

Role of Relational Capital and Firm Performance: Analysis of a Cluster of Bell-metal Enterprises in a Rural Region in West Bengal, India

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Abstract

This paper has tried to assess the impact of relational capital components on the performance of bell-metal clustered firms in Dharmada region of Nadia district in the State of West Bengal in India. The issue of relational capital has been considered in relation to the notion of intangible asset. Eight components of relational capital indicators were considered and they were combined into a single overall index by using principal component method. A study was conducted on a sample of sixty firms in the cluster. Cronbach's alpha has been used to assess the reliability or internal consistency of the set of individual relational capital indicators. The overall index of relational capital is found strongly associated with profitability performance. The overall regression of profitability figures on individual relational capital indicators has been observed to be significant and some of the indicators are also found to significantly influence firm performance level. The analysis identifies and provides suggestion regarding upgrading and maintaining relational capital components in which the firms may have some advantage. This can make substantial contribution to the performance of firms.

Keywords: Relational capital; Cronbach's alpha; Entrepreneurship; Regression

Introduction

While earning, sustained profit serves as an important driver of a firm's action, maintaining the market share, maximizing sales or even retaining or increasing the customer base often supersedes the profit motive on the part of a firm's conduct. In fact, in this globalized world when spirits of both perfect and imperfect competition, dominate the market economy, apart from usual market conduct, firms try to survive the market uncertainties by taking recourse to subtle behavioral actions that provide competitive edge compared to others. Hence alongside putting efforts towards possible expansion in the scale of production, undertaking investment for maintaining the tempo of expansion, spending on advertisement or innovative works, in order to flourish business firms often feel concerned in maintaining cordial relation with all the stakeholders who may be directly or indirectly linked with its process of production and disposal of final output. Maintaining a sociable and affable relation with all the related stakeholders leads to smoothening of the production channel, enhancement of the market base, and arresting the attention of the potential customers. Enhancing the bonding and good trust relationship with input suppliers, laborer's, customers or even clustered firms in the locality usually proves very effective for the firm to improve the quality of its product, market its output and/or lower the prices in order to remain competitive in the market.

According to Adecco [1], in the backdrop of a flourishing knowledge economy, it has become easier for competitors to gain access to same technology, develop a similar product, enter the same market by strengthening the access to credit base etc. This enhances the importance of sources of capital for better competitive edge, that are difficult to emulate and replicate and relational capital falls in this category. Relational capital encompasses all the intangible assets generated by developing, maintaining, and nurturing high quality relationships with the external partners that could enhance the firm's performance [2]. Kijek and Kijek [3], emphasized two-fold impacts of relational capital on firms performance namely: cost reduction and increased market value. They opined that knowledge embedded in relationship among employees, customers and suppliers may lead

to cost reduction. This may be achieved through process innovations, increased outputs that results in economies of scale.

Carlucci [4] observes that, enhanced investment in relationships with internal and external stakeholder groups for improving performance, usually have multiple effects in the production network. Internal source of relational capital refers to informal bonding with members of the family, relation with business partners or the laborer's who deal with inputs. While external networks in the form of linkages with customers and suppliers, informal relation with firms in a cluster and mutual trust or coordination of their efforts, linkages with external bodies such as local/state Govt., location of the firm as well as reputation or goodwill of the firm-all constitute the external source of relational capital. Young and Snell [5] observed that with enhanced level of relational capital, there emerges greater likelihood of increased production and better efficiency in service delivery.

Andriessen [6], opine that not all businesses can set up relation with their environment and this is mostly the case for newer business ventures which do not have any history and so cannot recognize and manage the relational assets. On the other hand, established firms/entrepreneurs, do not usually falter in comprehending the strength of relational capital due to their long experience in business dealings. In the context of an industrial cluster however, the relatively new firms because of close proximity and coordination with established older firms, are likely to realize early the importance of relational capital. For successful handling of relational capital, firms should recognize that it is a very important component of intangible asset apart from financial and physical assets.

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According to Ogundipe [7], Cluster competitive advantage can be enhanced if relational capital concept can be embraced and developed both within the organization and the cluster as an entity. Value creation based on mutual trust and cooperation within the cluster should be encouraged. This can be achieved through employees share value and togetherness built on trust and open culture within the cluster. Barney et al. [8] state that common values and shared visions among firms in a cluster, promote the bonding based on mutual faith and trust relationships, thus lessening the possibility of cheating and opportunistic behaviors. In case of small and medium scale firms particularly in case of developing economies, relational capital is directly linked to business performance, without this capital the organizational competitiveness and higher performance level can hardly be achieved [9]. In the context of the importance of relational capital as an intangible asset for flourishing of firm performance in a cluster, it seems imperative to focus on the impact of relational capital on a set of clustered firms in a rural region in a developing country like India. For this purpose this paper focuses on the following objectives (a) to derive an overall index of relational capital in case of some small scale clustered firms in a rural region in India and find the degree of correlation of this index with that of firm performance level (b) test the reliability of the relational capital items and (c) analyses the influence of individual relational capital components on the level of firm performance.

Relational Capital and its Link to Intangible Asset

Relational capital as an intangible asset has in recent years captured more focused interest of organizations than that of physical and financial capital. In the era of globalized uncertainties regarding use of financial assets and stringent imposition of environmental norms regarding use of physical capital, firms have tended to get inclined to more efficiently nurture the intangible relational capital as an adjunct of intellectual capital. According to Martín de Castro, López and Navas [10], the basic foundation of intangible assets rests on information and knowledge sharing, cordial business relationship and mutual trust and sympathetic behavior with all stakeholder groups, and hence these assets are hardly detectable, mostly inimitable, irreplaceable and nontransferable in the markets. This type of intangible asset is broadly categorized as a form of manifestation of intellectual capital, which have a bearing on the performance of the firms. Several authors declare that firms with an adequate intellectual capital have a better chance of survival [11]. Swart [12] opines that intellectual capital is broadly divided into four categories: human capital, customer capital, social capital and organizational capital. Edvinsson and Malone [13] argue that, intellectual capital covers the relationship between customers and other stakeholder groups.

Extending the definition of Edvinsson and Malone [13], relational capital is reflected as a form of intellectual capital which can be viewed in terms of three layers. The first layer covers the importance of networks, collaborations and associations in knowledge spillover and sharing. The second focuses on the relationships with customers, input suppliers, business partners and all stakeholder groups both internal and external, while the third takes care of mutual bonding based on trust, faith and reputation. Relational capital serves as a reservoir wherefrom the firms can get enriched through external outsourcing of information and knowledge and channelizing that knowledge into developing improvised technique. It may be noted that pertinent to the knowledge based view of the firm, there has been an evolution in usage of terms associated with intellectual capital. Since now-a-days knowledge economy pervade the environment in which organizations

have to operate, there is an increasing realization towards developing a strong relation with their environment in order to acquire and share essential knowledge for the promotion of their business. The present business tune is to move towards a knowledge-based economy where intangible assets and investments are seen as essential elements for value creation in companies and, consequently, to economic wealth [14].

In the era of increased competition when the threat of being superseded is high, there is a need for quick adjustment in internal organization for surviving in the competitive ambience. In order to adjust with changes of competitive forces, the need is to have an ability to understand and quickly adopt new knowledge. The ability to read the signals provided by the market and then to decode the signals to adjust it to the needs of the customers and to enhance the competence of the organization, holds as a competitive advantage. This necessitates the maintenance of good relationship with all stakeholders who might be party in promoting the competitive strength of the firm. There is a tendency towards a closer focus on the core-competencies, as firms tend to outsource activities that do not hold the potential to differentiate the firm from its competitors. As a sequel the focus is on developing closer relationship with customers, suppliers, knowledge institutions and universities [15].

Fitzpatrick [16] analyzed the importance of business relationships in recession. According to him, business relationships can be viewed as the businessmen's relational capital that has an intrinsic value. According to him business flourishes on the basis of dynamic forces which are powered by twin drivers like people and relationships.

The capital aspect of the relationships is now widely recognized as it is seriously believed that there exists strong connection of relational capital to firm performance level and relationship capital is now considered as a major source of competitive advantage [17,18]

Components of Relational Capital and Relevant Hypotheses

Relational capital is composed of several interlinked components. The individual components and relevant hypothesis with regard to link with firm level performance are outlined below.

Relation with customers

In the event of growing competition in the business world and era of advertisement, maintaining good customer relation is deemed as an important form of external intangible asset by a firm. Strong bonding with customers leads to sustained value addition to a firm and better prospects of gaining strategic information that might help into capturing the share of rival firms. Contacts, reactions and responses from customers send signals about drift of market demand, change in consumer preferences, substitute products and likely price movement. Consumers are deemed as sovereigns in the market and hence their expectation attitude, emotions and tastes needs to be systematically taken care of in order to retain the customer base. Better dealings with them, ready reciprocation, satisfaction of their expectation and tastes and keeping an overall healthy relation with customers puts the level of firm performance on a higher platform. So it is reasonably expected that good customer capital embedded in the form of maintenance of good customer relation has a direct association with the level of firm performance.

Relation with input suppliers

Constant liaising with input suppliers in order to have timely and adequate flow of quality inputs involves an important component of

relational capital. Timely payment of input cost, placing demand for inputs at predictable time sequence, gentle bargaining for rebate on input price, firm reputation in the market place involve strong points for keeping good relation with input suppliers. Sometimes survey undertaken by firms regarding satisfaction of suppliers from whom products/services are purchased, reflect upon the concern of firms to maintain good relation with them for continued support in future. It is highly expected that external capital of this type would have a positive impact in sustaining the tempo of firm performance.

Sharing of technological knowledge

Mutual interaction and reciprocation across the cluster of firms enhance the quality of relational capital in the form of increased scope of knowledge spillover, information sharing and improved technological competence. This creates scope of mutually better value addition for the stakeholders. Interflow of knowledge, mutual technological support and stream of information, enhance prospects of improving the quality of running product and better marketing arrangements. This is likely to be mirrored in terms of higher profitability.

Bonding with external groups

Maintaining links with external organization often help in promoting firm level performance. Thus connections with Govt. organizations, credit agencies, import/export companies, NGOs as well as common people residing in the neighborhood help in gathering valuable information, knowledge, credit, better access to marketing channels or strategic information about the market environment. External linkage of this sort is expected to positively influence the level of firm performance.

Informal relation with firms in cluster

Amiable informal interaction and absence of conflict amongst firms in a cluster can have a positive impact on perceived congeniality of social environment, agreeable ambience for continued production and an atmosphere of steady cooperation and healthy rivalry. This is deemed as an intangible asset and enhances productive zeal of an entrepreneur that is supposed to be conducive to enhanced firm performance

Location

Location of a firm linked with good transport facility to input and product market, opportunities of having the local support base in the form of technology, skilled labor and steady electricity as well as availability of large work space, engender a congenial atmosphere for better firm performance that may be reflected in higher profitability.

Reputation

Sociable way of dealing and transacting with all stakeholder groups helps enhance the level of reputation of an entrepreneurial firm and this creates avenues for further growth. Reputation serves to entice new customers, facilitates access to credit, eases the availability of raw material and other resources [19]. It enhances sort of credence amongst customers about the unassailable quality and durability of the product and hence an assured market share. Thus a reputed firm is supposed to have comparative advantage with regard to production, distribution and marketing opportunities and this brings in prospect of better marketability and profitability.

Trust and good faith relationship

Better reputation of a firm is likely to be reflected in the form of

mutual trust and faith. It strengthens the tie across input suppliers, customers, retailers, credit providers and enhances the likelihood of obtaining uninterrupted supply of inputs, maintaining the time bound production order in subcontracting frame and enables the production process to run on smooth and sustained basis with assured or even rising trend in market demand. This is likely to have a direct link with firm performance indexed by profitability.

Data and Method

The data were collected from the clustered firms producing bell metal items in Dharmada region of Nadia district in the state of West Bengal in India. A sample of 60 firms were covered in the study on the basis of face to face interview with the owner of the firms, based on a pre-structured questionnaire. The owners were favored as respondents to the questions, since they shouldered the day to day management responsibility and actively participated in overall decision making process.

Derivation of an overall index of relational capital on the basis of principal component method is based on the consideration of diverse individual indicators of relational capital. The overall index is considered as a latent or unobserved variable. Here the problem is the weight assignment to the individual indicators which is critical to maximize the information from a data set included in an index. A good composite index should comprise important information from all the indicators, but not strongly biased towards one or more of these indicators. Here it needs to be stressed that the individual indicators of relational capital are measured in terms of 5-point Likert type scaling ranging from 1=extremely unfavorable to 5=extremely favorable.

We consider the overall index of relational capital linearly determined by eight relevant components. The indicators are sharing of technological knowledge, relations with customers, relations with suppliers of inputs, informal relations with firms in the cluster, linkage with external bodies, locational advantage, trust and good faith relationship as well as reputation. These are denoted as X_{1i} , X_{2i} , X_{3i} , X_{4i} , X_{5i} , X_{6i} , X_{7i} and X_{8i} respectively. In latent form the relational capital index can be expressed as

$$R_i = \delta_1 X_{1i} + \delta_2 X_{2i} + \delta_3 X_{3i} + \delta_4 X_{4i} + \delta_5 X_{5i} + \delta_6 X_{6i} + \delta_7 X_{7i} + \delta_8 X_{8i} + w_i$$

(Where $i = 1$ to 60).

We denote λ_j ($j = 1, 2, 3, 4, 5, 6, 7, 8$) as the j^{th} Eigen value. Subscript j refers to the number of Principal Components that also coincides with the number of corresponding indicators. Noting that the values of gradually falls as the suffix increases, we denote P_j ($j = 1, 2, \dots, 7, 8$) as the j^{th} Principal Component. We get the corresponding relational capital index according to the following weighted average:

$$D_i = \frac{\sum_{j=1}^8 \lambda_j P_j}{\sum_{j=1}^8 \lambda_j}$$

Although usually the whole set of causal variables is replaced by a few principal components, which account for a substantial percentage of the total variation in all the sample variables, here we consider as many components as the number of explanatory variables. This is due to our concern in order to avoid discarding information that could affect the estimates. Thus this procedure accounts for 100 percent of the total variation in the data.

Cronbach's alpha is used to assess the reliability or internal consistency of the set of individual relational capital indicators.

It is computed by correlating the score for each item with the total

score for each observation and then comparing that to the variance for all individual indicator scores.

$$\text{Where } a = \left(\frac{k}{k-1} \right) \left(1 - \sum \sigma_{yi}^2 / \sigma_x^2 \right)$$

Where k refers to the number of relational capital items

σ_{yi}^2 indicates to the variance associated with indicator/item i

σ_x^2 implies the variance associated with the observed total scores.

The following multiple regression is set to assess the impact of the individual indicators on firm performance level,

$$\text{LnY} = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8$$

Where X_1 = technological knowledge sharing, X_2 = relation with customers, X_3 = relationship with input suppliers, X_4 = informal relation with firms in cluster, X_5 = Linkage with external bodies, X_6 = location, X_7 = trust and good faith relation, X_8 = Reputation and LnY refers to log value of per capita profit in the enterprise.

Empirical Results and Discussion

Principal component method has been applied to derive the relational capital index for sixty entrepreneurs based on eight relational capital items. For this purpose all the possible eight principal components have been used in order to fully utilize the available data and not to leave any information wasted. The following Table 1 provides the values of coefficients linked with the eight items of normalized values of relational capital for each of eight principal components. The corresponding Eigen values are tabulated at the bottom of the table (Table 1).

The corresponding relational capital index values for sixty entrepreneurs are computed by using the method

Further log values of per capita profitability of the enterprise families are also calculated. It is found that there exists highly significant correlation between these two series. The correlation coefficient is 0.765 which is significant at 1% level (p value being 0.00), Further if we regress the log values of profit on relational capital index, the coefficient is found to significantly positive as expected.

The reliability of the instrument used for measuring relational capital indicators is provided by the Cronbach's alpha coefficient which reflects the level of internal consistency of the indicators. Alpha coefficient value ranges from 0 to 1 and proves useful in describing the reliability of factors extracted from multi-point formatted questionnaires or scales (i.e., rating scale: 1=most unfavorable, 5=most favorable). Higher value of the score indicates better reliability level. According to Nunnally, 0.7 can be considered as an acceptable reliability coefficient. However in specific cases lower thresholds are not uncommon in the literature. In the present case the value of alpha, based on eight relational items, emerges as 0.715 which is indicative of reasonably good reliability of the instrument used for measuring relational capital indicators. However alpha if some item is deleted, as depicted in Table 2 is also an important element in this context. It is representative of Cronbach's alpha reliability coefficient for internal consistency if some individual item is removed from the scale. Thus as shown in Table 2, if item 5 (Linkage with external bodies) were removed the reliability of instrument used for firms' relational capital would somewhat rise in terms of value 0.751. Other variables are important as their omission decrease the value of the alpha coefficient (Table 2).

The following Table 3 indicates the mean value of the relational capital items, variation in perception level of entrepreneurs regarding relational capital components and the rank of the perceived status of the items. It is observed that as expected in a performing cluster, trust and good faith relationship achieve rank 1, reputation attain rank 2, while location of the cluster of firms is considered in a position of rank

Relational Capital Item	Coefficients							
	PC 1	PC 2	PC 3	PC 4	PC 5	PC 6	PC 7	PC 8
X1	0.371416	0.01194	0.057849	-0.30994	0.799616	0.17476	-0.29863	0.058281
X2	0.473534	-0.35103	-0.14192	0.079903	-0.05099	-0.02055	0.1905	-0.76597
X3	0.441702	-0.348	-0.0751	0.141028	-0.06287	-0.27069	0.480141	0.592037
X4	0.304974	0.516903	0.267075	-0.26517	-0.4052	-0.56851	-0.04373	-0.09415
X5	0.044526	-0.17714	0.939027	0.229857	0.059206	0.156681	0.051325	-0.03667
X6	0.268171	0.674638	-0.06898	0.34552	0.23448	0.369711	0.395817	-0.02165
X7	0.382081	0.000614	-0.10644	0.536943	-0.21265	0.084802	-0.69213	0.151403
X8	0.360308	-0.04276	0.041054	-0.58892	-0.29355	0.635721	-0.06111	0.160594
Eigen value	2.953575	1.03256	1.017932	0.843751	0.683888	0.623917	0.568405	0.275973

Source: Author Calculation based on Field Survey data 2016.

Table 1: Coefficients and eigen values based on normalized value of relational capital items.

Relational Capital Variables	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Sharing of technology knowledge	27.6667	8.395	0.467	0.677
Relations with customers	27.5333	9.202	0.61	0.645
Relations with suppliers of inputs	27.5333	9.711	0.562	0.66
Informal relations with firms in the cluster	27.5333	9.779	0.398	0.688
Linkage with external bodies	28.0667	11.555	0.051	0.751
Location	27.4833	10.22	0.325	0.703
Trust good faith relationship	27.3667	9.524	0.471	0.673
Reputation	27.4333	9.945	0.447	0.679

Source: Author Calculation based on Field Survey data 2016

Table 2: Item-total statistics.

3. Being close to Calcutta the firms do not have to face great problems in marketing their product. The roads being in good condition, the entrepreneurs also have relatively easy access to mahajans. However linkage with external bodies is given least importance in their perception. This is probably because the enterprise owners are mostly linked with respective mahajans with respect to their subcontracting relationship. Hence they hardly have to bother about the conduct and relation of external agencies that might exist. Further the work being mostly of stereotyped fashion, the owners do not attach much importance to it. However sometimes it is found that some long term workers in a particular enterprise leave laboring job and engage in some other enterprise or launch individual enterprise on his own effort or by hiring some labor. This provides some scope of knowledge percolation or sharing (Table 3).

The regression equation is fit to assess the impact of the chosen components of relational capital on the firm performance level measured in terms of profitability. The results of regression equation are given in Table 4. It is observed that the sign of the coefficient of variable “shared knowledge” is expectedly positive, its value being 0.026 and it makes significant impact on the variation of log value of profitability. This is indicated by its t value and level of significance ($t=2.174$, $p<0.05$). Similarly sign of coefficient of the variable “customer capital” is also in the desired positive direction, with a value of 0.045, it is also significant ($t=1.846$, $p<0.10$). Again there is expected positive sign associated with the variable, “relation with supplier of inputs”, which is however insignificant. The sign of the coefficients of the variables “Informal relation with other firms” is as expected positive and also significant ($t=2.573$, $p<0.05$). Again, the sign of the coefficient of the variable “location” is found to be in the expected direction which is

also significant ($t=2.969$, $p<0.01$). Reputation has also direct significant impact on performance level as indicated by $t=2.04$, with $p<0.05$. The overall regression is found to be good fit with R^2 value as 0.634, and F value being 11.041 which is significant at 1% level (Table 4).

Further the regression coefficient of firm performance on overall index of relational capital appears to be 0.58 which is significant at 1% level (the corresponding R^2 value being 0.586 and F being equal to 82.09). The correlation coefficient between log value of firm profitability figures and that of relational capital indices turns out to be 0.765 which is significant at 1% level. The implication is that relational capital has significant influence in shaping firm performance.

Concluding Remarks

The above analysis reveals that there is reasonably good internal consistency of relational capital indicators. Again it is important to note that if the indicator like “Linkage with external bodies” is deleted, the value of Cronbach’s alpha increases. This reflects the relative incoherence of this indicator. From the analysis of the value of perception about the relational capital variables and the regression results, it may be noted that reputation, location of the firms in the cluster, customer relationships, informal relationships with firms in the cluster have relatively high mean values and significant impact on the per capita profitability. This finding is completely in the desired direction. However while mean value of trust and good faith relation has rank 1, this is found to be insignificant and while that of technological knowledge sharing has rank 7, it is observed to be significant in influencing firm level performance. Trust and good faith are considered to be a cornerstone for long persistence of activity in a cluster based enterprises.

However mere mutual trust may not be reflected in productive activity of the firms leading to profitability. Knowledge sharing here is perceived to be relatively unimportant. Since almost all the firms produce articles of the same type/use same type of technology, there is neither attached great importance nor it is perceived necessary for sharing of knowledge. However, evenness of knowledge leads to competitive spirit and better quality that is reflected in significantly better profitability performance. Again the bell metal firms in this region have a long tradition of enterprise based production. The supply of their output in the market through the chain link of mahajans, clustering of a number of skilled enterprise owners in a small neighborhood and their earlier link with Moradabad group of firms and inclination to excel their production quality have helped spread their reputation. There has therefore been a favorable perception about the informal relation across the firms in the cluster. Because of geographical proximity to metropolitan market at Calcutta, the locational advantage of the cluster is also considerable.

It is however heartening for the firms to maintain good relation with customers. Maintaining customer repeat rates, stable prices along with good product quality as well as uninterrupted supply of output are some of the factors that contribute to the fostering of good relation with customers. The enterprise owners however do not have to bother much about maintaining good relation with the suppliers of inputs. The input suppliers are mostly mahajans and for their own interest, they subcontract production orders with partial/full scale supply of necessary inputs.

Overall, the analysis suggests that relational capital is connected with the competitive performance level of small enterprises operating in the bell metal sector in the study region, through the positive relationship of its subcomponents. Moreover, higher the level of relational capital

Relational Capital Variables	Mean	Standard Deviation	Rank of Mean
Sharing of technology knowledge	3.85	1.03	7
Relations with customers	3.98	0.7	4
Relations with suppliers of inputs	3.95	0.62	6
Informal relations with firms in the cluster	3.96	0.76	5
Linkage with external bodies	3.45	0.69	8
Location	4.03	0.73	3
Trust good faith relationship	4.15	0.75	1
Reputation	4.08	0.67	2

Source: Author Calculation based on Field Survey data 2016

Table 3: Perceived status of relational capital items.

Independent Variables	Coefficients	t	Sig.
(Constant)	7.041 [*]	63.49	0
Sharing of technology knowledge	0.026 [*]	2.174	0.034
Relations with customers	0.045 [*]	1.846	0.071
Relations with suppliers of inputs	0.004	0.176	0.861
Informal relations with firms in the cluster	0.041 [*]	2.573	0.013
Linkage with external bodies	0.025	1.577	0.121
Location	0.048 [*]	2.969	0.005
Trust good faith relationship	0.001	0.066	0.948
Reputation	0.038 [*]	2.04	0.047
R^2	0.634		
F	11.041 [*]		
Durbin-Watson	1.01		

Source: Author Calculation based on Field Survey data 2016 ^{*}Indicates 1% level of significance

Table 4: Regression results of firm performance.

and its associated spillover, better is likely the result in problem solving, planning and management quality of a firm, which over the long run can enhance competitive efficiency and reduce organizational cost.

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