



**Decoding relationships in organizational learning process:
Perspectives from an emerging economy**

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Abstract:	<p>Despite its direct impact on corporate longevity, there is no established theory of organizational learning yet. Coupled with the lack of empirical studies that use novel approaches for studying organizational learning, led us to propose a relationship-based perspective rooted in social network analysis for better understanding the underlying social processes in learning. We chose the context of family firms for studying organizational learning because family firms provide an appropriate context to investigate the relationships between people in the learning process. A richly detailed single-case methodology, which is often utilized for social network analysis, was deemed appropriate for our study. We collected data from the members of the management team of a second-generation family business. The socio-centric (whole-network) approach in social network analysis was used for collecting participant responses. The data was entered into a social network analysis program called UCINET to calculate the network measures for learning subprocesses. The author complemented this analysis with interviews to build a detailed description of the case. The assessment of the relational characteristics via social network analysis helped to clarify sources of path dependence in family businesses. Mapping information flow made it possible to predict whose knowledge will account for a substantial amount of an organization's learning accounted for by various subprocesses. Based on works that have already been done on organizational learning and social network analysis, our findings cast new light on research that has examined the effects of relational properties on the extent of organizational learning in family firms.</p>

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54 *Information, Relationships*
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Decoding relationships in organizational learning process: Perspectives from an emerging economy

Introduction:

Studies have shown that organizational learning (hereafter referred to as OL) is central to any organization's success and has a positive relationship with organizational performance and innovation (Yeo, 2008; Argote, 2011). Despite its direct impact on corporate longevity, the theoretical development of the concept of OL has lagged, and there is no established theory in OL (Bapuji & Crossan, 2004; Crossan et al., 2011). When the competitiveness and future success of an organization depend on the effectiveness of OL, our focus is on the family firms, hailed as the backbone of corporate life (Poutziouris et al., 2006), and where "the incentive to learn readily exists" (Zahra, 2012, p. 61). Studies have shown that family businesses suffer from a scholarly gap about the learning process (Ward, 2011). In support of this finding, Lee et al. (2019) have pointed out in *Family Business Review* that "in 2006, over 70% of family firms that had been established in the previous ten years permanently closed their businesses" (p.259). The problem with the existing research on OL in the family business is that it focuses on 'family' as the locus in which learning occurs (Cucculelli and Bettinelli, 2016). Furthermore, the family firms tend to be complex systems, where family and non-family members intertwine, adding to a rich context for investigation of the relationships between people in a family firm. The need for future research in this crucial area of family firms was corroborated by Zahra (2012), "future researchers need to explore the influence of specific factors that are related to the family and its firm and how they influence organizational learning". However, the lack of empirical studies in OL that uses novel approaches towards pursuing a relational approach to OL process has been a growing concern among organizational learning scholars.

Taking a social network perspective, we emphasize the significance of relationships when it comes to OL and reason that relationships are paramount in family businesses as they tend to give access to and control the flow of information within the family firm. For our study, we limit the focus towards those family businesses that consistently pursue innovation and strategic renewal, where OL is more significant. Therefore, building on the previous work discussed above, our underpinning research question is: How does the organizational learning process proceed within an family business from a relationship perspective? Accordingly, we present social network data from a 50-year-old entrepreneurial family firm. By exploring how

the OL process unfolds in a family business through its constituent members, we contribute to the area of organizational learning, social network analysis, and family business research.

Conceptualizing our organizational learning framework

Studies acknowledge that family firms account for 66% of enterprises globally (Gersick et al., 1997). Narrowing down to Asia and the Middle East, 95% of the firms are family-owned or managed (de Vries et al., 2007). Though researchers have stressed the need for studying family firms from a learning perspective (Zahra, 2012), not much has happened. In this paper, we borrow from information processing theory and social exchange theory to make sense of the OL in family firms. Much of the research on OL based on information processing theory is concentrated at the individual level. Scholars have recently started giving attention to collective learning from a social network perspective - a manifestation of shared ideas and perspectives (Thomas & Vohra, 2015). We also draw from the organizational learning model proposed by early researchers like Huber (1991) and Crossan et al., (1999) that comprised of subprocesses of OL like information acquisition, information interpretation, and information integration. During the information acquisition process, individuals are involved in exploring new ideas that may result in innovation and change (Berthon et al., 2008). We also use the social network measures proposed by Thomas and Vohra (2015) for measuring the various subprocesses of OL. As seen in Fig 1(a), only one person approaches actor A for information, while five others approach actor B for information. The concept of indegree centrality in social network analysis is used here to calculate the information acquisition behavior within the network.

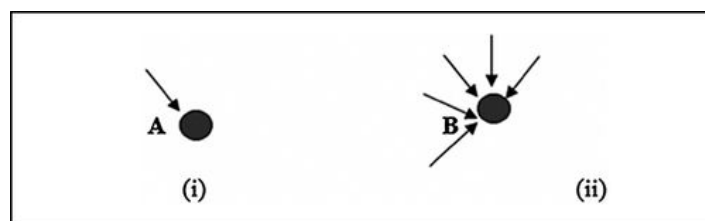


Figure 1(a): Indegree

Similarly, in Fig. 1(b), there are two actors A reaches out for information, while B has four connections. We use the social network analysis measure, Outdegree to calculate the information seeking behavior of the actors in the network.

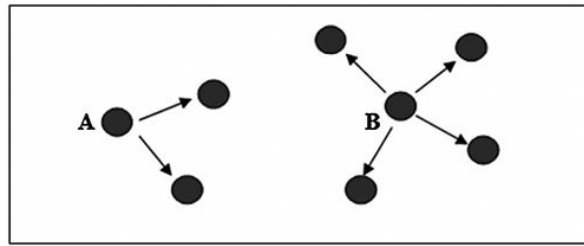


Figure 1(b): Outdegree

Another network measure that we borrow from social network analysis is the eigen vector centrality for information acquisition. As shown in Fig. 1(c), D is in the center of the network with several connections. What it means is that D has access to information from many others who are themselves heavily connected, but not directly connected to D. When we compare E and D, they have the same indegree centrality. However, the difference in acquisition behavior is captured by alter degree centrality, that is more global than local in the structure.

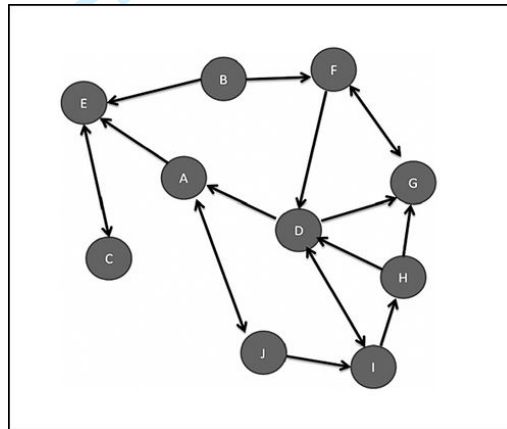


Figure 1(c): Alter degree centrality

In Fig. 1(c), information acquisition behavior of D from E would require it to go through A, since D doesn't have a link with E. The concept of betweenness centrality is used here to capture the information acquisition behavior of being a gatekeeper. i.e., in getting access to the information that is being acquired by D.

We define information interpretation as the “process of translating events and developing shared understandings and conceptual schemes” (Daft and Weick, 1984, p. 294). We draw from social comparison theory that says people compare their views with those of others while developing own beliefs (Festinger, 1954). Interpreting is more about individuals making sense of the information received (Huber, 1991). Our conceptualization for information interpretation emphasizes the fact that members develop a collective understanding with others in their network if they find similarity in their perceptions and that of others.

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3 Information integration is an extended process of information interpretation that occurs at the
4 group level (Flores et al., 2012). As rightly pointed out by Tsai and Ghoshal (1998), individuals
5 having similar perspectives with others are more likely to share information during integration
6 since they can better envision the potential value of the information. We use the concepts of
7 outdegree centrality and betweenness centrality for measuring the information integration
8 process.
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17 **Methodology**

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19 In framing our study, we view organizational learning in family firms as a socially embedded
20 process. To capture this contextually complex process and answer our underpinning research,
21 a richly detailed single-case methodology, which is often utilized for social network analysis,
22 was deemed appropriate. In particular, the case study design is suited to the purposes of
23 exploratory research that features throughout the organizational learning literature (Lagrosen
24 et al., 2011). For the reasons outlined above, our research design is consistent with our research
25 question, which asks about the manifestation of the organizational learning process in the
26 family firm. Our sampling was purposive (Pratt, 2009). For our study's purposes, we sought a
27 family firm for our social network study based on two criteria (Jaskiewicz et al., 2015;
28 Hamilton, 2011):
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37 1. A firm that is large enough to ensure family management is financially motivated to
38 engage in entrepreneurship.
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40 2. The family must aspire to transfer the business to the next generation, beyond the
41 founder's lifetime; thus, we chose a second-generation family business.
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45 Therefore, our learning evidence includes insights from the management team of a second-
46 generation family business known in this paper as eProtect¹. The preliminary interviews
47 indicated that organizational learning at eProtect was highly people-centered. We collected
48 data from the members of the management team of eProtect. This family firm is in the business
49 of electrical and electronics household electrical products. We administered the surveys and
50 conducted the interviews during 2013 and 2014 and we continued to track the company from
51 2013 to 2015. A detailed list of people who were interviewed in the management team is given
52 in Table 1. The detailed description of the company from our interviews enhanced our
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60 ¹ Name changed for anonymity

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3 understanding of its social networks. Unlike other typical family firms, eProtect had only one
4 family member in the management team, the Managing Director.
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7 A whole-network (socio-centric) approach was used for social network analysis. We gathered
8 the whole network data using single item questionnaires (Marsden, 1990). The questions were
9 asked to find the learning relationship of the members with others in the set boundary (see
10 Table 1). The respondents were given a roster that included the names of members of the
11 management team of eProtect. The use of a single item required researchers to ask specific,
12 focused questions. For information acquisition, we asked two questions: “Who are the people
13 that you typically turn to for information or knowledge on work-related topics?” and “Who are
14 the people who typically turn to you for information or knowledge on work-related topics?”,
15 and estimate pooling technique suggested by Borgatti and Cross (2003) was used to combine
16 the questions. For information interpretation, we asked “indicate whether the person below
17 shares the same perspective, in that, he/she think in a similar way, have similar goals and
18 objectives, and understand each other’s mindset when you communicate.” For information
19 integration, we asked “how often did you communicate with this person during the last three
20 months? (on a scale on 1–7).” The data was then converted into matrix form and UCINET
21 (Borgatti, Everett, & Freeman, 2002) was used to analyze the relational data.
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36 **Results and Discussion**

37 *Acquisition*

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39 We used UCINET (Borgatti, Everett, & Freeman, 2002) to calculate the four network measures
40 for information acquisition. The four indices developed by Thomas and Vohra (2015) for
41 capturing the first subprocess of OL, information acquisition – Reach Index (indegree
42 centrality), Alter Index (eigen-vector degree centrality), Mediation Index (betweenness
43 centrality) and Seek Index (outdegree centrality) for capturing information acquisition. Reach
44 Index refers to the extent to which people are being approached for information in the
45 management team. In our analysis, we found that the only family member in the firm –
46 Managing Director (MD), had a low Reach Index in the information acquisition chart, as shown
47 in Fig 2. It meant that others less approached the MD for information. During our interviews,
48 we found that the members in the management team thought it was too costly for them to reach
49 out to the family member, who was also the MD, to seek information. Cost in this context was
50 interpreted in two ways: member's fear of admitting ignorance to the MD and risk of becoming
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indebted to the family member. Some of the members suggested that the MD was young, and his relatively newness to the organization after taking over the leadership position from his father who had retired was not well appreciated by a few people. The members felt the need to seek information from others who were experienced and knowledgeable than him, with the risks also considerably reduced. The Reach Index was the highest for Director (Marketing and Strategy), D-M&S, who had joined the firm one year back. His domain expertise was known throughout the family firm, and eProtect management team placed high expectations on him as he had joined eProtect after quitting from a leadership role in one of the multi-national companies. People knew that they could get expert advice from D-M&S, if they reached out to him. The Reach Index was also high for Director (Administration), D-Adm, and Senior Vice President (Supply Chain Management), SVP-SC. During our interviews with the respondents, we found that D-Adm and SVP-SC were old-timers in the family firm, and they were the trusted lieutenants of the founder, who had retired. Their long history of being associated with the family firm and the tacit knowledge they possessed about the firm's functioning were factors that prompted other members of the management team to acquire information from them.

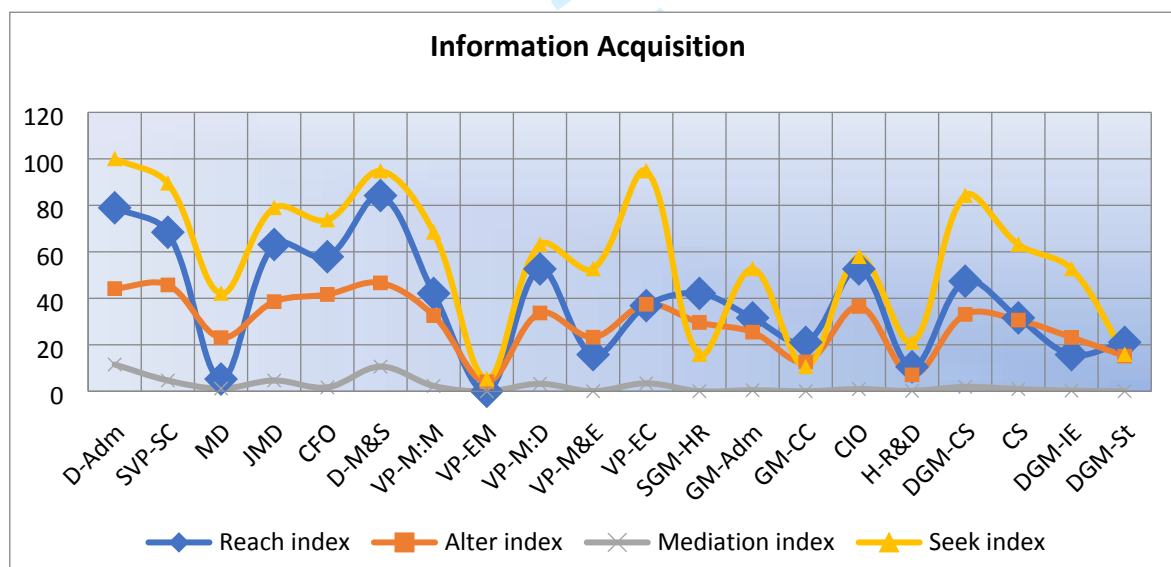


Figure 2: Information Acquisition indices

During the interviews, the members also mentioned that they reached out for information whom they believed were experts in their respective domains (e.g. CFO and JMD). We also found that the interpersonal acquaintances that arose mainly from formal division of labour led

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3 to informal ties, as members developed close relationships with people in other divisions and
4 functions. From Fig 2, we observed that Vice President (Marketing), VP-M:D; Chief
5 Information Officer, CIO; and Deputy General Manager (Customer Service), DGM-CS; had
6 higher values for Reach Index owing to their corresponding responsibilities of marketing,
7 information, and customer service. It became clear during interviews that these roles required
8 people to reach out to others for information.
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11 We then calculated the Alter Index for each member in the acquisition network, as shown in
12 Fig 2. The Alter Index represents the number of people that each person is indirectly connected
13 through his/her connections. It captures the extent of information available to the person
14 through others (indirect connections through direct connections). We found that Director
15 (Marketing and Strategy), D-M&S had the highest value for Alter Index in the information
16 acquisition network (see Fig 2). It means that D-M&S had the highest number of alters (direct
17 connections) who had the highest number of connections themselves. The information
18 advantage that the high Alter Index provides for D-M&S in the family firm is that he has access
19 to information from others his contacts are connected to, but he himself not. It is possible that
20 some of the information he receives may be redundant, but there is a greater likelihood that he
21 does not miss any novel information that flows through the network because of his high alter
22 index. Except for Managing Director, MD, Vice-President (Electromechanical Division), VP-
23 EM and Head (Research and Development), H-R&D, we found the Alter Index to be moderate-
24 high for other members of the firm. The low Reach Index of MD can explain the reason why
25 he had a low Alter Index. For H-R&D and VP-EM, the interviews brought out the point that
26 the segregated nature of their work away from active involvement in management decisions
27 was the contributing factor for the low Alter Index. On comparing Reach Index and Alter Index
28 for the information acquisition network, we found that the Alter Index was high for members
29 who also had high Reach Index. This is an exciting observation for family firms because people
30 were acquiring information from others who were themselves well connected, and that may be
31 the result of the tightly knit close relationship between the members of the family firm.
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35 We calculated the Mediation Index for members in the information acquisition network (see
36 Fig 2). Mediation Index refers to the extent to which a person can lie as a connecting link
37 between two others who are not directly connected and need to communicate for information
38 acquisition. When the unconnected nodes acquire information through the connecting node,
39 the mediator also gains because he/she gets access to the information request. Fig 2 shows that
40 Director (Administration), D-Adm, and Director (Marketing and Strategy), D-M&S had high
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3 values for Mediation Index. It means that both of them facilitated the information acquisition
4 behaviors of other members in the network. The others in the management team had low values
5 for Mediation Index. This may be because of their lack of power in the information acquisition
6 network and their inability to broker the flow of information.
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10 We calculated Seek Index for each of the members in the information acquisition network (see
11 Fig 2). Seek Index tells us how many people a person reaches out for acquiring information.
12 We found that Director (Marketing and Strategy), D-M&S had a high Seek Index. It got
13 supported during the interviews that D-M&S was not only the most critical source of
14 information (because of his high Reach Index), he also went out to seek information from many
15 others in the network. Senior Vice President (Supply Chain Management), SVP-SC, also had
16 a high Seek Index due to his multiple organization roles in the family firm. During the
17 interviews, we found that he was heading the Supply Chain Management Unit and also
18 overseeing the administrative functions. This required him to seek information various levels
19 and functions. For people like Head (Research and Development), H-R&D, General Manager
20 (Corporate Communications), GM-CC, Deputy General Manager (Strategy), DGM-St and
21 Senior General Manager (Human Resource Management), SGM-HR, their low Seek Index
22 values was attributed to their short tenure with eProtect and the time it takes to socialize to seek
23 information from others in the network.
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35 *Interpretation*

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37 Information interpretation involves making sense of the information and reaching a shared
38 meaning and understanding. Though the interpretive process happens at the individual level, it
39 becomes integrative when embedded within the group. We used the same index used in Thomas
40 and Vohra (2015) based on degree centrality – Similarity Index - for information interpretation.
41 The similarity index refers to the number of people in the firm with whom they share a similar
42 perspective in reaching a shared understanding. The similarity index for each of the
43 management team members was computed using UCINET software and shown in Fig. 3. The
44 similarity index was found to be high for Managing Director, MD; Director (Administration);
45 and Director (Marketing and Strategy), D-M&S. During interviews, it was mentioned that the
46 members found to be a good sign for eProtect as members of the management team aligned
47 with the goals and perspectives of the top leadership - MD, D-Adm, D-M&S. It also ensured
48 that members reach a shared understanding during the information integration process. The
49 members who had joined the firm recently – General Manager (Corporate Communications),
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GM-CC; Vice President (Mechanical and Electrical), VP-M&E; Deputy General Manager (Strategy), DGM-St; and Deputy General Manager (Industrial Engineering), DGM-IE – had low values of Similarity Index because they were taking time to get socialised and their previous cultural experience could have been delaying the process.

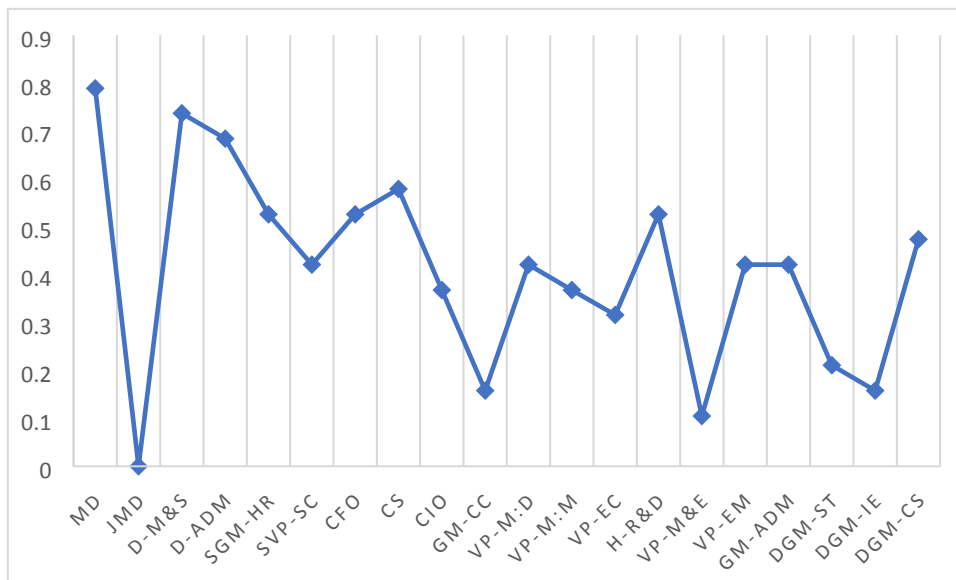


Figure 3: Information Interpretation index

Integration

Our definition of information integration is based on what Daft and Weick (1984) say: "The distinctive feature ... is sharing. A piece of data, a perception, a cognitive map is shared among managers.... Passing a startling observation among members, or discussing a puzzling development enables managers to converge on an approximate interpretation" (p. 285). We used two indices – Dissemination Index and Power Index for information integration. Dissemination Index is the number of people that a person shares information. The Dissemination Index was calculated for each of the management team members using UCINET software (see Fig 4). The information integration network was found to centered around Director (Administration), D-Adm having the highest value for Dissemination Index. The D-Adm had been with eProtect for four decades and still serves as a close confidante of the founder (now retired and not active in the business). During the interviews, it became clear that D-Adm was easily accessible and was a mentor for many of the long-timers at eProtect. Though

the Reach Index for the Managing Director, MD was low in information acquisition network, the high value for Dissemination Index in the information integration network suggests that he allows information to flow smoothly in the network. eProtect had created the position of Chief Information Officer (CIO) recently after realizing the need for information management in the family firm and that justifies that high Dissemination Index value for CIO after D-Adm.

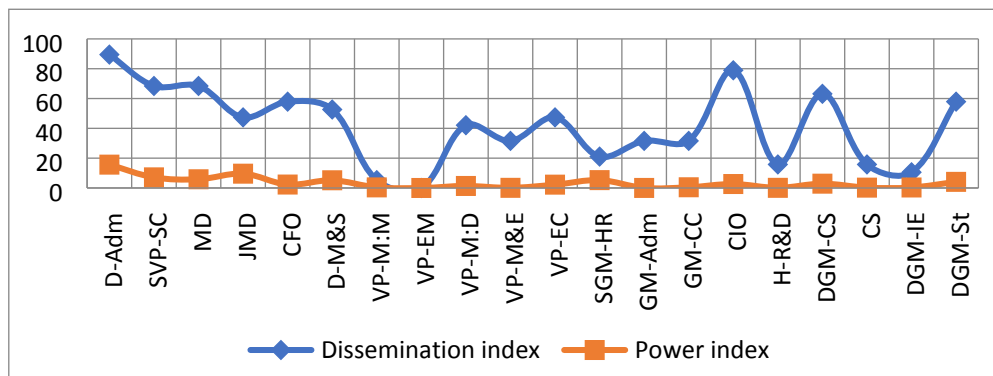


Figure 4: Information Integration indices

Since the extent of influence or power that a member holds in the integration network does not reflect in the Dissemination Index measure, we used Power Index as a measure of information integration. Power index refers to the control that a member can exert when two unconnected actors share information while reaching a common understanding. “Being in the right place” in the integration network is related to power, because the network position that the actor occupies allow him/her to have more access to information (Brass, 1984). We calculated Power Index for each management team member using UCINET software (see Fig 4). The Power Index was the highest for Director (Administration), D-Adm. Since D-Adm was an old-timer at eProtect, he was close to people in the eProtect network and helped people reach a shared understanding based on the tacit knowledge he possessed. The values for Power Index across the management team indicate that information was shared widely within the organization, and nobody acted as a broker controlling the flow of information in the network when it came to integration. The interviews with the members pointed out that dialogue and joint action were typical at eProtect, leading to the development of shared understanding. Through these

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3 continuing conversations among the management team members, shared knowledge developed
4 through mutual adjustment and negotiated action (Crossan et al., 1999).
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10 **Conclusion and future steps:**

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12 The objective of the study has been to understand the processes of organizational learning from
13 a relational perspective. Based on works that has already been done by Thomas and Vohra
14 (2015), we used the network measures for a detailed analysis of each of the processes of
15 organizational learning. Our results indicate that it is time for us to look beyond the confined
16 settings in which transactive memory and distribution cognition operate and to keep an open
17 eye on other relationship features that facilitate organizational learning in a family firm. At the
18 same time, we reiterate that the integration process in organizational learning cannot proceed
19 without knowing what others know.
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27 This in-depth case study provided insight into the organizational learning process through the
28 lens of social network analysis for a family firm. For information acquisition, we found that
29 the network measures: Reach Index, Seek Index, Alter Index, and Mediation Index – gave clear
30 indications about the nature of information seeking among the family firm members and the
31 extent of organizational learning within the firm viewed from an information acquisition
32 perspective. The firms with high values for Reach Index and Seek Index provided momentum
33 for learning initiatives as they are always in the pursuit of acquiring information and know the
34 exact location of the sought out information to be able to access it at the right time. People with
35 high values for Alter Index suggest a learning network where individuals' direct connections
36 are heavily connected themselves and can thus aid access to information. Those family firms
37 who have high Mediation Index gain power by possessing control through their ability to act
38 as gatekeepers during information acquisition. In the case of information interpretation, we
39 found that the Similarity Index signals the extent of commonality that exist in team members'
40 thought process about the organization's shared goals and strategies. In the case of information
41 integration, more people with higher Dissemination Index values suggest that the information
42 flows freely in the organization, and people has access to information that help them reach a
43 shared understanding. The Power Index is a fitting reflection of how much people can control
44 information flow in the integration network while gaining a shared experience.
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58 Family firms will gain from their adoption of the social network measures for analyzing their
59 learning network and position of individuals in the learning network to restructure the network
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3 to their advantage. By utilizing the network measures that we have developed and tested,
4 management teams in family firms can diagnose their network and design interventions with
5 higher chances of success than relying on the traditional methods for uncovering existing
6 information channels.
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10 Like other network studies in various domains, our study's limitation is that it provides a
11 snapshot of a phenomenon evolving. The research at some other point in time may show
12 different results. This limitation is inherent to all network designs.
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For Peer Review

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Table 1: Members of the management team interviewed, and the abbreviations used

Designation	Abbreviation
Managing Director	MD
Joint Managing Director	JMD
Director (Marketing & Strategy)	D-M&S
Director (Administration)	D-Adm
Sr. General Manager (Human Resources)	SGM-HR
Sr. Vice-President (Admin & Supply Chain Management)	SVP-SC
Chief Finance Officer	CFO
Company Secretary	CS
Chief Information Officer	CIO
General Manager (Corporate Communications)	GM-CC
Vice-President (Marketing - I)	VP-M:D
Vice-President (Marketing - II)	VP-M:M
Vice-President (Electronics)	VP-EC
Head (Research & Development)	H-R&D
Vice-President (Mechanical & Electrical)	VP-M&E
Vice-President (Electromechanical)	VP-EM
General Manager (Administration)	GM-Adm
Deputy General Manager (Strategy)	DGM-St
Deputy General Manager (Industrial Engineering)	DGM-IE
Deputy General Manager (Customer Service)	DGM-CS