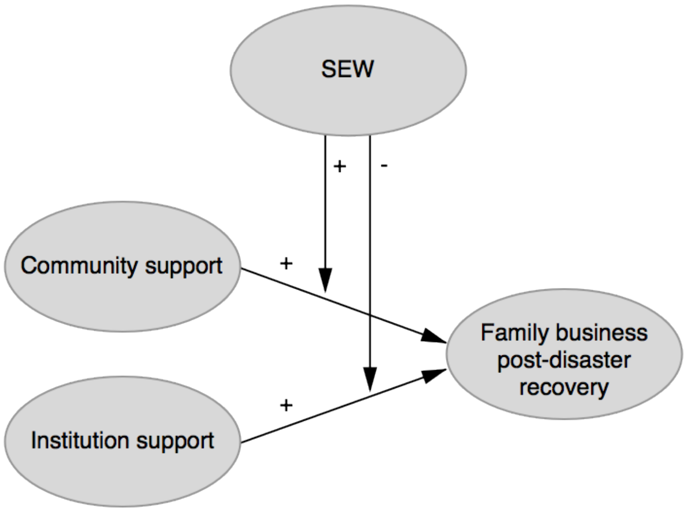

Figure 2. Hypotheses 1a, 1b as main effects and Hypotheses 2a, 2b as interaction effects.

3. Methods

In this chapter, we mainly focus on briefly discussing the three main aspects associated to, research design and sample, variables and measures, and the control variables. More elaborate explanation of the method including research design, research philosophy and the epistemology can be found in Appendix C.

3.1 Research Design and Sample

This study is aimed to examine the relationship between SEW and social capital, manifested in community support and institution support, toward the recovery of family businesses. To fulfill this aim, we set out a quantitative cross-sectional study and purposively chose small family businesses in the Bantul, Yogyakarta area as our sample due to their proximity to the disaster area when the earthquake struck the region in May 27th, 2006. We attempted a preliminary data inquiry by contacting the Institute for Research and Community Service Universitas Gadjah Mada (LPPM UGM) and a local NGO 'APIKRI' to obtain local contacts for small businesses in Bantul that were affected by the disasters. As a result, we received one set of contacts of handicraft producers in Bantul. However, further follow-ups to these contacts were then aborted since the businesses inquired through the contacts were not found. Consequently, we decided to deploy a guerrilla survey in the respective place. As compared to other areas in Yogyakarta, Bantul has more density of small businesses per village and each village is most likely to have a specialization in handicraft.

Due to the distance constraint of the authors, we employed five bachelor graduates from Universitas Gadjah Mada as our enumerators in Yogyakarta to execute the data collection. After the questionnaire was developed, the enumerators were briefed on the research design and purpose and were instructed to distribute the questionnaire in the targeted area. The survey was conducted between the second half of March until the first week of May, 2013, which resulted in 87 responses and 4 no-returns. 5 responses were obtained directly on the spot whereas the remaining 82 were taken few days after the questionnaires were distributed. The final sample with full information comprised of 79 respondents (91% of the original sample). These businesses were then taken forward to be used in testing Hypothesis 1a, 1b, 2a, and 2b.

3.2 Variables and Measures

The dependent variable in our study is *family business recovery*. Since the term 'disaster recovery' in general is dubious and may include a wide range of measurement (Quarantelli, 1999), we chose to operationalize family business recovery as "the financial performance of the business after the disaster, measured by the discrepancy between the average monthly turnover in pre-disaster and the current time when the research was performed." The discrepancies could have negative or positive values depending on the difference. The more positive the discrepancy is, the better they are recovering.

Three independent variables were used in this study comprised of community support, institution support, and SEW. For *community support*, we adapted the items developed by Onyx and Bullen (2000) into two items: 'frequency of participation in the local community gathering and/or events' and 'level of helpfulness of friends and neighbors to the business after the disaster' ($\alpha = 0.84$). 5-point scales ranging from 'never' to 'always' were used for the former item and 'not helpful at all' to 'extremely helpful' were used for the latter. For *institution support*, we operationalized the term by following Aldrich (2012) as "the amount of aid, supplies, and experts provided to the area by the government and NGOs". Thus, we measured institution support by three items: 'receiving aid from the government, NGOs, or other institutions', 'participation in training held by the government, NGOs, or other institutions', and 'funding source of the business by the bank, government, other institution' ($\alpha = 0.72$). Dichotomous scale of 'yes' and 'no' were used on all of these items. SEW construct is used with its 5 dimensions developed by Berrone et al. (2012). We selected 3 items from each dimensions that are relevant for small family business in our context of study. As a result, we had 15 items with 5-point scales ranging from 'strongly disagree' to 'strongly agree' as our measure ($\alpha = 0.79$).

3.3 Control Variables

We acknowledged that the damage from the disaster may affect businesses' recovery (Aldrich, 2012). We therefore control for 'level of damage caused by the disaster' by asking the business owners 4-point scales ranging from 'no damage' to 'severe damage' with the description of the damage on each point. In addition, gender and the fact whether the business is the main source of income of the owner may also influence the performance of micro and small businesses (Cruz et al., 2012; Lee & Rogoff, 1996). Thus, we control for 'gender' and 'business as main source of income' and dummy coded them. The respondents' level of education was also controlled through 5-point scales measurement consisted of 'not attending school' to 'bachelor and beyond'. After we obtained all the variables and achieve a robust value of reliability, we moved forward to continue the analysis as we will present in the following chapter.

4. Results

The means, standard deviations, and correlations of all the continuous variables are shown in Table 1. The regression residuals distribution of the dependent variable fulfills the normality assumption (Jarque & Bera, 1987), thus permitting us to proceed for further analysis. We chose to use hierarchical multiple regression analysis to test the hypotheses because it enabled us to identify whether the interaction terms give significant contributions over and above the direct effects of the independent variables.

Table 2 displays the results (for the details see Appendix C). The base model that contains only the control variables does not have any significant role to explain the variance in turnover discrepancy. It is on the main effects model where we have a statistically significant contribution over and above the base model (R^2 = 0.17, p < 0.05). The direct effect of community support shows no significance to accept Hypothesis 1a whereas the effect of institution support shows a significant contribution towards turnover discrepancy, but in the opposite direction from our Hypothesis 1b. Thus, for both of our first hypotheses, we did not find any supporting evidence. Moving to the interaction effects, both of the interaction terms display significant contributions over and above the main effects (R^2 = 0.18, p < 0.001). This result confirms Hypothesis 2a that SEW enhances the effect of community support on family business recovery. Hypothesis 2b is partly supported that SEW is statistically significant as a moderating variable, but, as it goes with the main effect, our hypothesis on the variable's direction is refuted. On the contrary, the interaction between SEW and institution support shows that it has a positive effect on family business recovery as measured by turnover discrepancy. This is further explained after our presentation of Table 1 and Table 2 in the following section.

Table 1. Means, standard deviations and correlations for quantitative variables

Variables	Mean	S.D.	1	2	3	4	5
1. Turnover Discrepancy	119,620	3,458,364	1				
2. SEW (standardized)	0.00	0.50	−0.17	1			
3. Community Support (standardized)	0.00	0.93	−0.16	0.17	1		
4. Institution Support (standardized)	0.00	0.80	-0.28^{*}	0.10	0.54^{***}	1	
5. Education	3.25	1.03	−0.12	−0.15	−0.09	−0.18	1
6. Damage Level	2.67	1.08	−0.08	0.19	-0.38^{***}	−0.20	−0.19

$^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$ ($n = 79$)

Table 2. Independent and contingency models of community support, institution support, socioemotional wealth, and turnover discrepancy

	Base model		Independent Model		Contingency model	
	Coefficient	*t*-statistic	Coefficient	*t*-statistic	Coefficient	*t*-statistic
Control variables						
Gender	−0.15	−1.11				
Education	−0.13	−1.08				
Business as the Main Source of Income	0.06	0.52				
Damage Level	−0.16	−1.23				
Main effect variables						
Community Support			−0.08	−0.58		
Institution Support			-0.35^{**}	−2.69		
SEW			−0.14	−1.23		
Interaction						
SEW × Community Support					0.26^{*}	2.20
SEW × Institution Support					0.27^{*}	2.43
Model						
R^2	0.04		0.21		0.39	
Adj. R^2	−0.01		0.13^{*}		0.31^{***}	
F-statistic		0.86		2.71		4.93
Change in R^2			0.17		0.18	
Change in F				4.99		10.23

Standardized regression coefficients are displayed in the table.
$^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$ ($n = 79$)

To elaborate our results, we have produced interaction plots following the procedures by Dawson (2013) that visualize the impact for each moderating effect based on our full model (see Figure 3 and Figure 4). Through these figures, we found that (1) small family businesses that have low community support with low SEW ***will recover better*** than their counterpart that have low community support with high SEW. In other words, given the low support from the community, the businesses that opted to preserve their SEW will have a lower recovery performance. Next, (2) family businesses that have high community support with low SEW ***will recover worse*** than those that have high community support and high SEW. This means that given a high level of support from the community, the businesses that are able to leverage the support through high level of SEW will be better off to their recovery performance rather than if they have low level SEW.

Similarly, (3) small family businesses that have low institution support with low level of SEW ***will recover better*** as compared to those that have low institution support with high SEW. Put it differently, given the low support from the institution, the businesses that chose to favor their SEW will have a lower recovery performance. Finally, (4) family businesses that have high institution support with low SEW ***will recover worse*** than those that have high institution support and high SEW. It implies that given a high level of support from the institution, the businesses that are able to corroborate the support with high level of SEW will have higher recovery performance.

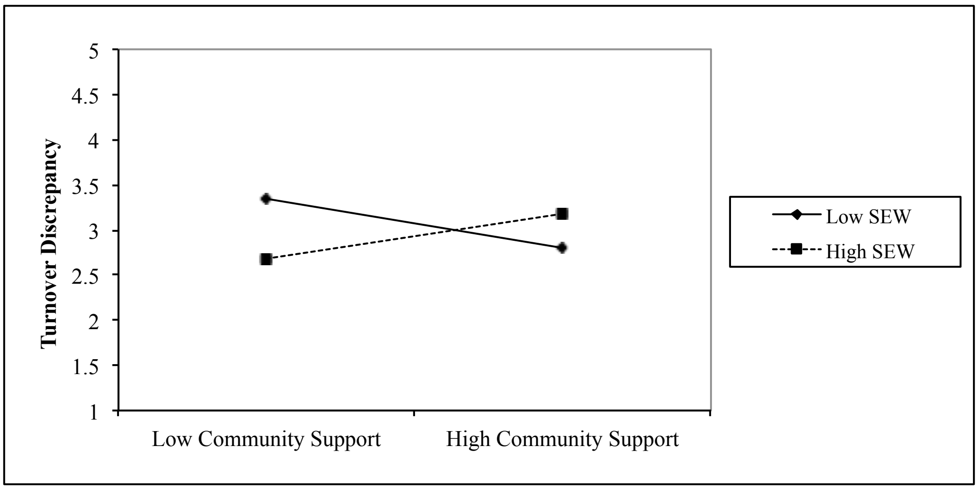

Figure 3. Interaction plot between community support and SEW

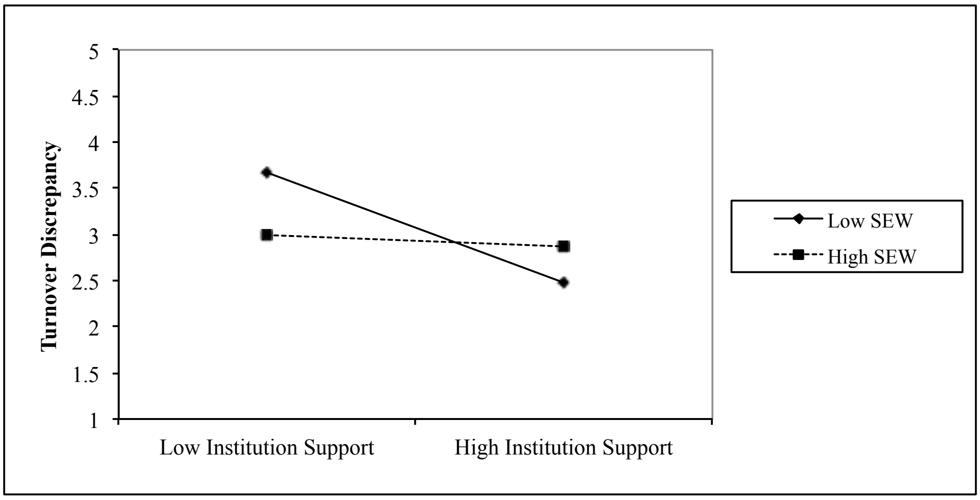

Figure 4. Interaction plot between institution support and SEW

More details are provided in Appendix C that includes the scatter plot based on the raw data. Up until this point, some might find it difficult to comprehend why these results could be possible[1]. To answer this concern, we provide an alternative explanation which will be discussed at length in the next section.

[1] Especially on the notion that low support will lead to high turnover discrepancy, this may be counter-intuitive. But this is completely logical under the perspective of SEW as decision making framework. When family businesses have high turnover, they are less dependent on the institution or community, hence it shows low support; and their performance can increase even more when they release their SEW, hence it shows low level of SEW.

5. Discussion

As described in the previous section, our findings surprisingly contradict the majority of extant literatures which stated that social capital is positively related to post-disaster recovery. In this study, community support shows no significance toward family business recovery; and even if it is significant, it contributes negatively albeit very weak. Institution support, on the other hand, is shown to have a negative and significant impact on family business recovery. We found a mismatch between the framework we have developed on the basis of social capital and post-disaster recovery to the empirical findings, which raises more questions than answers. Why community support shows no significant contribution on business recovery? And why the support from formal institutions such as the government, banks, NGOs, and other institutions lead to a lower recovery performance? These surely need an alternative explanation.

Before we advance further, let us examine the other half of our results. The interactions of SEW-community and SEW-institution have displayed a unique role in family business. Community support by itself has no significant impact on the business recovery. But when it is combined with a strong SEW, it leverages the contribution to be significant and flips the direction of community support from negative to be positive. Similarly, institution support that initially has a negative and significant impact, the negativity is being suppressed with the positive and significant impact of SEW when they interact together.

5.1 Community Support and SEW on Family Business Recovery

It is important to note that the context of this study is focusing on the post-disaster situation where the circumstances are characterized by chaos, emergency, and crisis. In such state, the society might recover much quicker in terms of stability, routine, and living in a collective sense. However, this might not be the case for small family businesses. Their operations were stalled since their production tools were damaged, the marketplace had lost the stability, the purchasing power plummeted, and the support from the community was only helpful at the extent of emotional and spiritual support to the business owners with no visible contribution on the businesses' financial recovery. As we were measuring business recovery by the proxy of turnover discrepancy, it is logical that community support alone contributes more in the rebuilding of the society rather than to the business in particular.

The discussion gets more intriguing on the moderating effects. As it is shown in Figure 3, when the business owners possess a high level of SEW, they corroborated their preservation of family values with the support of the community and turned the neutrality of its effect to be as an advantage that boosts the business to recover. This explanation corresponds to the findings by Johannisson and Olaison (2007) in which they suggest that disaster triggers the creation of social capital and entices entrepreneurship. The direct impact of community support alone does not have any impact on business recovery, it has to be augmented by a high level of SEW for the business to be able to benefit from it. If we recall that one of the dimensions of SEW is *binding social ties*, then when family businesses possess a high level of SEW, they are aware that building trust and creating reciprocal bonds with their surrounding neighbors and community will in turn provide a safety-net for their survival.

Our findings also suggest that the embeddedness of a business in the community is a source of advantage for family business. In Indonesia where it has a relatively weak institutional system, people rely more on the informal system, especially in the rural area where the collectivism is much higher. This interweaving nature between social life and business in the rural area creates interdependency where to live in the community means that people have to participate in community-organized events, which are mostly related to culture and religion. Businesses that are not present in these social events, hence not building the social ties, will face exclusion from the community and bear an unseen social burden because there is no trust and reciprocity invested in the society. Although people might not consciously driven by the motive of 'investment', the outcome of this activity becomes apparent when the stability of the business is shaken.

5.2 Institution Support and SEW on Family Business Recovery

Our findings imply that the support from the government in forms of aid, trainings, and other recovery programs lead to a lower family business recovery performance. This supports the view from Aldrich (2012) where he advocates that money is not the core factor in recovery and even counter-productive in some cases. In this regard, we postulate that the aid given from the institutions has a latent effect that made those who were affected had a 'victimism' mentality and became dependent on the aid with no struggle to be proactive. Particularly on the restoration phase of post-disaster when vast amount of support and donation being poured to the area, the victims started to learn that they do not have to take action to change the circumstances since the aid are superfluous. Without the strong presence of SEW as a decision making tools to be proactive and develop the business, the support from the institutions exacerbate the sustainability of their businesses due to the high dependency that inhibits their entrepreneurial orientation.

We found that high SEW and high institution support can cohabit and the combination between the two has a beneficial impact on recovery performance. This is possible since in the period of post-disaster, the businesses did not have any other option to refuse the aid given by the institutions. They have to accept and thus utilize the support from the institutions to be able to survive. When survival is at stake, our findings suggest that family businesses opted to let in external support to sustain the business; even more so when there is no apparent trade-off that letting in the support from external party will undermine the SEW goal of the business. In such condition, family businesses were able to maintain their SEW while simultaneously utilized the external support synergistically.

5.3 SEW as a Source for Sustainable Advantage

Measuring SEW in a vacuum will not provide meaningful inference. It has to have a context where SEW is being applied to, and in this case its role is significant only when there is an interaction between SEW and the external social capital (represented by the community and institution support). As we have brought up earlier, Figure 3 and Figure 4 demonstrate that the combination of high external support with high SEW yield a higher recovery performance as compared to high external support with low SEW. Put it differently, family businesses with low recovery performance need to find synergy between their SEW and the support by the institution and community if they want to enhance their recovery performance. Recalling that SEW is built under the assumption where economic benefits are at the expense of SEW, it seems to be paradoxical that, in post-disaster, small family businesses can enjoy economic benefits while simultaneously securing their SEW. Regarding to this, our evidence confirms that family businesses are able to possess high levels of both aspects.

To add to what have been discussed among scholars on the resource-based view of the firm (cf. Shepherd & Wiklund, 2005; Sirmon & Hitt, 2003), we propose that SEW is a significant contributor to the survivability capital. More importantly, SEW can be seen not only as family values that bind the family members to get through the hardships, but more than that, these values are manifested in the mindset that guides family businesses' strategic decisions under extreme conditions. Family businesses that possess high level of SEW are indicated to utilize SEW for resource orchestration—it is, the process of corroborating various sources of capital—that in turn leads to the gain of economic benefits. It does not stop in that point. As the businesses made progress in their recovery process, it further reinforces the SEW since they learned that they are able to orchestrate the resources synergistically.

This loop also implies that SEW is not only a framework for strategizing, but also a capital by itself. To reiterate that SEW has five dimensions, which are (1) family control and influence, (2) family members' identification with the firm, (3) binding social ties, (4) emotional attachment, and (5) renewal of family bonds to the firm through dynastic succession (Berrone et al., 2012); framing SEW as a capital means that to invest on each dimension may help family businesses to secure a strategic resource where this resource will in turn guide them on how to orchestrate another sets of resource at their disposal. Figure 5 below depicts these processes.

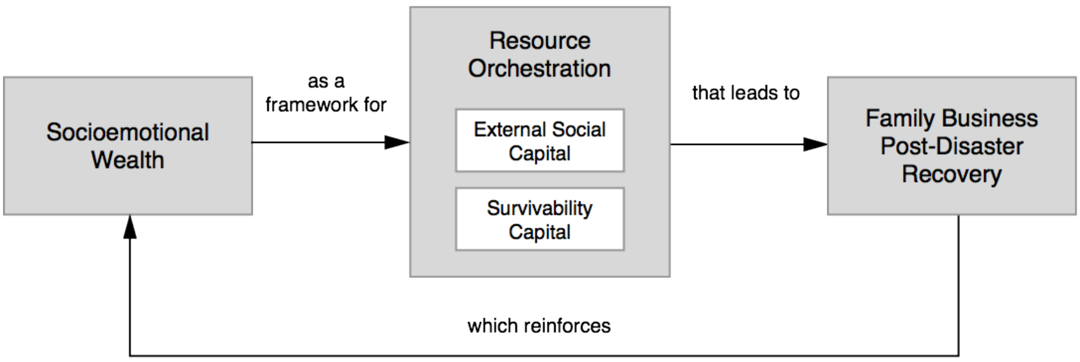

Figure 5. SEW as a Source for Sustainable Advantage: An Alternative Explanation to the Findings

Studies have shown that, in different contexts, family firms are willing to be exposed to performance risk when they value their SEW more in terms of corporate image (Berrone et al., 2010), family control and ownership (Gómez-Mejía et al., 2007), and family embeddedness (Cruz et al., 2012). In times of post-disaster, the pressure is not only that the business has to thrive, *the family* has to survive as well. Hence, to favor one at the expense of another is not an option. Given this duality, this study is the first to measure the socioemotional wealth of small family businesses in times of disaster and we have proven that SEW is the crux for the business recovery as measured by turnover discrepancy. More specifically, SEW as a strategic decision making tool for family businesses shows its prominence on the interaction between SEW-community and SEW-institution. These interactions adds a significant 18% to explain the variance of recovery performance over and above community support, institution support, and SEW separately. Therefore, the looping sequence of SEW as a framework for managing (orchestrating) the resources is the core, and thus a source for sustainable advantage.

6. Conclusions

6.1 Limitations

We are aware that the design of our research is not ideal and therefore several limitations are pertinent to this study. ***First***, recall decay of the respondents. As the earthquake was occurred in 2006, there is a risk of recall decay that might affect the responses given during the survey. ***Second***, simplified questionnaire. The small businesses surveyed in Yogyakarta are resided in the rural areas and they are not familiar with survey instruments such as questionnaire, let alone the one with numerous amount of questions. Consequently, some of the respondents found it confusing to answer the questionnaire in an appropriate way, which resulted in the best approximate answer according to their understanding. In this regard, we developed a much simpler questionnaire as compared to Onyx and Bullen's (2000) to measure social capital and selected only 15 out of 26 items developed by Berrone et al. (2012) for measuring SEW. ***Third***, the lack of (valid) database of small businesses from the local government. Database is a helpful starting point to obtain the population of the targeted sample, but the lack of database made it difficult to pinpoint the exact respondents to be approached. Hence, no information about the population is known and we made trial-and-error efforts by moving from one village to another to find any small business we can spot.

Fourth, a blended nature of recovery and growth. If recovery is understood as a state of returning to normalcy, then any gain that occurred afterward is a form of growth. Our research blends together these notions under the term recovery since it is difficult to measure the recovery without including certain aspect of growth within it unless we have access to a detailed record on the businesses' operation. ***Fifth***, turnover discrepancy as measurement of recovery. As it goes with business performance in general, turnover can be argued as a generic measure of performance. While this might be acceptable in the business with accurate data, for the context of small family business in Indonesia it only gives us a best approximate.

Lastly, adding to all the above is the resource constraints in forms of time and budget. Given a limited time of two months in data collection, we made trade-offs that resulted in low sample size with only 79 small family businesses, which perhaps not strong enough to convince some critical readers.

6.2 Implications for Theory and Future Research

To answer our research question we put forward in the beginning, SEW is proven to enhance the role of social capital in small family businesses recovery after the disaster. We found one support to four of our hypotheses that SEW boosts the contribution of community support to the business recovery while there is no support for the other three hypotheses.

Berrone et al. (2012) have warned that in extreme situations that might lead to the firm's closure, the preference of SEW may be hampered and not as influential as originally assumed. In this situation, as they argued, the firm retracts the decision making process back on the basis of economic logic. Again, this notion is based on three assumptions: first, that the possession of SEW is a trade-off between affective endowments and economic gains; second, family firms will favor SEW rather than uncertain economic benefits; and third, extreme events may force family firms to forgo SEW goals to achieve business survival. However, our findings contradict these assumptions where family firms in post-disaster situation are able to pursue both SEW goals *and* economic gains, thus breaking the trade-off between SEW vs. economic benefits. The synergy between socioemotional endowments and social capital made it possible for family businesses to bounce back and recover as measured by the turnover discrepancy.

In the end, this research should not be seen as complete. Far from it, this research is a pilot to explore the possibility and potential of examining SEW in a new context. Learning from our study, we suggest future research on both areas of quantitative and qualitative studies. For quantitative study, aspired researchers could increase the scope of our research to include a much bigger number of sample with a more well-defined measurement of recovery for family businesses. Yogyakarta as post-disaster context still holds a great potential to examine small family businesses' behavior of recovery. In this regard, we recommend to focus on the most recent disaster in Yogyakarta, which is the Mt. Merapi eruption in 2010. Researchers that are aspired on qualitative study could benefit from this paper since we found an anomaly of family business behavior that they can possess high SEW and high external support. Is this just an anomaly? Or similar phenomenon could appear elsewhere? These are the questions they can try to investigate.

By acknowledging the communality nature of the cultural context in Yogyakarta, this research discovered a possibility to frame SEW in the notion of organizational culture. The direction could be to investigate the dynamics between SEW as decision making framework in family businesses (as organizational culture) and the framework of the community where they operate (as communal culture). To understand the push and pull between these sides will shed light onto understanding small family businesses behavior where ‘family’ is being understood to include the surrounding neighbors. A possible research question for this direction is: “How the dynamics between SEW and communal culture take place in micro and small businesses?” We believe that SEW is a complex phenomenon where its creation and formulation takes place not in a vacuum within the family only, but by a constant interaction with the surrounding environments. Thus, deeper exploratory and explanatory studies on these directions will be a valuable contribution in the future.

Epilogue

By May 27th, 2013, full 7 years have passed since the catastrophe and small family businesses in Bantul, Yogyakarta are still striving to regain what was lost. Meanwhile, another disaster has struck the city in 2010: a volcano eruption from Mt. Merapi. If the 2006 earthquake was severely affecting the Southern part of Yogyakarta where Bantul is located, the 2010 eruption has displaced more than 320,000 people from the Northern part of the city and replaced their houses with three meters high of hot ashes. What has been a stable recovery phase was suddenly reverted into a flux of restoration phase for the city. The inhabitants in Bantul might have learned to cope with such situation, but different areas have different stories. For the time being, the businesses in Yogyakarta have learned that, not only they have to be aware of the threat from the market, but also to live in a constant alertness to the Mother Nature.

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Appendix A: Additional Literature Review

If we take the bird's eye view, this thesis stands on the intersection of post-disaster recovery, family business, social capital, and SEW. Figure 6 below depicts these interconnections. As shown on the figure, the top and bottom ovals—post-disaster recovery and family business—represent the contextual settings while the left and right ovals—social capital and SEW—represent the components at play within the contexts. Given this complexity, it is helpful in this section to present our reviewed literature on each topic separately.

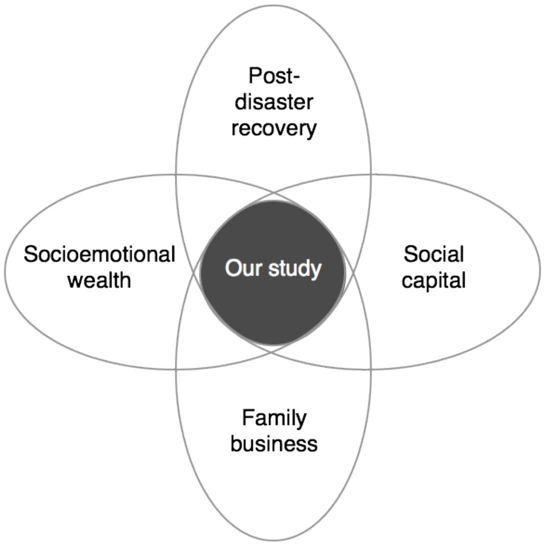

Figure 6. Scope of the thesis

A.1 Small Family Business

It is important to note that there are two concepts forming small family business, which are *small business* and *family business*. Small business is defined as any business that is independently owned and operated, not dominant in its field, and does not engage in any new marketing or innovative practices (Carland, Hoy, Boulton, & Carland, 1984). The U.S. Small Business Administration (SBA) incorporates Carland et al.'s (1984) definition by defining small business as "one that is independently owned and operated, is organized for profit, and is not dominant in its field" (SBA, n.d.). Note that SBA adds the definition with 'organized for profit' while excluding 'being involved in innovative practices' as described in Carland et al. (1984).

Storey (1994) on the other hand, argues that the debates about definition turn out to be sterile unless 'size' is shown to be a factor which influences the performance. In practice, measurability is important and the notion of small business is generally operationalized by applying certain threshold of revenue, amount of assets, and number of employees. Furthermore, these thresholds also vary between industries and countries. For example, European Commission (EC) defines small business when the business has less than 50 employees and up to 10 million EUR annual turnover (European Commission, n.d.). In Indonesia, as in our case, a business is categorized as small if it owns assets with approximate value of up to 39,000 EUR and turnover of up to 238,500 EUR annually (Ministry of Cooperative and Small and Medium-Sized Enterprises of the Republic of Indonesia, n.d.).

On the other side of the coin, there is a concept of family business. We follow the definition by Litz (1995, p. 75) who proposed that “a business may be considered as a family business to the extent that its ownership and management are concentrated within a family unit.” As comparison, Chua, Chrisman, and Sharma (1999, p. 25) define family business as “a business governed and/or managed with the intention to shape and pursue the vision of the business held by a dominant coalition controlled by members of the same family or a small number of families in a manner that is potentially sustainable across generations of the family or families.” Many more definitions are available depending on the scholars’ point of views towards family business and recent literature review by Chrisman, Chua, and Sharma (2005, p. 556) tries to capture the essence of family business definition, which are “(1) a family’s influence on a firm’s strategic direction; (2) a family’s intention to keep control; (3) family firm behavior; and (4) unique, inseparable, synergistic resources and capabilities arising from family involvement and interactions.” For the purpose of our study on small family business, we found that the definition by Litz (1995) is much simpler and relevant to our research purpose.

A closer look on small businesses has found that between 70-80% of small businesses are family-owned firms (Matlay, 2002). As defined by Carland et al. (1984) above, small business is independently owned and operated. In a similar sense, family business also has these characteristics. Combining the two, we can deduce that small businesses are characterized by (1) the involvement of the family in the business and, thus, (2) have a relatively independent ownership and operations. Simply put, in most cases small business can be equated (although not always) with family business. Caution must be made, however, while small business can be understood as family business, it is misleading to infer the opposite. Family business contains much more than just small business.

For the purpose of the study, we define small family business as "a business that is operated by the family, is operated for profit, and not dominant in its field" and we follow the threshold according to Indonesian context, i.e. annual turnover of approximately up to 238,500 EUR.

Table A1. Reviewed literature on small and family business

Author	Focus	Type	Main Finding(s)
(Carland et al., 1984)	Differentiating entrepreneurs from small business owners	Conceptual/ Literature review	The critical factor that distinguishes entrepreneurs and small business owners is innovation; definitions of small business venture/owner and entrepreneurial venture/ entrepreneur are proposed
(Chrisman et al., 2005)	Trends and directions in the development of a strategic management theory of the family firm	Conceptual/ Literature review	Two theoretical perspectives are converging between the *components-of-involvement* approach and the *essence* approach; accumulated evidence is persuasive with respect to founding family involvement in large firms but further research is needed do determine if this is true in small firms and in firms where family involvement is not confined to a founding family; based on agency theory and resource-based view, family firms appear most likely to have agency costs and distinctive resources

(Table A1 continues)

(Table A1 continued)

Author	Focus	Type	Main Finding(s)
(Chua et al., 1999)	Defining the family business by behavior	Conceptual and empirical	Family involvement in the business makes family business field unique; defining a family business by its components does not capture its essence, which encompasses the vision held for the firm by a family or a small group of families and the intention of the dominant condition to shape and pursue this vision across generations; components of family involvement are weak predictors of family firms' concerns over succession and professionalization
(Kalleberg & Leicht, 1991)	Gender and organizational performance as determinants of small business survival and success	Empirical/ Quantitative	Business headed by women were not more likely to go out of business, nor less successful, than those owned by men
(Lee & Rogoff, 1996)	Comparison of small businesses with family participation versus small businesses without family participation	Empirical/ Quantitative	There is no overall difference in business-related goals between the two groups, but that owners of business with family participation do experience significantly more business-family conflict; owners of businesses with family participation see the involvement of family members as a positive
(Litz, 1995)	Family business definition	Conceptual/ Literature review	Three propositions regarding family business definition are developed; parsimonious perspective of understanding a family firm is given by combining structural dimensions of ownership and management with the attitudinal dimension of intent

(Table A1 continues)

(Table A1 continued)

Author	Focus	Type	Main Finding(s)
(Matlay, 2002)	Training and human resource development in family and non-family owned small business	Empirical/ Quantitative	70% - 80% of micro and small businesses are family business; there are considerable difference in owner/manager attitudes and approaches towards the training needs of family members employed in a business as compared to non-family employees

A.2 Post-Disaster Recovery

Starting with the definition, post-disaster recovery is an ambiguous term if not accompanied with a specific explanation. Quarantelli (1999) dissects the definition into four different siblings of (1) reconstruction, (2) restoration, (3) rehabilitation, and (4) recovery where the use of word determines the sense of focus. For example, the term 'reconstruction' put more emphasis on the physical structures damaged in a disaster where 'rehabilitation' emphasizes more of people than things, and 'recovery' simply refers to bringing the post disaster situation to some level of acceptability (Quarantelli, 1999). Other scholar defines recovery depending on the time frame from the disaster. Leitmann (2007) provides lessons learned from the disasters in Indonesia for (1) relief phase, defined as a short-term period right after the disaster struck, and (2) rehabilitation and reconstruction, defined as a long-term period after the condition gain more stability. Nakagawa and Shaw (2004) voice a similar notion where they distinguish the recovery phase into rescue, relief, and rehabilitation.

Acknowledging the views from these scholars made it clear that post-disaster recovery can be divided into two general parts: immediate response and long-term recovery. For this study that has been seven years since the 2006 earthquake, to focus on the long-term recovery goes more logically. We decided to adopt the definition of post-disaster recovery from Quarantelli (1999) where 'recovery' refers to regaining the post disaster situation to an acceptable level. Taking this definition as a starting point gives us space to further operationalize post-disaster recovery to suit the purpose of our study about small family business. In this regard, we define post-disaster recovery as "the financial performance of the business after the disaster as measured by the discrepancy between the average monthly turnover in pre-disaster and the current time when the research was performed."

Galbraith and Stiles (2006) surmise that literatures on post-disaster recovery are largely focused in the areas of relief aid management, short- and long-term economic development, hazard and natural disaster risk management, and socioeconomic conditions after a disaster. There is scarcity, as the authors argue, when it comes to portray post-disaster recovery through the lens of small business. Because post-disaster recovery is a central context in this study of small family business, it is deemed necessary to be aware of what themes emerge from previous studies on this phenomenon in general. Table A2 summarizes the scope of research related to the post-disaster recovery.

Table A2. Reviewed literature on post-disaster recovery

Author(s)	**Focus**	**Type**	**Main Finding(s)**
(Bolin, 1976)	Family recovery from natural disaster (the 1972 flash flood in South Dakota, United States)	Empirical/ Quantitative	10 propositions regarding the causal model affecting long-term family recovery
(Day et al., 2012)	Humanitarian and disaster relief supply chains	Literature review and focus group discussions	Critical areas of further research are (1) demand signal visibility, (2) information management and relief activity coordination, (3) disaster relief planning, and (4) managing relationships and developing trust along the supply chain
(Flynn, 2007)	Disaster planning on small business (the 1997 major flood in North Dakota, United States)	Empirical/ Quantitative	There is a statistically significant increase of disaster recovery planning in businesses started since the 1997 flood compared to those that started before the flood and still in business

(Table A2 continues)

(Table A2 continued)

Author(s)	Focus	Type	Main Finding(s)
(Galbraith & Stiles, 2006)	Disasters and entrepreneurship on small business	Literature review	Scholarly literature that investigate the impact of disasters on small business and the role of entrepreneurship in post-disaster recovery is scarce at best and sporadically focused in: (1) relief aid management, (2) short- and long-term economic development, (3) hazard and natural disaster risk management, and (4) relationship between disasters and socio-economic condition
(Leitmann, 2007)	Lessons learned from post-disaster response in Indonesia (the 2004 tsunami in Aceh and Nias, the 2006 earthquake in Yogyakarta and Central Java)	Empirical/ Archival	Lessons learned are provided for (1) relief phase, (2) rehabilitation and reconstruction, (3) do's and don'ts, and (4) city-specific observations.
(Mayunga, 2007)	Community disaster resilience	Conceptual/ Methodological	Proposition of an overarching capital-based approach to measure Community Disaster Resilience Index (CDRi) by taking into account all forms of capital ranging from social capital, economic capital, human capital, physical capital, and natural capital.
(Paton, 1997)	Integration of recovery resources and the recovery environment for disaster workers	Conceptual/ Methodological	The role of co-workers, managers, and the family within post-disaster context are intertwined and isolated intervention is likely o be less effective for recovery

(Table A2 continues)

(Table A2 continued)

Author(s)	Focus	Type	Main Finding(s)
(Quarantelli, 1999)	Disaster recovery process	Literature review	Propositions of (1) a definition of recovery, (2) measurements of recovery, (3) general themes and challenges about support receivers and support givers, and (4) limited research on the impact of cultural values and the role of political considerations to the recovery process.
(Runyan, 2006)	Barriers to recovery for small business (the 2005 Hurricane Katrina in Gulf Coast, United States)	Empirical/ Qualitative	Five barriers are identified: (1) lack of planning by small business, (2) vulnerability to cash flow interruption, (3) lack of access to capital for recovery, (4) problem caused by federal assistance, and (5) serious infrastructure problems impeding recovery
(Schrank et al., 2013)	Small-business demise and recovery after Katrina	Empirical/ Quantitative and qualitative	Methodology for tracking demised small businesses are presented; based on the preliminary data, the percentage of demised business is less than 19% for all reasons; Katrina may have had an immediate impact on small-firm deaths as well as a damping effect on new-firm births
(Zhang et al., 2009)	Community business vulnerability	Literature review	Key factors and operationalizations are developed for four vulnerability dimensions, which comprised of capital vulnerability, labor vulnerability, supplier vulnerability, and customer vulnerability

A.3 Social Capital

The theory of social capital has, obviously, a strong root in sociology. Becoming more prominent as early as 1973 by Granovetter, in this section we tried to trace back early definitions from the field of sociology and follow the progression along the way when it was combined with the field of business administration as exemplified by Nahapiet and Ghoshal (1998).

Social capital is a variety of different entities that consists two elements in common: they all possess of some aspects of social structures, and they facilitate certain actions of actors within the structure (Coleman, 1988). Coleman (1988) further specifies that social capital lies in the structure of relations between actors and among actors, and it is manifested in the forms of (1) obligations an expectations, (2) information channel, and (3) social norms. Lin (1999, p. 35) refines the definition of social capital as "resources embedded in a social structure which are accessed and/or mobilized in purposive actions." Specific on the relations among and between actors, Granovetter (1973) differentiates the type of relations as strong ties and weak ties. Strong ties—also called as bonding social capital—are associated with familial bonds whereas weak ties—also called as bridging social capital—are normally associated with non-family relations such as friends and other parties (Davidsson & Honig, 2003). Between strong ties and weak ties, Granovetter (1973) highlights the paradox that weak ties are essential for individuals' opportunities and their integration into the communities, which confirmed by Lin et al. (1981), while strong ties will lead to overall fragmentation.

In summary, social capital is a versatile resource that it can lead to the creation of economic capital and human capital (Bourdieu, 1986; Coleman, 1988). The levels in which social capital inheres can also range from individual to collective social capital, be it in the organization (Nahapiet & Ghoshal, 1998) or community in general (Onyx & Bullen, 2000). By acknowledging the intangibility of relationship and network, the challenge remains on how to accurately measure social capital (Ferri, Deakins, & Whittam, 2009). Nevertheless, this challenge does not restrain social capital to be transposed into different fields of research such as in post-disaster recovery and family business, as we will discuss further in the upcoming sections. Table A3 on the next page provides a brief overview of the definition and empirical studies on social capital.

Table A3. Reviewed literature on social capital

Author(s)	Focus	Type	Main Finding(s)
(Adler & Kwon, 2002)	Synthesizing theoretical research on social capital from various disciplines	Conceptual	Conceptual framework is developed that covers the source, benefits, risks, and contingencies of social capital
(Bourdieu, 1986)	Definition of social capital	Conceptual	Social capital is the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition, which provides each of its members with the backing of the collectivity-owned capital, a 'credential' which entitles them to credit, in the various senses of the word
(Coleman, 1988)	Social capital in the creation of human capital	Conceptual and empirical	Social capital is as equally important as other type of capitals given its characteristics that facilitate productive activity; social capital is manifested in the forms of (1) obligations and expectations, (2) information channel, and (3) social norms; social capital in the family and community contribute to the creation of human capital

(Table A3 continues)

(Table A3 continued)

Author(s)	Focus	Type	Main Finding(s)
(Davidsson & Honig, 2003)	Social capital and human capital among nascent entrepreneurs	Empirical/ Quantitative	Bridging and bonding social capital, consisting of both strong ties and weak ties, was a robust predictor for nascent entrepreneurs; only one aspect of social capital (being a member of a business network) had a statistically significant positive effect; human capital as a predictor of entry into nascent entrepreneurship is supported, but only weakly for carrying the start-up process towards successful completion
(Ferri et al., 2009)	Measurement of social capital in the entrepreneurial context	Literature review	Emergence of several common themes that associate the issues of measurement with lack of empirical consensus on an accepted definition of social capital
(Granovetter, 1973)	Strength of weak ties	Conceptual	Weak ties are indispensable to individuals' opportunities and their integration into communities whereas strong ties are seen to lead to overall fragmentation
(Lin, 1999)	Network theory of social capital	Conceptual/ Literature review	Social capital is defined as resources embedded in a social structure which are accessed and/or mobilized in purposive actions; measurements and indicators of social capital are developed along with the sampling techniques; proposition of cybernetworks as an emerging phenomenon

(Table A3 continues)

(Table A3 continued)

Author(s)	Focus	Type	Main Finding(s)
(Lin et al., 1981)	Social resources and occupational status attainment	Empirical/ Quantitative	An individual possesses a substantial advantage in the occupational attainment process if he has access to and uses greater social resources; access to the resources is mainly influenced by the individual's initial status; level of occupational achievement attained is substantially and directly determined by his education and the social resources used
(Nahapiet & Ghoshal, 1998)	Social capital, intellectual capital, and the organizational advantage	Conceptual	Social capital facilitates the creation of new intellectual capital; organizations are conducive to the development of high levels of social capital; the density of the social capital in the firms have an advantage over markets in creating and sharing intellectual capital
(Onyx & Bullen, 2000)	Measurement of social capital in five communities	Empirical/ Quantitative	Three factors are very strong and explain about 30% of the variance of social capital: (1) participation within local community organization, (2) agency or proactivity in a social context, and (3) feeling of trust and safety
(Portes, 1998)	The origins and applications of social capital	Conceptual/ Literature review	Social capital is defined as the ability to secure benefits through membership in networks and other social structures; there are four sources of social capital which resulted in positive and negative consequences

(Table A3 continues)

(Table A3 continued)

Author(s)	Focus	Type	Main Finding(s)
(Putnam, 1995)	Social decapitalization in America	Empirical/ Literature review	The most fundamental form of social capital is the family, and the massive evidence of the loosening of bonds within the family (both extended and nuclear) is well known; civic engagement and social connectedness in America had declined in the last two or three decades possibly caused by: (1) the movement of women into the labor force, (2) increased mobility of families, and (3) changing demographics
(Westlund & Bolton, 2003)	Local social capital and entrepreneurship		Social capital can be analyzed in the same way as other capital; social capital generates producer surplus; economic modeling approaches to the theoretical relationship between social capital and entrepreneurship is developed

A.4 Social Capital in Post-Disaster Recovery

In the previous sections we have discussed post-disaster recovery and social capital separately, and also understand their different definitions and dimensions. In this section on Table A4, we lay out the evidence where social capital is found to be the central point in post-disaster recovery.

The deeper we dwell into the field of post-disaster recovery, the more it reveals that social capital is the main driving force for post-disaster recovery (Aldrich, 2012; Nakagawa & Shaw, 2004). An explanation to this is because social capital focuses on the network and relationship between actors as compared to other types of capital where the possession is mainly focused on the individual. This nature has an implication: when the society as a whole are being threatened—moreover when it is not just any threat, but a threat of survival—it triggers collective actions to respond to the disruption and reproduces the social capital within the community (Johannisson & Olaison, 2007). Consequently, communities with strong social networks experience faster recovery and have access to the needed information, tools, and assistance (Aldrich, 2012).

While many of the research on social capital in post-disaster recovery have been investigated in the level of the communities (Kaniasty & Norris, 1995; Norris et al., 2008; Wachtendorf & Kendra, 2004), there are limited studies when it comes to the social capital of *small businesses* in post-disaster recovery. The closest study on this regard is performed by Johannisson and Olaison (2007) where they looked into the entrepreneurship that covers—among other parties—the small businesses as a way to cope with rupture in everyday life. Hence, given this limitation in the literature, our study can bring value by putting together social capital and post-disaster recovery with small businesses as the subject.

Table A4. Reviewed literature on social capital in post-disaster recovery

Author	Focus	Type	Main Finding(s)
(Aldrich, 2012)	Social capital for building resilience (multiple case studies on the 1923 Tokyo earthquake, 1995 Kobe earthquake, 2004 Indian Ocean tsunami, and the 2005 Hurricane Katrina)	Conceptual and empirical	High levels of social capital—more than such commonly referenced factors as socioeconomic conditions, population density, amount of damage or aid—serve as the core engine of recovery; survivors with strong social networks experience faster recoveries and have access to needed information, tools, and assistance
(Johannisson & Olaison, 2007)	Social capital and entrepreneurship (the 2005 Hurricane Gudrun, Sweden)	Empirical/ Qualitative	Catastrophes initiate processes that (re)produce both the entrepreneurship and social capital that remain invisible when "business as usual" rules in society

(Table A4 continues)

(Table A4 continued)

Author	Focus	Type	Main Finding(s)
(Kaniasty & Norris, 1995)	Patterns of social support mobilization (the 1989 Hurricane Hugo in North and South Carolina, USA)	Empirical/ Quantitative	Disaster exposure (loss and harm) was a strong predictor of help received and a modest predictor of help provided; post-disaster help was not distributed equally and disaster exposure was more strongly related to social support in some groups than in others; race, education, and age moderated the impact of disaster exposure on receipt of post-disaster support
(Nakagawa & Shaw, 2004)	Social capital (the 1995 earthquake in Kobe, Japan and 2001 earthquake in Gujarat, India)	Empirical/ Qualitative	Communities played the most important roles among other concerned stakeholders in every stage of the disaster cycle (rescue, relief, and rehabilitation); communities with social capital are found to be efficient in rescue and relief; strong leadership inside the community is essential for any collective action in rehabilitation
(Norris et al., 2008)	Community resilience for disaster preparedness	Conceptual/ Methodological	Community resilience is a process linking a network of adaptive capacities to adaptation after a disturbance or adversity; community resilience emerges from four primary sets of adaptive capacities: (1) economic development, (2)social capital, (3) information and communication, and (4) community competence
(Wachtendorf & Kendra, 2004)	Convergence, coordination, and social capital in disasters (after the 2001 World Trade Center disaster)	Empirical/ Qualitative	It is valuable to incorporate community-based groups in disaster related issues and decision making, as well as recognizing the social capital, resources, and expertise these groups bring to the table

A.5 Social Capital in Family Business

The recent development on family business research is also revolving around the concept of social capital as the crucial part in determining firm's performance. Carr, Cole, Ring, and Blettner (2011) argue that internal social capital represented by the family members can create unique and valuable firm capabilities. In this line, family social capital is a driver of organizational social capital (Arregle et al., 2007). de Massis, Kotlar, and Frattini (2013) further elaborate that internal and external social capital bring not only competitive advantage, but also competitive disadvantage to the family firm. It corresponds to the paradox proposed by Granovetter (1973) where social capital—the weak ties and the strong ties—may lead to integration and fragmentation at the same time.

If internal social capital is understood as a concept that is internally developed within family firms and is largely dependent upon the family members themselves (Carr et al., 2011), then the notion of family capital—as a unique feature of family business—is derived primarily from the ties that are present within the family relationships (Pearson, Carr, & Shaw, 2008). In other words, family capital is a special form of social capital (Hoffman, Hoelscher, & Sorenson, 2006). Studies have found that family capital contributes positively significant to firm achievements and sustainability (Danes, Stafford, Haynes, & Amarapurkar, 2009; Sorenson, Goodpaster, Hedberg, & Yu, 2009).

As social capital gain tractions in family business research, it shows the omnipresence and, again, the versatility of social capital theory in defining various phenomenon. Family business scholars have long tried to show the distinct behavior of family firms through the very notion of family business: family. Regarding to this, several concepts such as family social capital, family capital, and familiness seem to be a tautology. They are all rooted in social capital theory in which the focus is on the network and its utilization to achieve certain ends, only that it is limited to the relationships within the family.

Table A5 presents the emerging discussions on social capital in family business.

Table A5. Reviewed literature on social capital in family business

Author	Focus	Type	Main Finding(s)
(Arregle et al., 2007)	Development of organizational social capital	Conceptual/ Literature review	Family social capital is a driver of organizational social capital (OSC) and the consequences for OSC depend on the strength of the family's social capital
(Carr et al., 2011)	Measurement to assess the internal social capital	Conceptual and empirical	Internal social capital represents a concept that is internally developed within family firms, and is largely dependent upon the family members themselves, and the quality and quantity of the relationships can be leveraged to create unique and valuable firm capabilities; internal social capital in family business is a useful tool to capture how the business resources affect organizational capabilities and outcomes both from an economic and noneconomic viewpoint
(Danes et al., 2009)	Family capital as a bridge of human, social, and financial capital	Empirical/ Quantitative	Family capital significantly contributes to firm achievements and sustainability; in the short term, all family capital types explains 13.5% of gross revenue variance and 4% of owner's success perception variance; in the long term, all family capital types explains 26.7% of gross revenue variance and 11.6% of owner's success perception variance

(Table A5 continues)

(Table A5 continued)

Author	Focus	Type	Main Finding(s)
(de Massis et al., 2013)	Social capital resources of family firms	Empirical/ Qualitative	Internal and external social capital bring competitive advantages and disadvantages to family firm as perceived by the CEO; these perceptions are moderated by the social influences between family and business comprised of family's emotional attachment and detachment to the business
(Dyer, 2006)	"Family effect" on firm performance	Conceptual	Propositions are developed in regards to family effect towards (1) governance and the performance of family firms, (2) family assets, which consists of human, social, and physical and financial capital, and (3) firm type and performance
(Hoffman et al., 2006)	Family capital theory	Conceptual/ Literature review	A theory of family capital is developed based on the concept of social capital
(Pearson et al., 2008)	Theory of familiness from a social capital perspective	Conceptual/ Methodological	Full model of familiness is developed, including the dimensions and antecedents of social capital; the social capital dimensions and antecedents are embedded into the basic RBV model of familiness to denote the unique behavioral and social resources of the family firm, which leads to value creation as a key organizational performance dimension for family firms

(Table A5 continues)

(Table A5 continued)

Author	Focus	Type	Main Finding(s)
(Sirmon & Hitt, 2003)	Resource management process of human capital, social capital, patient capital, survivability capital, and governance and structure attribute	Conceptual	Three stages are involved in managing resources for wealth creation: (1) resource evaluation, (2) resource shedding, and (3) adding resource; the survival or success of a firm must be augmented with resource bundling and leveraging through the human capital; seven propositions are developed regarding to the resources pertinent to family firms for creating competitive advantage and wealth creation
(Sorenson et al., 2009)	The family point of view, family social capital, and firm performance	Conceptual and empirical	An exploratory test of 405 small family firms found support for all three hypotheses: (1) the family point of view emerges from collaborative dialogue, which helps develop agreement to ethical norms, (2) the presence of ethical norms further helps cultivate family social capital, and (3) as a resource in a family business, family social capital is positively related to family firm performance

A.6 Socioemotional Wealth

In the pursuit of the elusive factor that differentiate family firms' behavior, Gómez-Mejía et al. (2007) found that SEW drives family firms behavior *vis-à-vis* risk exposure to their performance. Family firms are willing to be exposed to a significant risk to their performance in favor of preserving their SEW (Gómez-Mejía et al., 2007), referring to the noneconomic aspects or affective endowments of family owners (Berrone et al., 2012). On another study, Berrone et al. (2010, p. 87) argue that "the value of SEW to the family is more intrinsic, its preservation becomes an end in itself, and it is anchored at a deep psychological level among family owners whose identity is inextricably tied to the organization." A theoretical review by

Berrone et al. (2012) gives pretty much a complete explanation on its origin, definition, and—most importantly—the dimensions which abbreviated as FIBER (family control and influence, identification of family members with the firm, binding social ties, emotional attachment of family members, and renewal of family bonds to the firm through dynastic succession). SEW is also being argued as the single most important differentiator of the family firm as a unique entity (Berrone et al., 2012).

To proof if SEW is truly the defining factor of family firms' behavior, several studies have been conducted to examine SEW in different contexts such as social corporate responsibility (Berrone et al., 2010), family employment in micro and small enterprises (Cruz et al., 2012), and proactive stakeholder engagement (Kellermans et al., 2012). Through all these studies, it can be deduced that SEW is based on three assumptions. Firstly, that the possession of SEW is a trade-off between affective endowments and economic gains. Secondly, family firms will favor SEW rather than uncertain economic benefits. Thirdly, extreme events may force family firms to forgo SEW goals to achieve business survival.

By acknowledging the three assumptions above, we seek to expand the concept to examine if these notions still hold true in another context. Literature have discovered the usefulness of SEW in various contexts, but little do we know when it comes to family firms' behavior in an extreme event such as post-disaster. That is the gap that we are trying to address. Table A6 below summarizes the findings of the recent research on SEW.

Table A6. Reviewed literature on socioemotional wealth

Author	Focus	Type	Main Finding(s)
(Berrone et al., 2012)	Theoretical discussions, assessment approaches, and agenda for future research	Conceptual/ Methodological	SEW is the most important differentiator of the family firm as a unique entity and helps explain why family firms behave distinctively; five dimensions of SEW measurements are developed

(Table A6 continues)

(Table A6 continued)

Author	Focus	Type	Main Finding(s)
(Berrone et al., 2010)	SEW and corporate social responsibility	Empirical/ Quantitative	Family-controlled public firms protect their SEW by having a better environmental performance than their nonfamily counterparts and that for the nonfamily firms, stock ownership by the CEO has a negative environmental impact; the positive effect of family ownership on environmental performance persists independently of whether the CEO is a family member or serves both as CEO and board chair
(Cruz et al., 2012)	SEW, family embeddedness, and micro and small enterprises performance	Empirical/ Quantitative	Partial support to the enhancing role of family labor on MSEs performance: employing family members increases sales but decreases profitability as measured by ROA; improved performance for women-led firms and for firms that have received family funding, but impairs MSEs performance when the business is the main source of the owner's household income
(Gómez-Mejía et al., 2011)	SEW preservation in family firms	Conceptual/ Literature review	SEW or affective endowment of family owners explain the distinctive behavior of family firms compared to nonfamily firms in five categories of managerial decisions: (1) management process, (2) firm strategies, (3) corporate governance, (4) stakeholder relations, and (5) business venturing

(Table A6 continues)

(Table A6 continued)

Author	Focus	Type	Main Finding(s)
(Gómez-Mejía et al., 2007)	SEW and business risks	Empirical/ Quantitative	Using a population of 1,237 family-owned olive oil mills in Southern Spain, the hypotheses are confirmed that family firms are willing to accept a significant risk to their performance in favor of preserving their socioemotional wealth
(Kellermans et al., 2012)	SEW and proactive stakeholder engagement	Literature review	Two propositions are developed by arguing that SEW can be negatively associated with proactive stakeholder engagement

To connect to what have been discussed throughout this literature review, let us reiterate how all the theories and concepts are tied together through this study: post-disaster situation as an extreme event is the setting where we set the stage of this research; small family businesses are the actors in which we regard as the protagonists; the interplay between social capital and socioemotional wealth is the main plot that sets the story; and finally, business recovery is the goal that we want to see in the end.

Appendix B: Methodology

Researchers have to have a good comprehension of the ontology and epistemology that underlie their research paradigm (Guba & Lincoln, 1990). The ontological stance is concerned with the the philosophy of the research. While the epistemological stance is based on how you acquire the knowledge of your research (Yin, 2008) and this is concerned with the research design and data collection aspects.

Therefore in this chapter, the chosen ontology based on the ontological stand (of philosophical stand) will be discussed in section B.1, then B.2 will discuss research design and method, followed by B.3 where the research approach and strategy will discussed, next will be the discussion of the data collection at section B.4 and this will be followed by section B.5, where research validity and reliability will discussed and lastly the research analysis will discussed in section B.6.

B.1 Research Philosophical Stand

Research philosophy (or ontological paradigm), is considered to be one of the oldest academic disciplines (Yin, 2008). The philosophy is focused on how as human beings we make assumptions regarding the nature of the world around us (Yin, 2008).

According to Saunders, Lewis, and Thornhill (2007), ontological stance is based on two paradigms, objectivism and subjectivism, and both these paradigms have their devotees among the business management researchers. The subjectivism is concerned with the subjective aspects of management, rather than its objectives. For example in looking at a management study of attaining specific goal, the social actors and their interaction towards these management goal would be of interest, rather than how the resources help (such as computers and other hardwares) the management achieve the goal, thus the social actors being studied and their interaction are the main interests for the researcher. This type of paradigm is based on interpretivism philosophy of a qualitative nature with the notion that a reality has many truths an thus it is important to study in deeper details as to get to the meaning behind these truths (Guba & Lincoln, 1990; Saunders et al., 2007; Yin, 2008).

Meanwhile, the objectivism paradigm is associated to the qualitative research methods based on positivism philosophical view of the studied reality (Sale, Lohfeld, & Brazil, 2002). Here the reality is viewed from a scientific perspective of empirical indicators that represent the truth. That is, the ontological stance of the quantitative method is represented by only one truth, and this truth is an objective reality that exists independent of the human perception (Guba & Lincoln, 1990). In another words, the investigator and the investigated are independent entities, which lead to the fact of the investigator being able to study the phenomenon, without being influence or influenced by it (Saunders et al., 2007). This could be stated as an inquiry that is carried out through a one way mirror (Guba & Lincoln, 1990).

The aim of this study is to examine the relationship between SEW and social capital, manifested in community support and institution support, toward the recovery of family businesses in the context of a post-disaster recovery in Indonesia. It is important to note that this research is based on an objective point view, rather than from a subjective point view. This is because the investigated phenomenon of interest is very difficult—if not impossible—to be researched subjectively (the investigated case is in Indonesia and the investigators are students in Sweden) and also because we have a clear idea of the investigated research topic and thus we can realistically create surveys that can be used to collect the required data from a distance. Hence in this study, the ontological stance used is that of an objective research with a quantitative paradigm based on positivism philosophical research. Having established the philosophical stance, next to discuss is the research design and method.

B.2 Research Design and Method

According to Thomas (2004), in general there are two kinds of research approaches, quantitative and qualitative (or a combination of the two). A qualitative approach has the emphasis on data techniques such as interviews and its data analysis procedure is based on non-numerical data collections (Saunders et al., 2007). The qualitative research is used to gain an in-depth study into the topics of the cases and/or participants being studied (Fisher, 2007). That is, this type of data technique, often involves interviews and observations with a purpose to create a deeper understanding of investigated phenomenon (Yin, 2008). This could not be applied to our research, mainly because the distance between the phenomenon to be studied and we the investigators was not easy to overcome, which is key in this type of research.

In contrast, according to Quinn and Keough (2002), researchers who choose the quantitative approach have a clear idea of what they are researching, hence they can use tools such as questionnaires or surveys to collect data. As such, the focus of this type of research is based on the precision in terms of analyzing the data through, for example, statistical analysis tools (Yin, 2008). This relates to our research where we have a clear idea of what needs to be researched and it is also practically possible for us to overcome the issue with the distance of our investigated phenomenon by using data collection techniques such as survey questionnaires. Hence for our research design, the chosen method is that of a quantitative research, rather than a qualitative method.

Another important aspect of the design of our research is that of a cross-sectional versus longitudinal design. Longitudinal research design is often associated with an investigation that can be carried within a long period of time (in years), while a cross-sectional is that of a short period of time, and is also known as a snapshot of the investigated phenomenon of interest (Yin, 2008). For our research the cross-sectional was suitable and was used. The time limit of only 6 months made it very difficult—if not impossible—for our research to be based on a longitudinal research design.

B.3 Research Approach and Strategy

The chosen approach of a quantitative research is usually associated with a deductive approach, with the focus on using the collected data to test a theory (Saunders et al., 2007). For this reason, the research approach used in our research is that of a deductive approach (see Chapter 3: Methods), where secondary data was collected and statistical tools were used to test the collected data.

A research strategy is based on a plan of action on how to achieve the intended research goal (Saunders et al., 2007). In other words, a research strategy is focused on defining a plan of how to go about in answering the research question (Yin, 2008). Therefore, depending on the type of the research design, it being a qualitative or a quantitative research, there are specific research designs that a research can embark in answering their research questions (Guba & Lincoln, 1990; Saunders et al., 2007; Yin, 2008).

A specific research method that is usually associated with a quantitative research is that of survey strategy where questionnaires are used as means of allowing a collection of standardized data from a sizable population to be collected (Saunders et al., 2007). The benefit with this type of strategy is that it is highly an economical way of collecting data and it is comparatively easy to explain and to understand. Also, the survey strategy allows the possibility to analyze the quantitative data using statistical tools to explain possible relations between variables and to produce models of these relationships.

For our research one of the main barriers for achieving our goal was the distance between we the investigators and the investigated, thus the survey strategy based on questionnaires was the economical solution to overcome this barrier. Another reason for suitability of choosing survey strategy for our research was that it allowed us to conveniently collect hte necessary data that were later analyzed using statistical tools to test and explain our findings.

B.4 Data Collection

In this research, the main data collection was based on a survey questionnaire. According to Saunders et al. (2007), survey-based secondary data is used to refer to data collected using a survey strategy based on a questionnaire. They further argue that this type of data collection has three distinctive subtypes: census surveys, continues/regular surveys, and ad-hoc surveys. For the purpose of this research, the ad-hoc survey is of importance and thus it will be discussed further.

The ad-hoc surveys is often related to one-off surveys and are very specific in their subject matter, and also these type of questionnaires are undertaken by independent researchers (Saunders et al., 2007). Due to the distance constraint, we employed five bachelor graduates from Universitas Gadjah Mada, Indonesia as our enumerators in Yogyakarta to execute the data collection. But we also knew that we had to make the questionnaires (as independent researchers) that had to be very specific as to allow the necessary data to be collected only once. That is, we had only a one-way-off chance of collecting the needed data. Hence, the most suitable data collection for our research was the ad-hoc survey and therefore this was used for our research.

But this was not enough for our data collection as we also needed to have further knowledge on our specific researched topic. This is necessary to build our literature review that would lead to the formations of our research hypotheses which were to be investigated using the collected data from the survey. According to Yin (2008), researchers need to have a good understanding of their investigated topic and also as to have a back up evidence from other sources. Yin (2008) further argues that, this can be achieved through collecting documents as letters, memoranda, agendas, administrative documents, newspaper articles, or any document that is related to the investigation. For this research, related articles were collected from Google Scholar, Scopus, ABI/Inform, JSTOR, Science Direct and many others from our university's database. These secondary data were collected from external sources consisting of academic journals; these formed the main part of the literature review that led to the formation of our hypotheses that were later tested.

B.5 Data Validity and Reliability

According to Saunders et al. (2007), reliability refers to consistency of the data and in the questionnaires. Due to their nature for it to be valid, it also has to be reliable. This means for a a questionnaire its enough to check for reliability as to determine its validity. This being the case, there three common approaches of assessing the reliability of collected data are test re-test, internal consistency, and alternative form (Mitchell, 1996).

In this research, the test for reliability of the collected questionnaires to determine the internal consistency was performed. This involves correlating the responses to the questions from the questionnaire with each other. This leads to the measurement of the consistency of either the subgroups of the questions or all the questions in the questionnaire (Mitchell, 1996). The internal consistency for measuring the reliability is usually associated to the "*Cronbach's Alpha*", where the higher the value (more than 0.7), the more reliable the collected data for the specific measured subgroup or the whole questions of the questionnaire. In our research, three specific subgroups related to their relevant questions collected from the questionnaire (see Chapter 3.1 in our research) were measured for consistency and they all produced high values of over 0.7, thus leading to our collected data being consistent, hence the collected data being both valid and reliable.

B.6 Data Analysis

The fully collected data were analyzed using the hierarchical multiple regression analysis. The main reason for using a hierarchical multiple regression analysis is because it allows the examinations of the contribution of specific variables, most importantly on the interaction factors, after controlling for general variables (Cortina, 1993). We used IBM SPSS Statistics Version 21 to perform the statistical analysis.

There are several steps as we carried out the data analysis. Firstly, we coded the responses from the questionnaire into the corresponding variables (readers are advised to consult Appendix D to follow the explanation). In the section of 'General Information', we replaced the name of the owner by using the gender only to make the data useful. This section is primarily the control variables that we will analyze later. The questions of 'latest education' and ‘level of damage’ were reverse coded in an ordinal order starting with 0 (zero) to represent ‘not attending school’ and ‘no damage’, and the number ascends as the level of each variable increases. That is, for ‘latest education’, elementary, junior high, senior high, and bachelor and beyond are coded as 1, 2, 3, 4 respectively. Similar technique applies for ‘level of damage’ where light, medium, and severe are coded as 1, 2, and 3 respectively. Throughout the questionnaire, we coded all the dichotomous response into 0 (zero) as ‘no’ and 1 (one) as ‘yes’. Finally on the ‘Economic Capital’ section coded the responses into dichotomous scale to represent the existence or absence of specific source of funding.

After making sure that we have inputted all the data from the questionnaires, we rechecked our dataset for any incomplete responses. It resulted in 3 incomplete cases, which we dropped from our list to ensure that our dataset is clean. With 79 complete responses, we ran a descriptive and correlation analysis to get an overview of the characteristics of our data (shown in Table 1, Chapter 4). Table B1 below summarizes the variables used in our study.

Table B1. Variables of the research

Dependent Variable	**Control Variable**	**Independent Variable**	**Moderating Variable**
Family business recovery (turnover discrepancy of pre- and post-disaster)	Gender Level of education Level of damage Business as the main source of income	Community support Institution support Socioemotional Wealth (SEW)	SEW × Community support SEW × Institution support

To be able to proceed for a hierarchical multiple regression analysis, we developed the indices for each independent variable by calculating the mean of the sum and then standardized the value to make sure that they have similar unit—this is why the mean of these three variables are zero in Table 1. Then for the interaction factors, we obtained the value by multiplying the centered value of SEW with the centered value of community support and institution support. Consequently, four new variables were created to indicate these indices. Then we performed the hierarchical multiple regression in three steps. On the first step, we set *turnover discrepancy* as the dependent variable and inputted the control variables comprised of *gender*, *level of education*, *level of damage*, and *business as the main source of income*. On the next step, we put in three independent variables separately, which are *community support*, *institution* *support*, and *socioemotional wealth*. On the final step, the interaction factors of *SEW × community support* and *SEW × institution support* are inputted. In addition, we also asked SPSS to provide the histogram and plot of the regression standardized residual (the statistical results of this analysis are shown in Section 4: Results and further on Appendix C).

Appendix C: SPSS Output

In this section we provide the details on the full model of our hierarchical multiple regression analysis. As shown in the table below, there was independence of residuals, as assessed by a Durbin-Watson statistic of 2.089.

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.210[a]	0.044	-0.007	3,471,196.8	0.044	0.856	4	74	0.494	2.089
2	.459[b]	0.211	0.133	3,220,508.7	0.166	4.990	3	71	0.003	
3	.625[c]	0.391	0.312	2,869,052.4	0.181	10.230	2	69	0.000	

a. Predictors: (Constant), Damage level, Business as the main source , Latest education, Gender

b. Predictors: (Constant), Damage level, Business as the main source , Latest education, Gender, sew_std_index, inst_std_index, comm_std_index

c. Predictors: (Constant), Damage level, Business as the main source , Latest education, Gender, sew_std_index, inst_std_index, comm_std_index, sew_inst_std, sew_comm_std

d. Dependent Variable: Turnover discrepancy

In order to be able to run inferential statistics, we checked whether our data fulfills the assumption of normality of the residuals. Through the histogram below we can see that the standardized residuals appear to be approximately normally distributed with the mean and standard deviation values of approximately zero and one, respectively.

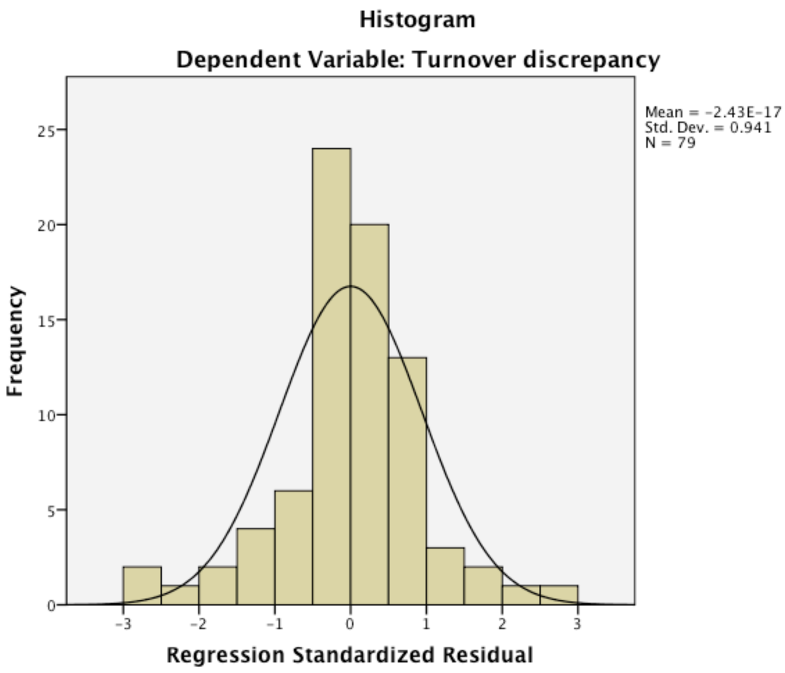

Figure C1. Histogram: Regression Standardized Residual

The P-Plot below confirms the histogram in regard to the normality assumption. Although the points are slightly curved away from the diagonal line, but they are close enough to normal for the analysis to proceed.

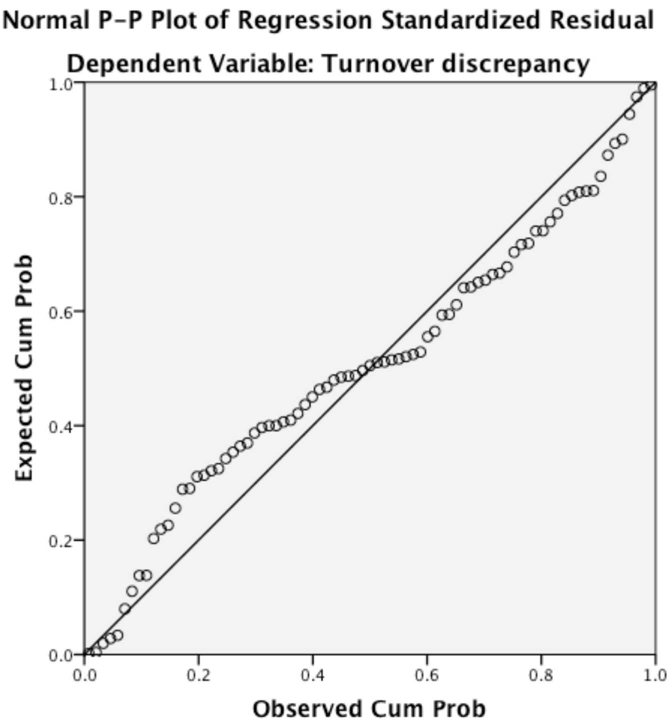

Figure C2. P-Plot: Regression Standardized Residual

While the interaction plot suggested by Dawson (2013) is based on the coefficient values of the final model, we performed a scatter plot to understand better how the interaction terms take place in our raw data. The procedure is as follows:

1. We sorted our raw data based on the SEW index in an ascending basis.
2. Then we divided our raw data of 79 cases into three equal parts that represent the level of SEW of low, moderate, and high. The first 26 cases we ascribed them as low, the second 27 as moderate, and the third 26 as high.
3. Then we ran a scatter plot by placing ‘turnover discrepancy’ on the *y*-axis and each independent variable on the *x*-axis.
4. We group the scatter plot by the level of SEW as described in step 2.
5. After the plots are obtained, we imposed a fit line too see how different levels of community support and institution support lead to different numbers of turnover discrepancy depending on the level of SEW.

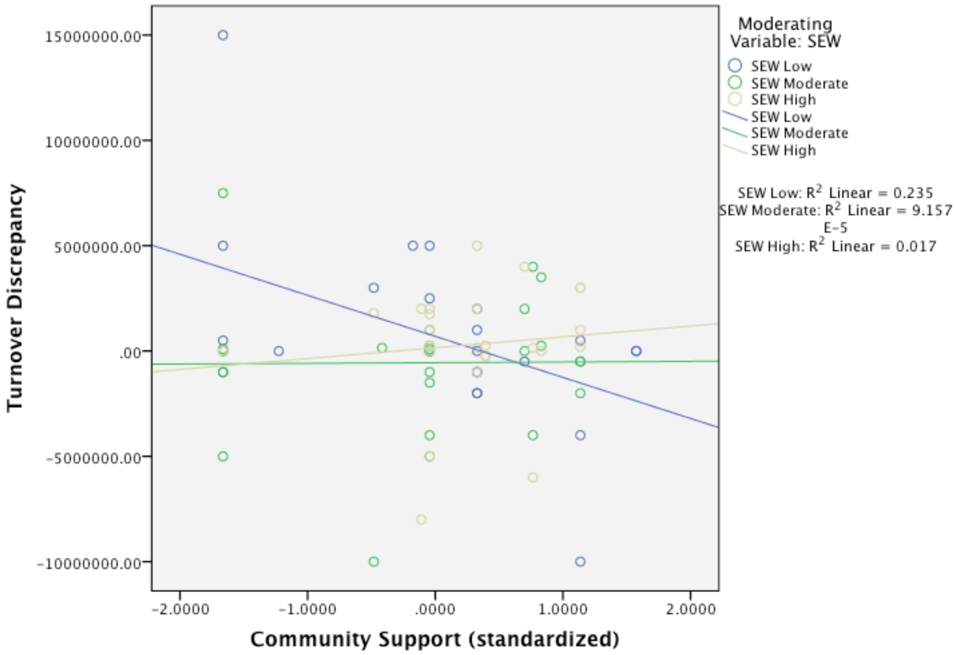

Figure B3. Scatter Plot: Community Support and Turnover Discrepancy

As we can see on Figure B3 above, the cases are grouped based on the level of SEW. The three lines show the trend that the interaction between community support and turnover discrepancy is being moderated by SEW. Cases with low SEW are shown to have a strong negative slope, virtually flat when the SEW is moderate, and becomes positive as the SEW level goes high. Important to note that we have one potential outlier in the top left corner, which has low community support, low level of SEW, but the highest turnover discrepancy among all. This might explain why the trend line of 'SEW low' is being pulled upward. However, our test of normality shows that we do not have any outlier with more than 3 standard deviations, hence we name it potential outlier.

Figure B4 shows that similar idea to the previous one, but with 'institution support' on the *x*-axis. The three lines show the trend that the interaction between institution support and turnover discrepancy is being moderated by SEW. Cases with low SEW are shown to have a strong negative slope, slightly lesser when SEW is moderate, and becomes positive when the SEW level goes high. Note that we also have potential outliers on each end of the *y*-axis.

Through these scatter plots, we infer that the strength of SEW is pivotal in order to leverage community and institution support for achieving high turnover discrepancy.

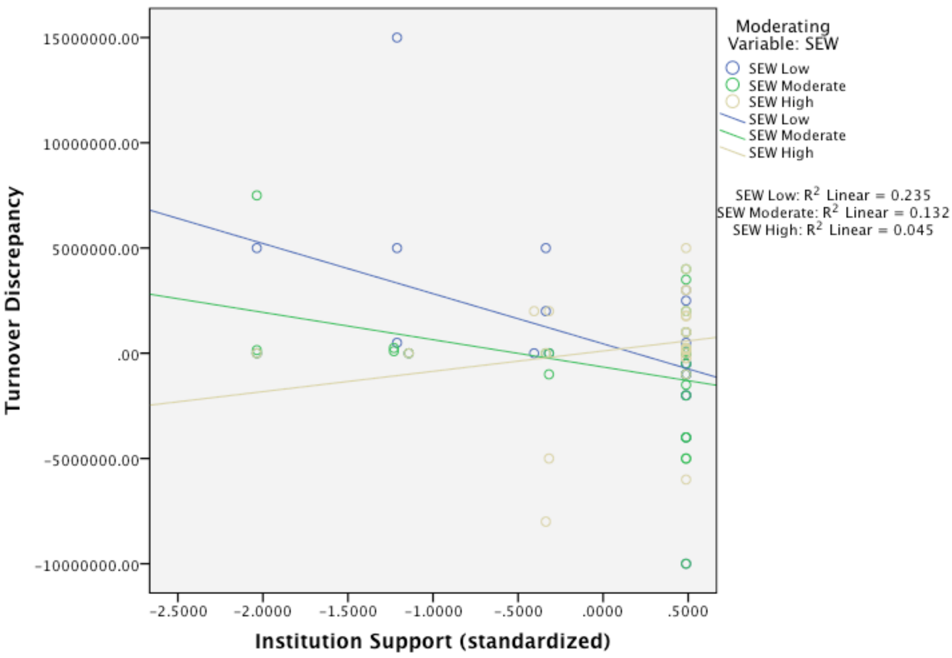

Figure B4. Scatter Plot: Institution Support and Turnover Discrepancy

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	2,866,384.00	2,922,460.57		0.981	0.330
	Gender	-1,156,997.33	1,045,153.01	-0.146	-1.107	0.272
	Business as the main source	938,440.90	1,820,984.44	0.060	0.515	0.608
	Latest education	-421,628.30	391,602.04	-0.126	-1.077	0.285
	Damage level	-524,910.36	427,300.02	-0.164	-1.228	0.223
2	(Constant)	3,492,991.60	2,844,344.24		1.228	0.223
	Gender	-1,545,539.71	989,407.51	-0.196	-1.562	0.123
	Business as the main source	2,586,466.40	1,755,837.82	0.165	1.473	0.145
	Latest education	-747,956.70	373,012.35	-0.223	-2.005	0.049
	Damage level	-839,192.43	453,091.54	-0.263	-1.852	0.068
	inst_std_index	-1,524,139.68	567,303.38	-0.354	-2.687	0.009
	comm_std_index	-303,528.79	523,331.24	-0.081	-0.580	0.564
	sew_std_index	-953,463.72	774,940.21	-0.138	-1.230	0.223
3	(Constant)	2,599,237.90	2,546,391.71		1.021	0.311
	Gender	-1,393,161.51	883,769.18	-0.176	-1.576	0.120
	Business as the main source	2,644,368.51	1,566,436.97	0.169	1.688	0.096
	Latest education	-586,798.04	334,211.46	-0.175	-1.756	0.084
	Damage level	-869,542.32	403,716.17	-0.272	-2.154	0.035
	inst_std_index	-1,435,326.11	563,021.34	-0.333	-2.549	0.013
	comm_std_index	-65,496.99	523,513.99	-0.018	-0.125	0.901
	sew_std_index	-504,982.25	710,033.91	-0.073	-0.711	0.479
	sew_comm_std	2,049,388.06	930,360.83	0.264	2.203	0.031
	sew_inst_std	2,972,012.20	1,223,409.57	0.270	2.429	0.018

a. Dependent Variable: Turnover discrepancy

Appendix D: Questionnaire

Date:

General information

1. Name of the owner:	2. Age:
Gender: M / F	

3. Marital status:
    1. Single
    2. Married
    3. Divorced

4. Latest education:
    1. Elementary school
    2. Junior high school
    3. Senior high school
    4. Bachelor and beyond
    5. Not attending school

5. Name of the business:	6. Starting year:

7. Type of industry:	8. Location:

9. Is the business your main source of income?
    1. Yes
    2. No

10. Level of damage from the disaster?

1. Severe	2. Medium	3. Light	4. No damage
Production tools were severely damaged, the business temporarily stopped operating	*Production tools were fairly damaged, the business was still able to operate despite the disruption.*	*Production tools were lightly damaged, minor disruption to the business operation*	

Pre- and post-disaster condition

11. Before the disaster, did you own the same business?
    1. Yes → continue to no. 13
    2. No

12. [IF NOT] what was your previous business?

13. How much employees did you have before the disaster?	14. How much employees do you have now?
15. How much was your monthly turnover before disaster?	16. How much is your monthly turnover now?

17. After the disaster, how long did you take to re-operate the business?

18. Compared to before the disaster, how is the condition of your business now?

1	2	3	4	5
Much worse	*Slightly worse*	*About the same*	*Slightly better*	*Much better*

19. Compared to before the disaster, how is the condition of your life and your family's life now?

1	2	3	4	5
Much worse	*Slightly worse*	*About the same*	*Slightly better*	*Much better*

20. In your business, is there any family member involved? For example: being involved in the production, sales, book keeping, or capital ownership.
    1. Yes
    2. No → continue to no. 22

21. [IF YES] how many family members are involved?

Social capital

Family and business

On the following statements, please mark the number that is most suitable to your current condition. Number 1 means strongly disagree and number 7 means strongly agree.

22. The majority of the capital in my business is owned by family members.

1	2	3	4	5
Strongly disagree	*Disagree*	*Nor agree or disagree*	*Agree*	*Strongly agree*

23. In my family business, family members exert control over the company's strategic decisions.

1	2	3	4	5
Strongly disagree	*Disagree*	*Nor agree or disagree*	*Agree*	*Strongly agree*

24. Preservation of family control and independence are important goals for my family business.

1	2	3	4	5
Strongly disagree	*Disagree*	*Nor agree or disagree*	*Agree*	*Strongly agree*

25. Family members have a strong sense of belonging to my business.

1	2	3	4	5
Strongly disagree	*Disagree*	*Nor agree or disagree*	*Agree*	*Strongly agree*

26. My family business has a great deal of personal meaning for family members.

1	2	3	4	5
Strongly disagree	*Disagree*	*Nor agree or disagree*	*Agree*	*Strongly agree*

27. Family members are proud to tell others that we are part of the family business.

1	2	3	4	5
Strongly disagree	*Disagree*	*Nor agree or disagree*	*Agree*	*Strongly agree*

28. Building strong relationships with other institutions (i.e., other companies, professional associations, government agents, etc.) is important for my family business.

1	2	3	4	5
Strongly disagree	*Disagree*	*Nor agree or disagree*	*Agree*	*Strongly agree*

29. My family business is very active in participating in social activities at the community level.

1	2	3	4	5
Strongly disagree	*Disagree*	*Nor agree or disagree*	*Agree*	*Strongly agree*

30. In my family business, contractual relationships are mainly based on trust and norms of reciprocity.

1	2	3	4	5
Strongly disagree	*Disagree*	*Nor agree or disagree*	*Agree*	*Strongly agree*

31. Protecting the welfare of family members is critical to us, apart from personal contributions to the business.

1	2	3	4	5
Strongly disagree	*Disagree*	*Nor agree or disagree*	*Agree*	*Strongly agree*

32. In my family business, the emotional bonds between family members are very strong.

1	2	3	4	5
Strongly disagree	*Disagree*	*Nor agree or disagree*	*Agree*	*Strongly agree*

33. In my family business, family members feel warmth for each other.

1	2	3	4	5
Strongly disagree	*Disagree*	*Nor agree or disagree*	*Agree*	*Strongly agree*

34. Successful business transfer to the next generation is an important goal for family members.

1	2	3	4	5
Strongly disagree	*Disagree*	*Nor agree or disagree*	*Agree*	*Strongly agree*

35. Family members would be unlikely to consider selling the family business.

1	2	3	4	5
Strongly disagree	*Disagree*	*Nor agree or disagree*	*Agree*	*Strongly agree*

36. Continuing the family legacy and tradition is an important goal for my family business.

1	2	3	4	5
Strongly disagree	*Disagree*	*Nor agree or disagree*	*Agree*	*Strongly agree*

37. After the disaster, my family members and relatives give me financial support that helps my business recovery.

1	2	3	4	5
Strongly disagree	*Disagree*	*Nor agree or disagree*	*Agree*	*Strongly agree*

38. After the disaster, my family members and relatives give me physical, moral, and spiritual supports that helps my business recovery.

1	2	3	4	5
Strongly disagree	*Disagree*	*Nor agree or disagree*	*Agree*	*Strongly agree*

Social interaction

39. After the disaster occurred until now, are you involved in any membership of business associations or community organizations?
    1. Yes
    2. No → continue to no. 41

40. [IF YES] How many associations or organizations are you involved in?
If you are not sure, just give us an approximate number.

41. How often did you participate in the events or meetings held by your neighboring communities (such as religious events, community gathering, etc.)?

1	2	3	4	5
Never	*Rarely*	*Sometimes*	*Often*	*Always*

42. In general, to what extent was the contribution of your friends and surrounding neighbors to your business recovery?

1	2	3	4	5
Not helpful at all	*Slightly helpful*	*Somewhat helpful*	*Moderately helpful*	*Extremely helpful*

43. Since the disaster occurred, have you been participating in any training or workshop regarding your business development?
    1. Yes
    2. No

Economic capital

44. What are the sources of funding for your business?

You can choose more than one, please write the approximate percentage as well.

1. Personal saving ____________ %
2. Family/relatives ____________ %
3. Friends/neighbors ____________ %
4. Associations/community ____________ %
5. Bank/financial institutions ____________ %
6. Others, please mention

____________ %

45. Have you received any insurance from the damage incurred by the disaster?
    1. Yes
    2. No

46. After the disaster, have you received any aid in form of financial aid or production tools?
    1. Yes
    2. No

[End of Questionnaire]