

Social Capital Predicting the Supply Chain Skills: Mediating Role of Access to Information and Network Resources

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Abstract— Knowledge, skills and abilities are the core of success for individuals and organizations as well. The study attempted to examine the predictors of the supply chain skills. The data were collected from the employees of hospitals specifically working in the supply chain departments. Data were collected by using the self-administered questionnaire. Smart-PLS has been used for data analysis. The study results have revealed a significant positive relationship between social capital and supply chain skills. Furthermore, the study results also showed access to information and network resources as a significant mediators between the relationship of social capital and supply chain skills. It is concluded that managing the relations at work will tend to produce positive outcomes for an organization. Future directions and limitations are provided at the end of research paper.

Key Words: healthcare, social capital, supply chain, skills, knowledge, ability

1. Introduction:

Globally due to the increasing competition the supply chain environment has also been affected and became more dynamic as compared to previous decade [36]. Nowadays, supply chain asks for more dynamic employees and skills to be productive. Notably, the dynamic environment of supply chain has resulted in skills shortage and now they have gained immense importance both from the academics and practitioners. Furthermore, it was also added that advanced and innovated supply chain industry is important which can enable and make the economic growth sustainable [1].

It is worthy to note that supply chain management has gained immense importance over the years and has gained much more attention from the academics and practitioners [37]. Supply chain management is inclusive of various practices such as transportation, forecasting, warehousing, purchasing raw materials and packaging etc. To effectively manage the supply chain functions it asks for some certain set of skills which enable the effective functioning of the supply chain.

Nowadays with the increasing importance of supply chain the required set of skills for supply chain has also emerged to be a significant concern for the today business world. Regarding the supply chain skills shortage it was argued that supply skills shortage is a critical issue and emerged to a significant concern for modern business environment. Although it is not a new problem but it exists globally and it is observed in developing and developed economies. A study was conducted in which 39000 employees from 33 countries were considered and the study results reported that 30% of the employers face difficulty to recruit a staff because of lack of talent [2].

Healthcare sector is facing difficulties to manage it resources. It is concerned about providing the optimal care to the patient while managing the resources. This has shifted the focus from resources to mutual relationships in the hospitals. This served as a primary reason to choose the healthcare as a point of concern for the study [3]. Healthcare is one of the important sectors of the Thailand.

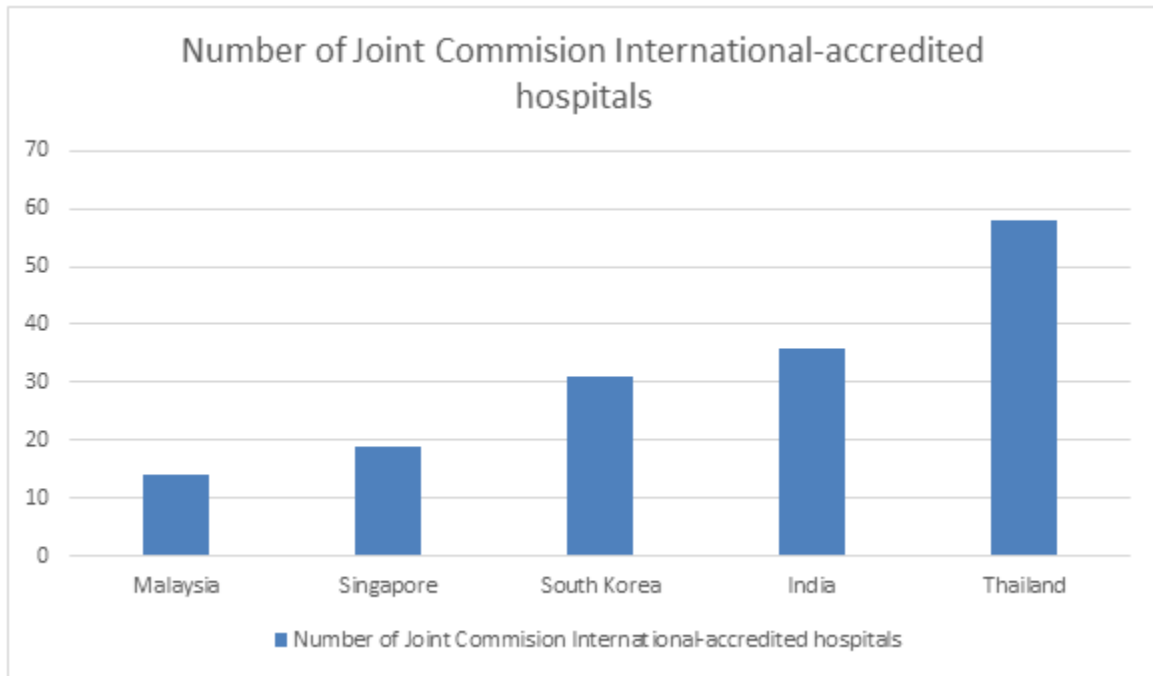


Figure 1:

Sources: [4]

Following figure is showing that Thailand is following the maximum healthcare standards as compared to other countries in region.

In the domain of supply chain mutual relations and their nature among the partners is being stressed. They are supposed to play a vital role in overall success of supply chain. Frequently it is argued that the mutual relationships between the supply chain partners are of significant importance as they can drive the optimal outcomes of the supply chain. Following this rationale the present study has considered the social capital as a potential determinant of supply chain skills. In this regard it was argued that the social capital is construct which been widely discussed in the domains of management, economics and sociology [5]. Thus, it makes it worthy to consider the social capital in the domain of supply chain management.

Recently, majority of the firms have faced the problematic issues regarding the human resources. There may be different types of issues such as anger, frustration, and deviance etc. It is important to discuss the issues related to the people especially in the supply chain. In this regard it was argued that the human related issues in supply chain has not been widely discussed in the domain of operational supply

chain and literature is silent on this issue to some extent [6]. Therefore, the current study has considered the social capital toll fill up the research gap in the domain of supply chain management. Supply chain is the point of concern for the study as it has emerged to be the significant factor in the organizations and is being paid high attention from both the researchers and policy makers [7].

Most importantly, organizations have recognized the supply chain as an important factor and guideline for their businesses which can significantly influence their performance [8, 40]. It is accepted that supply chain is an important aspect of organizations. Besides this the personal relationships are also getting much attention in supply chain which has triggered the importance of supply chain skills in this domain. Regarding the importance of social capital in the perspective of supply chain it was argued that it is necessary and urgent need to invest in talent to develop necessary skills and abilities in order to effectively handle the supply chain complex matters [9].

In addition it was argued that good amount of research is available and being done in the domain of supply chain skills and competencies. Still there is less empirical evidence available on the supply chain

skills which warrants more study on this topic. There is urgent need to fill up the research gap as the risk associated with the supply chain skills lack cannot be ignored anymore, specifically in the era of rapid developments. In this regard it has also been stated that the academics in the domain of supply chain has not completely captured the human resource and behaviors. Further it was also argued that nowadays firms are confronted with serious issues related to the supply chain as compared to previous business settings [10]W. Considering the research gaps previously mentioned the present study has considered the social capital as a potential predictor for the supply chain skills. The purpose of the study is exploring the contributors of the supply chain skills and answer the following research questions:

2. Literature Review

2.1. Supply Chain Skills

Supply chain skills have gained much attention in the recent years due to the increasing role of effective supply chain management and behavioral issues in supply chain. Previous literature has indicated that the supply chain skills are of two types; one of them are the soft skills whereas the other one are the hard skills. Hard supply chain skills are more concerned with the operational functions whereas the soft supply chain skills are more concerned with the relational aspects of supply chain [11]. Supply skills are important for the organization as these skills do improve the organizational functioning and offers the organizations with the better edge to compete with the others. This argument has been supported by the previous study which has argued that the hard and soft supply chain skills when combined provides an organization with competitive advantage [12]. Both the hard and soft skills are important but the focus has shifted on the soft skills in the recent 20 years. With the increasing focus on the behavioral aspects the soft skills are more stressed in both the academic and industrial domain [13]. Soft skills of supply chain can be defined as “abilities and traits that pertain to personality, attitude, and behavior rather than to formal or technical knowledge” [14].

Previously the research agenda was focused on the hard skills of supply chain as they were regarded to be more demanded by the employees [15]. Notably, the hard supply chain skills are associated with operational and managerial aspect of a firm [16]. The

1. Do the social capital influence the supply chain skills?
2. Do the access to information influence the supply chain skills?
3. Do the access to network resources influence the supply chain skills?
4. Do the access to information and network resources intervenes the relationship between social capital and supply chain skills?

The present study will be valuable for the policy makers and will provide future research guideline to the researchers as well. The next section of the study will elaborate the literature review on the variables in detail.

focus of the supply chain skills have shifted from hard skills to soft skills. It has been reported in previous study which has argued that once the primary focus was to gain the sourcing operational skills and they become the standard. But the soft skills acquisition has become the primary concern of the organizations [17]. Regarding the importance of the soft supply chain skills it was reported that future of supply chain lies in the acquisition and focus on the soft supply chain skills in order to assist the hard skills. As per the survey 72% of the Chief of Organizations have realized that soft skills are more significant for their businesses environment [18]. Besides the importance of soft skills there is less research available in the soft supply chain soft skills and their determinants.

2.2. Social Capital

Social capital is stated as an undeniable vague and intangible conception which has been generally admitted and defined as relations among the people and social groups. It is also considered an important factor for the economic advancement. It has been defined as “the idea that individuals and groups can gain resources from their connections to one another (and the type of these connections)” [19]. Researchers over the period of time has provided with several conceptualizations and different theories which do cover the domain of social capital. But still it remains difficult to appropriately define the social capital as it has been operationalized numerously. So far no universally accepted definition is available for

the social capital [20]. Even though social capital has been extensively defined and conceptualized still there is need to consider the social capital in the domain of supply chain. In this regard it is worthy to mention the definitions for the social capital in supply chain perspectives. Internal social capital in supply chain can be defined as “a set of relations characterized by a certain quality specified by principles and values common for all its participants, such as trust, involvement or cohesion, which aim at accomplishing common goals and common advantages resulting from them” [5].

Social capital is beneficial for organizations in number of terms. First of all it do limit the factor of vagueness which happens in the social and economic life. Social capital results in synergy which boosts the confidence and foresight. Thus, it has become important in the organizations. While on the other hand the lack of social capital tends to results in vagueness which hinders the way to progress in the financial actions and cooperation between the individuals and organizations. It tends to reduce the vagueness at the individual level as well which tends to result in better performance. It also tends to increase the financial investment's productivity in various ways.

Regarding the importance and contribution of social capital it was argued that it is an important part of the supply chain environment which do denotes the internal resources and also do influence the its operations and development as well. Social capital not only betters the society but it also plays a vital role in the firms as well. Therefore, it is stated that social capital do have an important place in the supply chain as well. It can smoothen the overall functioning of supply chain. Since various members are involved in the supply chain there must be collaboration between them to effectively carry on the supply chain operations which highlights the importance of social capital [5].

2.3. Access to Information

Generally speaking information sharing and access to it tends to develop the individual and organizational capabilities. When the knowledge is shared with the individuals it makes them more able to understand the tasks and perform them efficiently. Similar is the case with the supply chain as well. Information sharing in supply chain has become more important

and is extensively researched in domain of supply chain over the years [38-39]. Various scholars have admitted that when information is shared it will result in considerable cost reduction via effective inventory management and other measures [21]. Furthermore, it was argued that the information sharing has become an important aspect in the organizations which serves as a potential tool for their survival and enable the incorporation of all supply chain processes. To be competitive in today business settings information plays a vital role. There is strong need to create, maintain and disseminate the information to be successful in the business settings. In this regard it was argued that manufacturing sector plays a vital role in the economic growth and for the survival in the global economic conditions this sector needs to redefine the strategic orientation to cooperate [22]. When the information is shared it becomes available to all the individuals within an organization and also smoothen the flow of supply chain. When the employees are provided with the information and they do have the access to information; it tends to increase the overall supply chain skills from both the hard and soft aspects.

Previously studies have showed that the information access do result in supply chain skills enhancement. In this regard it has been contended that information ultimately creates a knowledge which is shared and tend to enhance the overall supply chain performance [23]. Furthermore, [24], conducted a literature review and stated that supply chain has been extensively researched but still it do lack the considerable research regarding how do the knowledge management in supply chain can boost its performance. [9], conducted a study and collected data from 124 respondents and reported that information access ultimately improves the supply chain skills. Further, authors also argued that when the information is accessible in forms of journals, reports, magazines, videos and other forms; it do help to enhance the skills which also further boost the supply chain performance. Therefore, it is argued that the access to information will enhance the supply chain skills.

2.4. Access to Network Resources

General overview of supply chain presents it as a network of different partners with different range of resources. All of the resources are collaboratively

used by the supply chain partners. In this regard it was argued that the organizations are in need to do collaboration in order to be effective and efficient in their supply chain partners. Thus, the supply chain collaboration has emerged to be significant concern and is gaining attention from the researchers as well [25]. Collaboration has been defined as it do include two or more organizations to mutually share their resources to execute some specific tasks. Further, they also become mutual beneficiaries for each other as well [26].

Previous studies point out the importance of collaboration in the domain of supply chain and also highlights the several advantages to having collaborated supply chain. In this regard it was argued that the presence of supplier collaboration tends to reduce the hurdles in purchasing raw materials and assist an organization to gain competitive edge. Further the collaborated supply chain tends to reduce the transactional cost between the supply chain partners [27]. Previous studies also provide evidence that collaborated supply chain also tends to reduce the risks associated with the processes as the risk is shared. The organizations in supply chain collaboration also do have access to the resources [28]. Collaboration has reported to be beneficial in significant terms such as reported that collaborative supply chain results in reduced costs, reduced response time, resources wastage, and risk and enhanced innovativeness as well due to access to all partners. Access to resources reported to be one of the component for the above mentioned supply chain benefits to the firms [29].

Previously studies have reported that access to network resources lead towards the supply chain skills. In this regard van Hoek, et al. [30] stated that there is need for the universities and industry to collaborate to develop the supply chain skills. From

the social capital point of view it was argued that it do act as a significant player in social networks for developing skills and individual's abilities [31]. It is intangible asset but has become a very significant which can potentially influence the success of a firm. [9], conducted a study and collected data from 124 respondents and reported that access to network resources ultimately improves the supply chain skills. Further, authors also argued that when the resources are accessible in forms of transportation, training and other forms; it do help to enhance the skills which also further boost the supply chain performance. Therefore, it is argued that the access to network resources will enhance the supply chain skills.

2.5. Research Framework and Hypothesis

The purpose of this research is to examine the impact of social capital on the supply chain skills. Further the study has also considered the access to information and network resources as potential intervening variables between the relationship of social capital and supply chain skills. Based on the literature review presented above following are the hypothesis for the present study:

H1: Social capital is significantly associated with supply chain skills.

H2: Access to information is significantly associated with supply chain skills

H3: Access to network resources is significantly associated with supply chain skills.

H4: Access to information significantly intervenes the association between social capital and supply chain skills

H5: Access to network resources significantly intervenes the association between social capital and supply chain skills.

Following figure 2 is showing the research framework of the study:

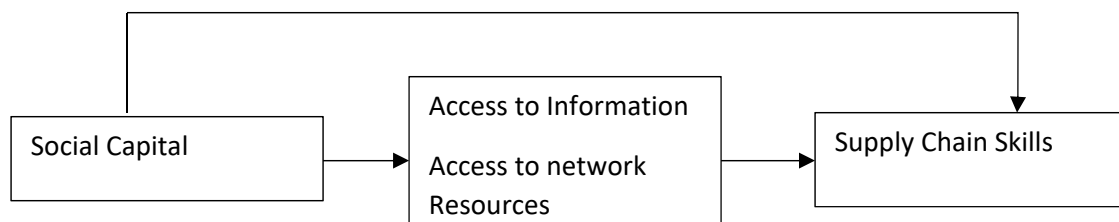


Figure 2:

3. Methodology

The purpose of this research is to examine the impact of social capital on the supply chain skills. Further the study has also considered the access to information and network resources as potential intervening variables between the relationship of social capital and supply chain skills.

Population for the present study is employees of the hospitals in Thailand. There were 59 hospitals in Thailand as per the list obtained from IHC (International Health Center) [32]. Only the employees related to supply chain department were selected to be considered for the study.

Population is broad and cannot be covered fully. If population is fully covered then it becomes census. So the sample size is selected which is true representative of the population. The sample size can be determined by using various criteria proposed by the previous research. [33], proposed that the sample size for a research study should be 200 to 400

respondents. Whereas [34] table provides the sample size table according to which the maximum sample size is 384 respondents. On the other hand [35], stated that the sample size should represent 20% population. Anyhow the sample size for the current study has been determined by using the thumb rule according to which the total questions in a questionnaire are multiplied by 10 to obtain sample size. There were 30 questions in the questionnaire so the sample size was 300 respondents.

Data were collected by using the self-administered questionnaire having two parts to address different nature of questions. One part entertained the questions related to the respondent's demography whereas the second part contained the questions related to the variables. All the scales were adapted from the previous studies.

4. Findings

Confirmatory Factor Analysis

Table 1.

Constructs	Items	Loadings	Alpha	CR	AVE
Access to Information	ATI1	0.893	0.848	0.908	0.767
	ATI2	0.831			
	ATI3	0.903			
Access to Network Resources	ATNR1	0.902	0.795	0.88	0.711
	ATNR2	0.793			
	ATNR3	0.832			
Social Capital	SC1	0.791	0.845	0.884	0.526
	SC2	0.809			
	SC3	0.723			
	SC4	0.461			
	SC6	0.747			
	SC7	0.784			
	SC8	0.703			
	SC9	0.697			
Supply Chain Skills	SCS1	0.729	0.891	0.911	0.509
	SCS2	0.776			
	SCS3	0.728			
	SCS5	0.720			
	SCS6	0.681			
	SCS7	0.536			
	SCS9	0.697			
	SCS10	0.734			
	SCS11	0.750			

SCS12 0.753

To assess the convergent validity of scale confirmatory factor analysis was performed. Table 1 showing the results of CFA. First of all values for “Cronbach’s Alpha” are presented in the table which should be more than 0.7. As per the table 1 the value of alpha for variables namely; social capital, supply chain skills, access to information and network resources is 0.845, 0.891, 0.848 and 0.795 respectively. It establishes that scale is reliable and it do represents the internal consistency of items. Furthermore table 1 is also showing the values for the composite reliability and average variance extract which are the parameters for the convergent validity.

As per the criteria the values for CR and AVE must be greater than 0.8 and 0.5 respectively. As per the table 1 the values of CR for the variables namely; access to information, network resources, social capital and supply chain skills are 0.908, 0.880, 0.884 and 0.911 respectively. Furthermore, table 1 is showing the values of AVE for the variables namely; access to information, network resources, social capital and supply chain skills which are 0.767, 0.711, 0.526 and 0.509 respectively. All the values for both criteria to determine the convergent validity are fulfilled which shows that scale is valid.

4.1. Discriminant Validity

Fornell & Larckers Criterion

Table 2.

	ATI	ATNR	SC	SCS
ATI	0.876			
ATNR	0.546	0.843		
SC	0.578	0.597	0.725	
SCS	0.706	0.728	0.664	0.713

Table 2 is showing the values of Fornell & Larckers Criterion which is used to determine the discriminant validity. As per the table 2 the values of every

variable is greater than the correlation of that variable with others. It means that scale is valid.

4.2. Cross Loadings

Table 3.

	ATI	ATNR	SC	SCS
ATI1	0.893	0.397	0.541	0.581
ATI2	0.831	0.571	0.443	0.625
ATI3	0.903	0.471	0.533	0.648
ATNR1	0.449	0.902	0.586	0.646
ATNR2	0.557	0.793	0.437	0.658
ATNR3	0.37	0.832	0.478	0.53
SC1	0.531	0.538	0.791	0.576
SC2	0.395	0.4	0.809	0.437
SC3	0.382	0.401	0.723	0.475
SC4	0.251	0.279	0.461	0.331
SC6	0.469	0.501	0.747	0.538
SC7	0.371	0.373	0.784	0.401
SC8	0.451	0.458	0.703	0.534

SCS1	0.489	0.584	0.479	0.729
SCS2	0.486	0.603	0.451	0.776
SCS3	0.436	0.64	0.508	0.728
SCS5	0.456	0.617	0.503	0.720
SCS6	0.451	0.42	0.491	0.681
SCS7	0.357	0.392	0.341	0.536
SCS9	0.546	0.487	0.483	0.697
SCS10	0.573	0.514	0.461	0.734
SCS11	0.629	0.438	0.504	0.750
SCS12	0.584	0.462	0.494	0.753

Table 3 is showing the cross loadings. As per the parameter the values of the loading should be greater than 0.7 and from all other values in same column.

The figures in table 3 fulfills the criteria for the cross loadings to be accepted.

4.3. Heterotrait-Monotrait Correlation Ratio

Table 4.

	ATI	ATNR	SC	SCS
ATI				
ATNR	0.665			
SC	0.668	0.711		
SCS	0.81	0.859	0.753	

The final approach to test the discriminant validity used was HTMT. It is the latest technique to assess the discriminant validity. It is necessary to confirm that each scale do represent its own construct rather than the other in the same questionnaire. As per the criteria the values in the HTMT table must be less

than 0.85 or 0.9 in other cases. As per the table all the values are less than 0.85 which affirms the discriminant validity. As the discriminant validity has been established it gives confidence that the SEM results are real rather than a mere statistical reflection. Figure 3 is showing the CFA output:

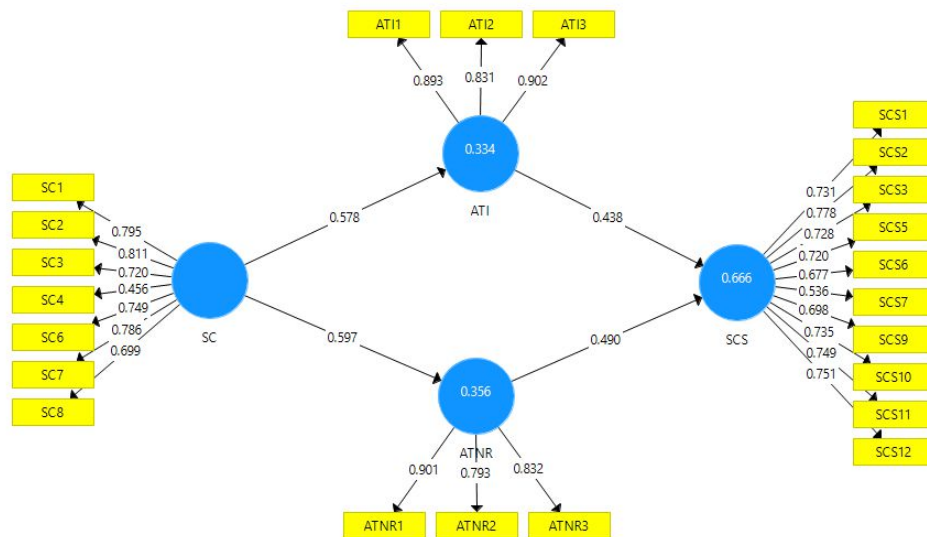


Figure 3:

4.4. Structural Equation Modeling

Table 5.

Relationships	Beta	SD	t value	p value	Decision
ATI -> SCS	0.438	0.025	17.187	p<0.05	Supported
ATNR -> SCS	0.490	0.025	19.996	p<0.05	Supported
SC -> ATI	0.578	0.029	19.745	p<0.05	Supported
SC -> ATNR	0.597	0.027	22.474	p<0.05	Supported

Table 5 is showing the results of the direct relationships between the variables. As per the table access to information found to be associated with the supply chain skills. The value of relationship is 0.438 and also positive. It means that when the employees are provided with the information the supply chain tends to be more effective and efficient. Similarly the results also showed that the access to network resources do influence the skills in positive direction at magnitude of 0.490. Which means that when the partners in a supply chain are able to use the resources mutually then the risks are shared and resources are multiplied which in turn increases the supply chain skills.

In addition results also showed a positive relationship between social capital and access to information

valued at 0.578. The association is significant and supported the hypothesis. In presence of less personal clashes and better working environment among the employees will bring about positive changes and makes it easy to share the information within individuals. Similarly social capital also found to be associated with the access to network resources. The relationship is valued at 0.597. Notably, the relationship between social capital and access to network resources found to be the strongest one. It means that a slight increase in the social capital will bring about major changes in access to network resources. All the hypothesis are accepted.

4.5. Specific Indirect Effects

Table 6.

Relationships	Beta	SD	t value	p value
SC -> ATI -> SCS	0.253	0.022	11.76	Supported
SC -> ATNR -> SCS	0.293	0.02	14.537	Supported

Table 6 is showing the mediation relationship results. As per the table access to information found to be a significant mediator between the relationship of social capital and supply chain skills. Furthermore, access to network resources is also found to be a significant mediator between the relationship of

social capital and supply chain skills. However, access to network resources found to be stronger mediator as compared to the access to information. All the results are significant. Thus the hypothesis are accepted. Figure 4 is showing the SEM output:

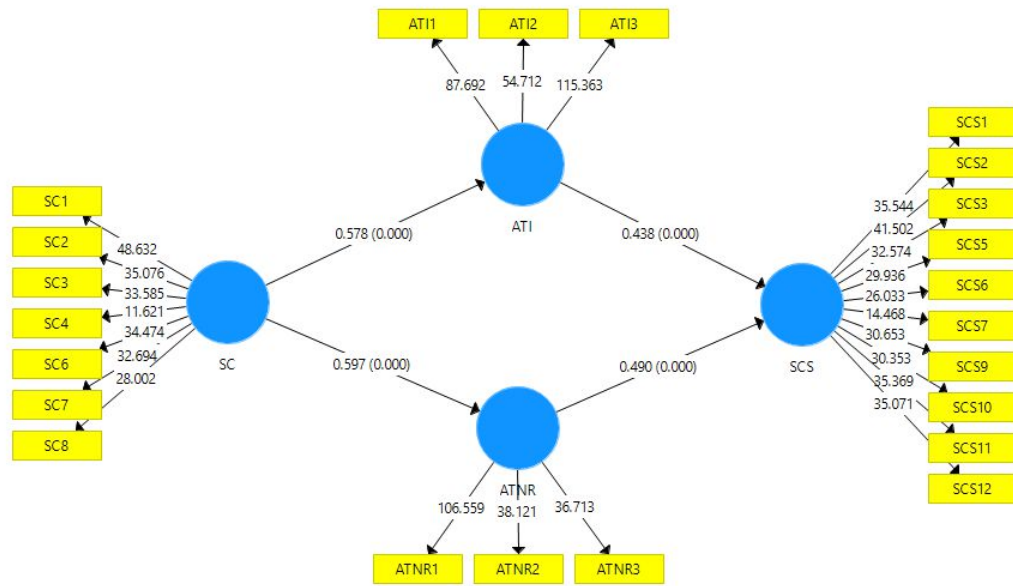


Figure 4:

5. Discussion

The study attempted to examine the impact of social capital on the supply chain skills. Furthermore, the study also considered the access related to information and network resources as a potential intervening variables between the relationship of social capital and supply chain skills. By exploring the social capital in supply chain perspectives the study has made valuable contribution by filling up the research gap. Further, study also provided a research framework regarding the integration of supply chain skills and how to develop or facilitate them.

The study hypothesized that social capital is significantly associated with supply chain skills. The results of the study showed significant positive association; hence, the hypothesis H1 is accepted. Furthermore, it was hypothesized that access to information is significantly associated with supply chain skills. The results of the study showed a significant positive results and supported the hypothesis H2. In addition to this the study mediation hypothesis H4 and H5 has also been supported and accepted in the light of the results. The study findings are valuable and helpful to determine about the policies and steps required to facilitate the supply chain skills in the broad domain of supply chain.

6. Conclusion and Future Directions

The study has provided valuable insights for the policymakers. Based on the findings of the study it is concluded that the relationships at the workplace should be considered and managed accordingly as they play an important role in the success of organizations. Further, the organizations are asked to adhere to the value of social relations so the supply chain functioning can be improved.

Although all the research questions are answered, objectives are achieved and hypothesis are accepted, the study has some limitations which can serve as a potential area to be studied in future. First of all the antecedents of social capital can be considered and multi-stage mediation can be performed to get better insights. Further each organization has its own protocols and culture; therefore the cultural aspects can be considered as a potential moderator for the present research framework. Future studies may use the mix methods to test the same research framework to get better insights regarding the facilitation of the supply chain skills.

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