Does the Social Capital Matters in Buyer-Supplier Relationships? A Thai Perspective

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***Abstract*-The main objective of the current study is to investigate the influence of the social capital theory in the relationship between buyer and supplier relationship. The study is of the view that the there are certain managerial implications of social capital in terms of buyer supplier relationships, therefore, considering these, significant resources are invested by the buyers to generate social capital along with its suppliers. Thus, a social capital which is earned after huge efforts may sometimes result in poor decision making, opportunistic behaviors, and loss of objectivity. The study has used the survey-based methodology and examined the manners or the Thai Petro chemical firms Considering a buyer supplier relationship, we attempt to theorize social capital contradiction and empirical evidence is presented for the social capital and performance relationship as a curvilinear relationship at inter-firm level. The results of this research are found to be in line with a few recent researches which examined the impact of this curvilinear relationship at group, network, or individual level. The findings suggest that social capital and performance relationship has an inverted curvilinear relationship. The empirical findings indicate that in case of buyer-supplier collaboration for gaining strategic benefits, more time is consumed for making it to the threshold level, as compared to the case of operational benefits.**

Keywords; *Social capital, Supply Chain, Thailand*

1. Background

The Supply chain management (SCM) literature provides a clear understanding about collaborative buyer-supplier relationship (BSR) value [30-32]. Several SCM scholars [1] have attempted to analyze how social capital adds to the value creation of BSR partners. They also suggested that social capital creation among suppliers and buyers enable both parties to get access and gain advantage from the existing resources. In addition, social capital tends to minimize the occurrence of any conflicts and encourage collaborative actions, since social capital relates with developing trusted relations, social ties, and shared vision. Thus, the literature on SCM has primarily emphasized upon bright side or benefits of social capital. Although, the negative effects and the associated risks of social capital also need to be considered, referring it to be the dark side or disadvantages of social capital. Besides, a number of strategy scholars and sociologists have also warned about the social capital's dark side [2, 3]. According to [4] and [1], there are certain managerial implications of social capital in terms of BSRs, therefore, considering these, significant resources are invested by the buyers to generate social capital along with its suppliers. Thus, a social capital which is earned after huge efforts may sometimes result in poor decision making, opportunistic behaviors, and loss of objectivity [5]. In addition, in BSRs, irrational demand to generate greater social capital may result in frustrations and waste of resources, furthermore, indiscriminate social capital promotion can negatively affect the performance, instead of enhancing it.

The current research aims to observe the collaborative BSRs taking into account both the dark and bright sides of social capital generation. A few leading firms are trying to incorporate this view. Such as, Johnson Controls Inc. and Toyota have been collaborating since 1984, the time when Toyota stepped in Georgetown for manufacturing its best seller Camry Sedans. Although, nowadays, both companies are re-evaluating their collaborative long-term relationship. JCI and Toyota are dropping off their partnership in a joint-venture i.e. Trim Masters. Given that, JCI appears to pursue greater autonomy for discovering potential ventures and customers, whereas, Toyota appears to strive for higher seat suppliers' competition, thereby, accepting their complicated long-term relationship. Therefore, this study attempts to analyze the dynamics of such relationships, i.e. how such BSRs generate values and develop relational inertia, thus obstructing the capacity of partnering firm towards satisfying the continuous market demands.

Therefore, in this study, a SCM literature is considered with respect to collaborative BSRs, and developed a single model keeping in view both its dark and bright sides. This is done by theoretically and empirically testing the social capital concept. As in previous researches, generating social capital in buyer-supplier dyad initially creates positive effect on the performance of a buyer. However, this study proposed that buyer-supplier collaborations and

social capital accumulation are based upon diminishing returns, i.e. social capital's value and rate of benefits begin to decline with the increase in social capital costs and risks associated with it. Resultantly, we put forward a proposition that performance enhancement which is led by social capital accumulation takes place until increasing costs and risks counterbalance the potential benefits obtained through it, after this point the performance of buyer will start declining. Therefore, it is suggested that performance and social capital relationship exhibits a curvilinear relationship, which clearly explains the reasons why some researches have failed to exhibit performance gains through collaborative BSR mechanisms. In addition, several prior researches have confined their analysis to the structural, or relational, or a combination of relational and structural dimensions of social capital [1]. However, only few researches attempted the investigation of all three social capital dimensions, particularly in a single model [6]. This paper attempts to jointly assess three social capital dimensions i.e. relational (friendship, respect, reciprocity, and trust), structural (social connections), and cognitive (shared goals and culture), with an aim of addressing various means through which social capital affects the performance outcomes. Furthermore, majority of the researches conceived potential social capital benefits within the context of operational performance. Although, buyers in reality strive to progress through higher goals to achieve greater performance within buyer-supplier relationships [7, 8]. Thus, besides operational performance measures, we also observe strategic benefits such as establishing new products and markets. For this purpose, a detailed examination of social capital generation with supplier collaboration and the performance gain of buyers is performed. This paper is presented as: next section includes literature review about performance and social capital, afterwards, hypotheses are presented which are formulated on the basis of how social capital dimensions influence buyer performance. Thus, a buyer-supplier relationship is taken as a unit of analysis.

The research methodology involves discussion about how subjective and objective data is obtained from 237 Thai companies and also include discussion about statistical analysis and methodology. The findings suggest that social capital and performance relationship has an inverted curvilinear relationship. The empirical findings indicate that in case of buyer-supplier collaboration for gaining strategic benefits, more time is consumed for making it to the threshold level, as compared to the case of operational benefits. Lastly, the managerial implications and theoretical implications are presented and discussed followed by the suggestions for future research potentials.

2. Hypotheses development

Besides social capital value creation for the suppliers and buyers, a number of strategy scholars and sociologists also mentioned dark side of social capital generation. It has been argued that the eagerness for its bright side may sometimes overlook the social liability and harmful effects of social bonds [3]. Such as, the correlation with suppliers may result in lower flexibility of buyer in decision making [3]. This may limit the ability of buyers to rapidly adapt or effectively respond to changes in environment, which may result in damaging effects to its performance. The most simplified supply chain of petrochemical industry is shown in the figure 1.

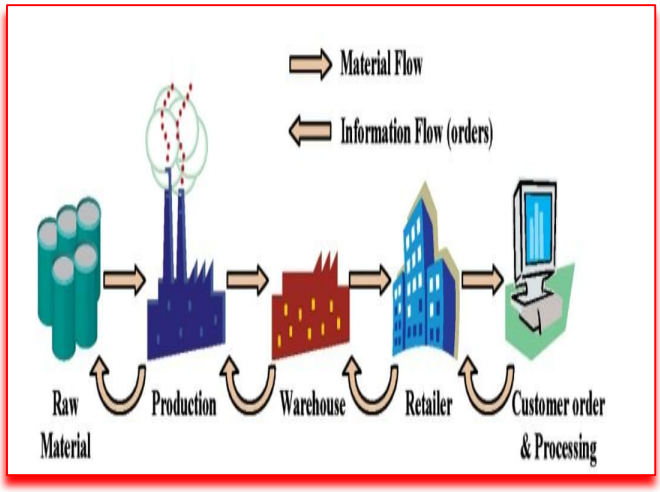

Figure 1. Simplified supply chain of petrochemical industry

The social capital's inbuilt rigidity could simplify the reasons why a few empirical researchers have failed to find a significant association among performance and collaborative mechanisms. Therefore, we postulate on the basis of previous academic researches that there are dark and positive sides of social capital [2, 3]. Although, social capital-based connections are more likely to expose to diminishing returns. However, the rate of benefits may decline with the increase in social capital, due to inherent rigidities associated with social capital. A threshold level must be set beyond which the social capital rigidities would neutralize its benefits, and after which there would be a decline in buyer performance. Thus, it is suggested that the underlying performance and social capital association is unexpectedly as simple as the linear model. Rather, three social capital dimensions observe a curvilinear association with performance, showing that how social liability takes the place of social capital in buyer-supplier relationships.

3. Cognitive social capital

Establishing cognitive social capital begins with positive influence on the performance. in view of [6], this

form of social capital provide assistance in exchanging resources, since both supplier and buyer could estimate resource combination's and integration's potential value. Furthermore, cognitive social capital also offers framework to understand their joint objectives and behavioral norms, which may enhance their commitment towards seeking benefits from collaborations and minimize chances for any clashes [9, 10]. Thus, it improves the willingness of suppliers and buyers for making joint efforts toward strategic and operational performance improvement. The strategic benefits arise as a result of discovering potential and new opportunities for value creation and adopting additional risk and investment which may enhance the competitiveness, particularly in the long run. Alternatively, the operational benefits are observable through cycle time, such as delivery, flexibility, cost, and quality. Thus, cognitive social capital extends a shared vision towards supplier and buyer which enhance their level of commitment for completely benefiting from collaborations while impeding unacceptable actions and behaviors during a BSR. Although, performance may suffer as a result of increase in social capital, due to the occurrence of isomorphism and groupthink phenomena [2].

Buyer and supplier have similar thinking which can be risky, since it can minimize the buyer-supplier capacity of constructing and exploring challenging questions and their solutions, which ultimately result in making disastrous choices. Simply put, the mental models and routines which arise from the cognitive social capital cause inflexibilities and prevent buyers and sellers from creativity and independent thinking, which may result in collective blindness [1]. In addition, buyer and supplier could not properly concentrate on the ongoing operations and daily activities when their relationship reaches to the level of maturity. Therefore, promoting continuous learning may further lose the significance of BSR [9]. Hence, in that situation, supplier and buyer may experience continuous learning and lack of creativity which cause damaging effects to the performance and also takes in costly investments for the successful creation of cognitive social capital. Therefore, at the beginning, increase in cognitive social capital tend to improve performance, and when it reaches to the higher social capital, high-cost investment is required for generating cognitive social capital involving stronger risks of isomorphism and groupthink, which may have detrimental effects on the performance of the buyer. It means that improvement in buyer performance would start declining and then eventually collapse. Therefore, a threshold must be set and after that level the buyers' performance begins to slow down, since cognitive capital's negative outcomes may balance out the benefits obtained through it.

Hypothesis 1: the cognitive social capital is in significant relationship with the buyer performance.

3.1 Relational social capital

In BSRs, relational social capital facilitates the process of enhancing performance. Therefore, friendship, reciprocity, respect, and trust act as essential SC collaboration requirements [3]. These factors also play crucial role to increase buyers and supplier's willingness for mutually cooperating and minimizing monitoring costs. For instance, the relational capital extends certain incentives for taking part in value-added initiatives, allows access to key resources, and also increase both parties' willingness for seeking improved and new initiatives [2, 3]. Furthermore, several empirical researches pointed out advantages arising from relational capital, such as improved flexibility, quality, cost, innovation and productivity [11]. Therefore, the willingness of buyers and suppliers may improve through relational capital creation, thereby enabling them to assume greater investments and additional risks for achieving strategic and operational benefits.

However, excessive trust among the buyer and supplier may result in putting less efforts by the buyer to monitor, and vigilantly safeguard to a level that supplier may act inappropriately with the buyer. According to [12] relaxation in operations control enables supplier to benefit more from the buyer. This would enable supplier to successfully achieve its goals, even without putting in maximum efforts and remain self-satisfied with the given role. Moreover, if suppliers feel secured about their business interests then they feel less motivated for achieving higher performance. According to [13], a carefully designed system can be developed by the supplier to dodge buyer even after being a part of close social relations. Meanwhile, due to less monitoring, there may be less chances for the buyer to detect cheating and objectively accept the decline in performance, which slows down the response time of taking corrective actions, thereby forcing buyers to accept further decline in performance [12].

Furthermore, several researchers [2, 14] have argued that reinforcing reciprocity norms may result in irrelevant obligations to restrict choices and utilize resources above the optimal level Therefore, reciprocity norms may persuade buyer to address the suppliers' demand or provide assistance to the supplier, even if the buyer had already anticipated some advantages from future trade-offs. [15] suggested that a fear of damaging relationship with the supplier occurs arise as a result of buyer's emotional attachment with the supplier or as a result of its concern for negatively influencing its reputation in case of possible future associations among other suppliers. However, such reciprocity norms can be negatively used

by supplier resulting in the decline in buyer performance. Therefore, beyond the optimal point, making further investment for relational capital formation may give inefficient outcomes. As a positive association is assumed to exist between performance and relational capital, therefore we expect a decline in performance with the increase in relational capital.

Hypothesis 2: the relational social capital is in significant relationship with the buyer performance.

3.2 Structural social capital

Establishing a social capital structure plays an essential role in obtaining BSR benefits. [16] stated that promoting buyer and supplier interactions between multiple contact points may result in reliable and diversified information. A buyer who promotes such interactions among the suppliers and operations personnel will also lead to share information which is beneficial for quickly synchronizing the inter-firm operations and for resolving problems [2]. Similar to the case of top management, encouraging frequent interactions develop closer associations which stimulate the process of establishing common strategies and sharing sensitive information. Therefore, unique opportunities are discovered when a buyer in collaboration with the supplier creates social capital at various hierarchical levels. At a higher BSR level, there comes a point when additional information value starts declining. Thus, according to [16] at this point, exchange of information may seem unnecessary and may create more difficulty in the decision-making process when there is greater information availability.

Moreover, interacting frequently with same supplier may restrict the ability of buyers to seek for more capable and potential suppliers because of loss in confidence and information processing restrictions [16]. Although. Excessive interaction also diminishes the ability of a buyer to participate in those activities which are essential for enhancing performance. Thus, in view of scholar, exchanging information beyond the managers' processing capacity can result in confusion and stress among critical or non-critical relationship, consequently, declining the process of successful decision-making. Excessive information exchange also puts a cognitive burden upon those decision makers which exclusively possess only a limited information processing capacity. Therefore, buyers must accept that during a BSR, promoting buyer-supplier interactions does not suggest that all the additional information is relevant and needed for current decision making. Thus, a threshold must be there at which the information complexity, investments, and redundancy may offset the benefits obtained through structural capital creation.

Therefore, buyer performance is expected to improve initially in the form of improvement in structural social capital, where, structural capital facilitates to provide diverse and valid information for successfully speeding up the process of resolving problem, achieving coordinated processes, and establishing common strategies. The marginal benefits arising from more information may start declining with the increase in structural capital, in extreme situation, it may result in negative outcomes due to increased difficulty in taking decisions, huge investments on resources for sustained and diverse interactions, and lack of learning because of extensive information.

Hypothesis 3: the relational social capital is in significant relationship with the buyer performance.

3.3 Performance and social capital

It is postulated in this study that when buyer strives for obtaining strategic benefits, a curvilinear relationship among performance and social capital tend to decline at lower pace as compared to the situation when buyer aims for operational benefits. This happens because 1) obtaining strategic benefits involve more risks in comparison with operative benefits case, as supplier and buyer take more risks and also require more capital for their relationship [17]. Putting differently, the explorative activities, involve greater risk, as compared to exploitative activities, as they are specifically developed for improving the existing set of processes and products. In addition, explorative activities demand greater commitment for sharing goals and values, due to more risky investments. Similarly, [18] suggest that keeping in view the difficulty to observe explorative activities, greater level of respect, reciprocity, and trust are required. Meanwhile, for the effective deployment and successful identification of opportunities, frequent social interactions are essential to perform explorative processes. Thus, promoting these kinds of risky activities facilitate in obtaining strategic benefits, whereas, additional capital is required in case of operational benefits. This indicates that reduction in strategic benefits sets in more slowly during social capital generation, and therefore, requires more time for reaching to the dark side; 2) Obtaining strategic benefits require more time than in case of obtaining operational benefits, which indicates that strategic benefits take in more social capital in a buyer-supplier relationship. Such as, explorative processes include, establishing new ways and experimenting new alternatives for value creation, and alternatively, exploitative activities include extension and refinement of established competencies, paradigms, capabilities, and technologies [7]. Simply put, using explorative activities for obtaining strategic benefits require those actions which provide new designs for organization, markets or technology and in turn provide benefits for a longer time, whereas, using exploitative activities for obtaining operational benefits require those actions which demonstrate and refine the organizational

benefits, only for immediate period of time. It shows that gaining strategic benefits using explorative activities takes more time to achieve collaborative potential. Besides, it is also essential to achieve higher social capital which generally requires more time to make it to the dark side of social capital.

And lastly, outcomes obtained from explorative processes such as, new product development depend largely upon market dynamism in contrast to the exploitative activities which deal with emerging technologies, institutional forces, and competitor's activities in the market. [19] have argued that there exist a number of external forces which essentially contribute to the successful achievement of explorative activities. Thus, in order to address the ever-changing demand of customers and external forces, higher supplier flexibility is needed. Hence, a higher social capital is required for achieving strategic benefits, indicating that buyer would need longer time to make it to the threshold point for seeking strategic advantages.

Hypothesis 4: the social capital increase is in significant relationship with the buyer performance.

Hypothesis 5: the social capital increase mediates the relationship between structural social capital and the buyer performance.

4. Methodology

The following section provides the data analysis including the illustration and discussion about the research findings. For the purpose of data analysis, the Structural Equation Modeling is used in this study. The Structural equation modeling is a statistical multivariate technique for analyzing the structural associations. It is a combination of multiple regression analysis and factor analysis and is generally employed to analyze the existence of structural association between the measured and the latent constructs. Researchers prefer to use this method because it is capable of estimating multiple as well as interrelated associations in a single analysis [20]. After the selection of methodology, sample collection was done using a method of cluster sampling. For the sample size estimation, the first step is the total population determination. The sample size for this study is determined using [21] sample size table. [22] suggested that the required sample size for a study depends upon the type of research i.e. experimental, descriptive or correlational. The estimated population size is 12000 and the selected sample size is 700. Thus, 386 survey questionnaires were distributed, and 269 questionnaires were received back, thus the response rate came out to be 55%, which is above the threshold level (45% -50%). The present study has chosen SEM as it is a second-generation statistical technique, providing robust results. Besides, SEM-PLS allows the statistical modeling and estimation of complex phenomena. Therefore, became the most preferred method to assess the theoretical models under quantitative researches. It enables researchers to assess the complex and advanced theoretical models without much dependency on statistical methods. Finally, SEM software is also user-friendly, just as other Window-based software. The above reasoning was also supported by Hair, Hult [20]. SEM model consists of formative and reflective constructs. The objective is to determine the prediction among the constructs. For many years, researchers have been using EQS, AMOS, and LISREL as the software tools for performing such analysis. However, PLS-SEM is a useful alternative to CB-SEM, with distinctive methodological features.

5. Results

The Measurement model shows the relation among the observed and the latent variables. In estimating the measurement model, changes occur in all items of the model. Therefore, strong correlation is expected to exist between variables and are combined to form a construct. In order to confirm the validation of measurement model i.e. how well the observed variables represent the constructs, Confirmatory Factor Analysis is done. Under CFA, first and second order constructs are estimated. During estimation of the measurement model, all elements are separately analysed using reflective, formative, and structural modeling.

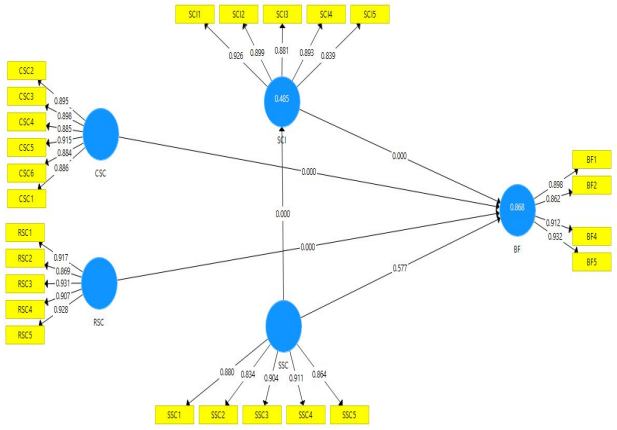

Figure 2. Measurement model

Discriminant and convergent validity are assessed in the first part. Composite reliability Average Variance Extracted, and factor loadings are used for examining the convergent validity. As suggested by literature, the value of factor loading for every element must not be greater than 0.4. In the similar way, the value of composite reliability must be greater than 0.7 and that of AVE to be lesser than 0.5. Table 1, 2, and 3 and figure 2 shows the results of assessment for inner model. The results reflect that the value of AVE is greater than 0.5 and value of

composite reliability is greater than 0.7. Some elements in factor loadings with value less than 0.4 were removed to obtain the satisfactory level of validity.

Table 1. Outer loading

	BF	CSC	RSC	SCI	SSC
BF1	0.898				
BF2	0.862				
BF4	0.912				
BF5	0.932				
CSC2		0.895			
CSC3		0.898			
CSC4		0.885			
CSC5		0.915			
CSC6		0.884			
RSC1			0.917		
RSC2			0.869		
RSC3			0.931		
RSC4			0.907		
RSC5			0.928		
SCI1				0.926	
SCI2				0.899	
SCI3				0.881	
SCI4				0.893	
SCI5				0.839	
SSC1					0.880
SSC2					0.834
SSC3					0.904
SSC4					0.911
SSC5					0.864
CSC1		0.886			

The composite reliability value for the variables has been shown in table, which reflects that the range of the values is 0.844-0.985 and these values are greater than 0.70 making it acceptable. Therefore, the reliability in the research is acceptable.The convergent validity has been described by [23] at the level with which an item is determined by multiple items. The convergent validity has been determined in this study based on the AVE as per the support of [24]. It is recommended that the value of AVE should be greater than 0.5 and any value lesser than 0.5 should be eliminated to improve the value of AVE.

Table 2. Reliability

	Cronbach's Alpha	rho_A	CR	(AVE)
BF	0.923	0.924	0.945	0.813
CSC	0.950	0.951	0.960	0.799
RSC	0.948	0.952	0.960	0.829
SCI	0.933	0.934	0.949	0.789
SSC	0.926	0.930	0.944	0.773

Fornell-Larcker criterion of discriminant validity is a powerful measure and has been widely used by the researchers in studies. Discriminant validity measures the association between reflective variables and their constructs. Generally, it operationalizes the variables that are involved in the model. Thus, the current study incorporated this as a threshold for assessing discriminant validity. Value for reliability index is expected to be 0.70 or above. Thus, the value for outer-loadings and cross-loadings turned out to be the same. Since cross loadings analyse the presence of correlation among the constructs, therefore, current study has examined the discriminant validity between the variables and constructs, as shown in table 3.

Table 3. Validity matrix

	BF	CSC	RSC	SCI	SSC
BF	0.901				
CSC	0.774	0.894			
RSC	0.770	0.892	0.911		
SCI	0.721	0.791	0.750	0.888	
SSC	0.725	0.710	0.815	0.696	0.879

The second step in the PLS method is to assess the outer model, which is the structural model. as per the recommendations of Henseler, Hubona [25], the effect size, value of R2, Path coefficients, predictive relevance and moderating effect has been determined to evaluate the outer model. The structural model of the study has been represented as below:

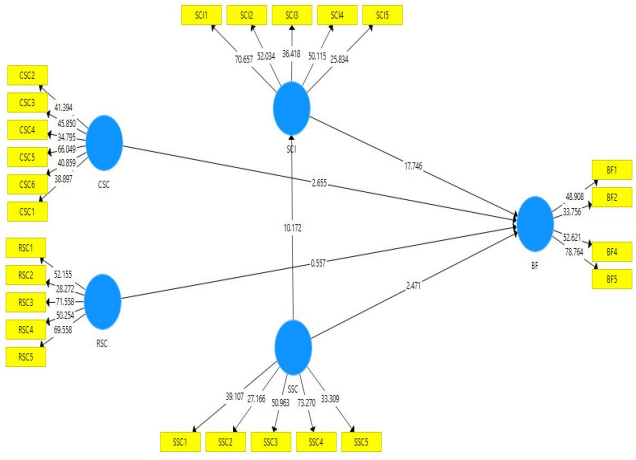

Figure 3. Structural Model

For determining the path coefficient significance, the procedure of standard bootstrapping has been used. A sample based on 237 cases and 5000 bootstrap has been used [20, 25, 26].

Table 4. Direct relations

	(O)	(M)	(STDEV)	T Statistics	P Values
CSC -> BF	-0.217	-0.217	0.082	2.655	**0.004**
RSC -> BF	0.056	0.065	0.100	0.557	**0.289**
SCI -> BF	0.829	0.822	0.047	17.746	**0.000**
SSC -> BF	0.872	0.864	0.121	7.231	**0.000**
SSC -> SCI	0.696	0.698	0.068	10.172	**0.000**

Table 4. Indirect relation

	(O)	(M)	(STDEV)	T Statistics	P Values
SSC -> SCI -> BF	0.577	0.572	0.047	12.280	**0.000**

In PLS-SEM method, the main criteria for the determination of structural model are the variance in the dependent variable represented by R^2 [26]. It shows the variation in the dependent variance because of the independent variable [20]. The value of R square is considered weak, moderate, and substantial when it comes out to be 0.24, 0.50, and 0.75.

Table 5. R-Square

	R Square
BF	0.868
SCI	0.485

Blindfolding procedure is the only estimate of the dependent latent variables having a model with multi dimensions [27]. Latent variable is described as reflective measures that lead to difference in indicators' set. The nature of study is reflective and blindfold method has been used. A cross-validated measure of redundancy has been used to evaluate the research model's analytical significance (Q^2) [20, 27].

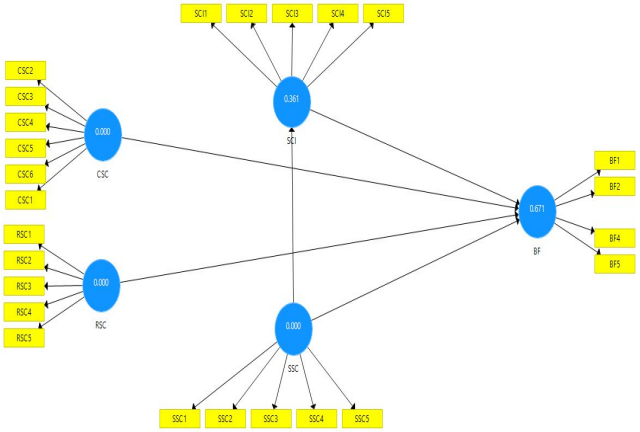

Figure 4. Q-square

Table 6. Q-square

	SSO	SSE	Q^2 (=1-SSE/SSO)
BF	868.000	285.984	0.671
CSC	1,302.000	1,302.000	
RSC	1,085.000	1,085.000	
SCI	1,085.000	693.464	0.361
SSC	1,085.000	1,085.000	

6. Discussion and conclusion

The current study made a number of contributions to the literature of SCM. Firstly, besides other few studies, it attempts to analyze collaborative BSRs from dark and bright sides. This study pointed out why it is important to theoretically observe diminishing returns while making social capital investment in BSRs. Secondly, in a single model, three social capital dimensions are integrated and analyzed which has not been done so frequently in prior researches. Since, incorporating all social capital dimensions facilitates in understanding unique effects of each of these dimensions on the performance. Moreover, findings of the study have shown that relational capital or strength of social relations cause greater marginal influence as compared to the contacts diversity and frequency (structural capital), in addition, results have also shown linear association among performance and cognitive capital or shared vision. Thirdly, systematic performance measures have been used which enable to create systematic view, i.e. in what ways process of value creation is hindered or successfully achieved through social capital. Results also indicate that while working in collaborative buyer-supplier relationship to obtain operational advantages, a diminishing returns point will come comparatively faster in contrast to strategic benefits case. The current research also plays contributory role in social capital theory through observing its dark side at inter-firm level. Various scholars [6], have repeatedly demanded to conduct research in this area, however, only a few researchers have made efforts to empirically contribute in this area. Considering a BSR, we attempt to theorize social capital contradiction and empirical evidence is presented for the social capital and performance relationship as a curvilinear relationship at inter-firm level. The results of this research are found to be in line with a few recent researches which examined the impact of this curvilinear relationship at group, network, or individual levels [28, 29].

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