SAMODHANA JOURNAL
Faculty of Social Sciences and Humanities,
Rajarata University of Sri Lanka,
Mihintale

2021 **Volume 10** **Issue I**

The Effect of Social Capital on Transaction Cost and Livelihood Success of SANASA Beneficiaries: A Case of Badulla District in Sri Lanka

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Received Date: 22nd June 2022
Accepted Date: 10th March 2022
Published Date: 06th June 2023

Abstract

The study attempts to investigate the effect of social capital on transaction costs and the livelihood success of SANASA beneficiaries in Sri Lanka. The study collected primary data from 273 SANASA beneficiaries selected from the Badulla district in Uva province with a multi-stage sampling method and employed a structured questionnaire for the data collection. Data were analyzed using the Partial Least Square Structural Equation Modeling (PLS-SEM). The result revealed that social capital significantly negatively influences transaction costs and has a positive relationship with the livelihood success of SANASA beneficiaries. Results further exhibit that transaction cost has negatively correlated with the livelihood success of SANASA beneficiaries. Developing a mechanism to strengthen social capital between SANASA beneficiaries and local and foreign exchange partners, building a trusting relationship with them, and integrating transactions with them led to minimizing transaction costs that affect the improvement of the livelihoods of SANASA beneficiaries.

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Keywords: Livelihoods, SANASA Beneficiaries, Social Capital, Transaction Costs.

Introduction

Small-scale producers are considered infants in the business field since they do not have the necessary knowledge and experience in the business environment (Carmel & Nicholson, 2005). Therefore, many small-scale producers fail to survive in business since they are more likely to suffer exploitation from exchange partners, mainly middlemen (Carmel & Nicholson, 2005). To avoid the cunning behavior of exchange partners, a firm needs to bear time and money costs to search for reliable buyers and suppliers, negotiate transaction agreements with them, reach an agreement to make a transaction and monitor the transaction process. Such time and money costs are called Transaction Costs (TC), which lead to avert the performance of business firms (Xin Guo et al., 2022). Meanwhile, scholars argue that Social Capital (SC) has the power to mitigate TC and improve livelihoods (Gunasekara, Premaratne, & Priyanth, 2017) since the SC helps to exchange important information that affects the reduction of TC and exchange productive resources as well (Burt, 1992). Small-scale producers use indirect private relationships to get the necessary information and resources (Priyanath & Premaratne, 2017). These indirect private relationships do not have official and on-paper promises, but these relationships are based on SC (Priyanath & Premaratne, 2017).

Fox (1996) noted some benefits in which SC is built; individuals can hold key places and use the capital to strengthen their contacts with different members, and these strengths of relationships may be used to access information and resources. By creating an atmosphere that permits the fostering of SC, households may be better positioned to invest in SC and use it in their livelihood success (He et al., 2022). Thus, SC has a powerful influence on improving livelihoods. SC generated through the involvement of the activities in Community-based Organizations (CBOs) impacts the lower TC and enhances livelihoods (Gunasekara, Premaratne, & Priyanth, 2017). Involving the activities of CBO, network relationships among members developed, and the quality of relationship build-up among members facilitates sharing of information, knowledge, and resources that affect the mitigation of transaction costs (Priyanath & Premaratne, 2017).

Several CBOs exist in Sri Lanka, and the SANASA is one of the major CBOs empowering the community and providing microcredits that positively affect livelihood development (Priyanath & Habaragamuwa, 2020). Though the researchers have studied SC and livelihoods (Gunasekara, Premaratne, & Priyanth, 2017; Fitzpatrick & Akgungor, 2020), scholars have not given sufficient attention to learning how the SC among the members of SANASA society affects the transaction costs and livelihood development of SANASA beneficiaries in Sri Lanka. Therefore, the study tries to fill this knowledge hole by investigating the influence of SC on TC and the livelihood success of SANASA Beneficiaries in Badulla District, Sri Lanka.

This study has several theoretical, empirical, and practical importance, and its findings expand the understanding how to improve SANASA beneficiaries' livelihoods by mitigating TC through SC. When referring to the previous literature, many scholars study TC and agriculture (Bhattarai & Bhusal, 2015; Jagwe, Ouma, & Machethe, 2009), industry (Carmel& Nicholson, 2005; Dyer & Chu, 2003; Miththrananda, & Priyanath, 2020), and services (Priyanto, Mazkie, & Khusaini, 2014; Silva, 2021). It cannot identify detailed research in the literature that focused on the effect of SC on TC and livelihoods. In this nature, the study is important since it will contribute to designing new policies and strategies to improve LS with the help of SC by minimizing TC. Further, the study helps to understand the relative efficacy of how SC theory influences the TC theory in different contexts and how it works practically, especially in the low-income group in Sri Lanka, which generates broad importance. Thus, the study contributes significantly to the literature by providing empirical evidence of the practical efficacy of SC and its impact on TC and livelihood success of the SANASA beneficiaries. Further, the study enables the policymakers and SANASA beneficiaries to develop strategies to mitigate TC by using SC and improving the rational ability and transaction frequency, helping avoid the opportunistic behavior of exchange partners and decreasing the transaction uncertainty. The rest of this paper has been arranged as presenting theoretical and empirical literature in section 2, Methodology in section 3, Results and discussion in section 4, and section 5 concludes the paper.

Theoretical background

The study reviews TC theory, SC theory, and livelihood assets to develop the theoretical base for key variables. The following section reviews theories, develops hypotheses based on the conceptual framework and justifies hypotheses by reviewing empirical literature.

Transaction Costs: TC is the cost of carrying out any exchange, whether between firms in a marketplace or a transfer of resources between stages in vertically integrated firms (Coase, 1960; Hobbs, 1996). Scholars supposed that market forces coordinate the transaction among buyers and sellers in a perfect competition market (Wang, 2003). However, a perfectly competitive market is not a reality, and customers need to bear costs when using the imperfect market (Hobbs, 1996). TC is formed due to imperfect market mechanisms (Coase, 1937). Since asymmetrical information exists in an imperfect market, the buyers fail to make rational decisions. As a result, the sellers behave opportunistically against the buyers (Williamson, 1981). Therefore, TC is the cost incurred by a firm when using market mechanisms due to opportunism and decision-making limitations (bounded rationality) (Zhang, 2009). Scholars discussed four aspects of TC; searching cost, negotiation cost, monitoring cost, and enforcement cost (Hobbs, 1996; Nooteboom, 1993). The costs rise when probing for the right detail about the purchasers on whom reliability could be kept (Lu, 2007; Williamson, 1985). After successfully contacting a reliable buyer needs to negotiate to reach an exchange promise. They are negotiation costs (Dyer, 1997; Hobbs, 1996). Monitoring costs are the expenditures that could be identified in cases of checking deals exchange. Monitoring costs are the costs to observe the transaction process, which fulfils the terms of the pre-promise (Hobbs, 1996; Williamson, 1985).The costs made to detect divergences from the agreed terms of the transaction are enforcement cost. They may be incurred in litigation or administrative proceedings (Hobbs, 1996; Williamson, 1985).

Social Capital Theory: Coleman (1988) explained that the SC is the worth of societal affairs. He highlighted three characteristics of SC; a) trustworthiness, b) information networks, and c) informal rules. According to Putnam (1995), key features of SC are; a) moral commitments and customs, b) social ethics (especially trust), and c) social networks (especially voluntary associations) that all facilitate coordination and cooperation for

mutual benefit. SC can explain the following features; networks, high levels of interpersonal trust, and norms of mutual support. According to Nahapiet & Ghoshal (1998), SC has three dimensions; structural, relational, and cognitive. Structural SC is the shape of individual relationships (Priyanath & Premaratne, 2015). The network structure is based on the size and density of the relationship (Nahapiet & Ghoshal, 1998). The relational SC means the quality of social relations among individuals (Priyanath & Premaratne, 2015). It has two broad attributes: a) strength of relationships and b) quality of relationships (interpersonal trust, generalized expectations of behavior, such as norms of reciprocity, flexibility, solidarity, reciprocity, and role of integrity). Cognitive SC implies a common understanding among people.

Livelihood Success: In simply livelihood means various activities people like to do daily to fulfil their necessities and desires (Priyanath & Habaragamuwa, 2020). Livelihood success is not dependent on money, and it largely impacts determining an individual's livelihood phases (Beall & Kanji, 1999). On the other hand, people who live wealthy have a strong possibility of getting access to resources, knowledge, and skills under prevailing economic circumstances. But the poor's can't access those easily. Scoones (2009) explained that resources should be utilized effectively to gain sustainable livelihoods. Further, they describe five dimensions of livelihood assets (Human, Physical, Natural, Financial, and Social) based on the sustainable livelihood analysis framework. This assets-based system is more famous among many scholars (Carney, 1998; Scoones, 2009). Avila Foucat and Rodríguez-Robayo, (2018) explained that human capital is the key determinant factor that affects livelihood success. Mushongah and Scoones (2012) highlighted that labor resources comprise qualitative and quantitative dimensions. Household size, age, and the number of individuals engaging in earning activities in a household are the quantitative dimensions, and the level of education, health care, population growth, urbanization, displacement, and skill of the members of a community are the qualitative dimensions. Natural capital has three main categories; land, water, and forest resources, including environmental resources (Feldman, 2014). Financial capital means financial assets reachable to people. Total income, credit accumulations, savings, subsidies, remittances, and pensions are the major factor of financial capital (Serrat, 2017). Basic infrastructure like

transportation, shelter, water, energy, and communication are the physical capital used to produce tools that enable people to pursue their livelihoods. Moreover, the hand tools and machinery necessary are the variables used to describe physical capital (Qin Zhang et al., 2019). Social capital is the most important aspect of all types of aspects in livelihood success (Foucat & Robayo, 2018). Mushongah and Scoones (2012) determine membership within different groups, institutional networks, relationships of trust, norms, and reciprocity.

Theoretical Framework and Hypotheses

The study develops a framework combining SC theory, TC theory, and livelihood assets with studying the impact of SC on TC and the livelihood success of SANASA beneficiaries in Sri Lanka. Based on the theoretical framework, the study constructed seven hypotheses types of this framework; SC is the independent variable, while livelihood success is the dependent variable. Meanwhile, TC is a mediating variable in the relationship between SC and livelihood success.

SC and Livelihood: Investment in SC can gain both physical benefits (e.g. income) and non-market (e.g. health, social status) outcomes. Further, connections among people allow for an exchange of ideas and reach to resources such as time, money, or knowledge necessary for practising different livelihood-earning activities (Ishihara & Pascual, 2009). Thus, many scholars highlighted that SC facilitates maintenance or improves livelihoods. Narayan and Pritchett (1999) explore five mechanisms through which social capital can benefit livelihood outcomes. They are 1) more efficacious government, 2) solving common pool problems, 3) diffusion of innovations, 4) lowering transaction costs, and 5) informal insurance. Boro (2017) revealed that the SC supports most households to provide essential services that influence livelihood success in Nigeria. Abenakyo (2007) revealed that SC empowered the decision-making of the community, fostered asset base creation and use of natural resource management well, and all affected livelihood improvement. Thus, many empirical findings confirmed that SC has a powerful impact on livelihood success. Therefore, the study assumes that;

H1: Structural social capital has a positive impact on the livelihood success of SANASA beneficiaries in Sri Lanka.
H2: Relational social capital has a positive impact on the livelihood success of SANASA beneficiaries in Sri Lanka.

SC and Transaction Costs: Chiles and McMackin (1996) explained that when there is a high level of relational SC (basically trust) between two parties, agreement costs are lower because it is not required to include all kinds of costly protections. Negotiation costs are lower because when people trust each other, they are keener to cooperate and do not have to find out whether the other is trustworthy the monitoring costs are reduced because it is not necessary to check whether other is making mistakes every time. Uzzi (1999) explained that SC generates value for producers by enhancing their ability to reduce TC. Jones et al. (1997) also highlighted that SC replies to asset specificity, demand uncertainty, task complexity, and frequency transaction situations. These conditions drive firms toward structurally embedding their transactions, enabling them to use social mechanisms to coordinate and safeguard exchanges. When all of these conditions are in place, the SC has rewards over hierarchical solutions in simultaneously adapting, coordinating, and safeguarding exchanges. Thus, some studies have shown the relevance of SC in controlling, monitoring, and safeguarding transactions (Uzzi, 1997). Thus, scholars have confirmed that the SC and TC have an inverse relationship, and therefore, the study hypothesizes that;
H3: Structural social capital negatively relates to the transaction costs of SANASA beneficiaries in Sri Lanka.
H4: Relational social capital negatively relates to the transaction costs of SANASA beneficiaries in Sri Lanka.

TC and Livelihoods: TC may go high and significantly affect economic performance (Priyanath & Premarathna, 2017). Priyanath & Buthsala (2017) confirmed that a firm faced high TC, which discourages the firm's success. They found that minimizing the TC of households will increase their performance. If TC is low, performance is higher. Therefore, the study assumes that:

H5: Transaction costs have a negative impact on the livelihood success of SANASA beneficiaries in Sri Lanka.

Mediate role of TC: Dyer and Sing (1998) revealed that a strong SC impacts mitigating TC. Strong interpersonal trust among exchange partners will reduce TC because both parties are confident that the transaction will be fairly divided. In addition, negotiations will likely be more efficient because exchange partners will have greater confidence that information provided by the other partners is not misrepresented. Doucette (1996) supposed that information sharing increases satisfaction between current exchange partners. This prevents the need to find a new partner. This further reduces search costs incurred in looking for a new reliable partner. Some scholars highlighted that a decrease in TC improves the performance of small producers because their profit margins will increase due to a decrease in TC (Priyanath & Buthsala, 2017). SANASA beneficiaries do micro industries and can increase livelihoods by minimizing TC if they have strong SC. Therefore, the study assumed that:

H6: Transaction costs mediate the relationship between structural social capital and livelihood success of SANASA beneficiaries in Sri Lanka.

H7: Transaction costs mediate the relationship between relational social capital and livelihood success of SANASA beneficiaries in Sri Lanka.

Williamson (1985) developed TC economics to explain the association between transaction determinants and TC governance procedures. Dyer (1997) and Hobbs (1996) underlined that business firms want to explore new buyers and suppliers, negotiate with exchange partners and long-term contracts, and monitor transaction agreements due to the asymmetrical information. A livelihood system takes part in the opportunities and assets available to people for achieving their goals and exposure to a range of beneficial or harmful ecological, social, economic, and political disturbances that may help or hinder groups' capacities to make a living. Developing in SC can gain both tangible returns for the market (e.g. Income, wages) and non-market (e.g. health, social status) outcomes (Godoy, 2007). Further, relations among persons allow the talk to gather ideas and collect resources such as time, money, or knowledge necessary for practising different livelihood-earning activities (Ishihara & Pascual, 2009). SC can be used to improve livelihoods. This study tries to determine SC's impact on TC and livelihood success in SANASA beneficiaries. The conceptual model of this study is offered in Figure 01. Based on the conceptual model, the study has

constructed 07 hypotheses connecting those variables. According to the model, TC is a mediating variable between the independent variables (i.e., SC) and the dependent variable (i.e., LS of the SANASA beneficiaries).

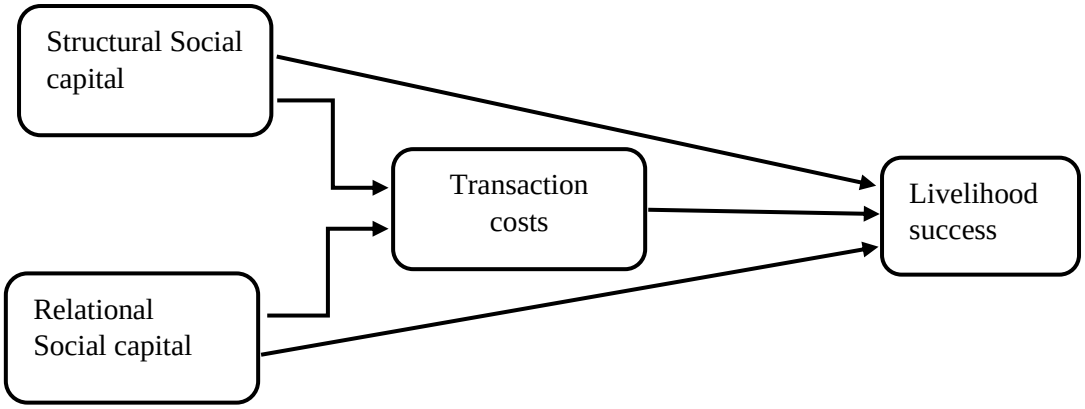

Figure 1: Conceptual Framework

Methodology

Seven hypotheses were developed, combining the SC theory, TC theory, and livelihood concept to solve the research problem, and therefore the research approach is deductive, and thus the method is quantitative. Primary data were collected by employing a questionnaire survey. The study used multi-stage sampling. First, the Badulla district was randomly selected out of 25 districts in Sri Lanka to conduct the survey. Second, SANASA societies functioning in 15 Divisional Secretariats (DS) Divisions in the Badulla district were taken by contacting the Department of Cooperative Development in Badulla. The study selected one SANASA society randomly from each DS Division. Third, it designates all the beneficiaries engaging in livelihood activities as a cluster. Accordingly, 273 members of SANASA beneficiaries were selected as the sample. The data were collected using a structured questionnaire.

The questionnaire items were designed systematically based on the literature. Livelihood is measured using five dimensions; natural capital, financial capital, physical capital, human capital, and social capital, adopted by Piyanath and Habaragamuwa (2020); Gunasekara, Premaratne, and Priyanath (2017), and Fox (1996). The study measured SC using two dimensions;

structural SC and Relational SC. Structural SC was measured employing network size, density, and strength adopted by Bhagavatula (2009) and Burt (2000). Relational capital was measured with the help of interpersonal trust and relational norms adopted by Lu et al. (2012); Manolova et al. (2007). The study used four constructs (Searching, Negotiation, Monitoring, and Enforcement) to measure TC, which Dyer and Chu (2003) accepted.

Partial Least Squares-Structural Equation Modeling (PLS-SEM) was selected as the main data-analyzing technique because it helps to study the interrelationship among multiple independent and dependent variables to evaluate the relationship between more than one construct simultaneously. Assessing the reliability and validity test to enhance the reliability of the construct for made variables and efficiency of the structural model was evaluated by multicollinearity issues, R^2, effect size (F^2), and predictive relevance (Q^2).

Results and Discussion

Out of SANASA beneficiaries, 68% are females, while 32 are males engaging in income-generating activities. Of all the beneficiaries, 53% have received education up to Grade 10 or Ordinary Level, while 18% have obtained A/L education. The majority of beneficiaries are housewives. The age of the majority of beneficiaries is above 40 years, and 96% are married. Their livelihoods have been recorded as 88% doing agriculture, business, or related things, 5% earning daily wages, while only 7% have permanent livelihoods receiving monthly salaries.

Based on the PLS-SEM model, the study initially evaluates the nine variables (as first-order constructs). The study tested the reliability (indicator reliability and internal consistency reliability) and validity (convergent validity and discriminate validity) of the first-order constructs (see annex 01). Standard factor loadings above the minimum criterion of 0.7 confirmed the indicator reliability and factor loggings were significant since t-statistic values are higher than 1.96. The Cronbach's alpha (CA) and composite reliability (CR) show that all values are above in minimum threshold value of 0.7, confirming that the constructs have internal consistency reliability. According to the convergent validity test, the Average Variance of Extracted (AVE) constructs is above 0.5, establishing the first-order constructs'

convergent validity. The discriminant validity of the first-order constructs is shown in Annex 02. Table 2 in annex 02 indicates that the discriminant validity of all the first-order constructs is established since the square roots of all AVE values are higher than the correlation values according to the Fornell-Larcker Criterion (Fornell & Lacker, 1981).

Based on the first-order latent variables, the study developed second-order constructs and evaluated the validity and reliability of those 14 constructs (see annex 03). Table 3 in annex 03 exhibits that factor loading and relevant t statistics are above the minimum criterion (Factor loadings are above 0.7 and t statistics are above 1,96), confirming that all constructs contain the indicator reliability. It further shows that internal consistency reliability and convergent validity are established since both satisfy the minimum criterion. Table 4 in annex 4 shows that the discriminant fact of the second-order constructs is satisfied since the squire roots of AVE of each construct are higher than the correlations of other constructs according to the Fornell-Larcker criterion (Fornell & Lacker, 1981).

The study evaluated the reliability and validity of four main variables developed based on third-order latent variables scores (see annex 05). Table 5 in annex 05 shows the reliability and convergent validity of the third-order constructs. Indicator reliability and internal consistency reliability of third-order constructs are established since the loadings are higher than 0,7, t statistics are higher than 1.96, composite reliability is higher than 0.7, and AVE values of all constructs are higher than 0.5, respectively. Table 6 in annex 06 exhibits the discriminant validity of the third-order constructs, and according to the Fornell-Larcker criterion, all the constructs have discriminated validity.

Once the variables are prepared based on the measurement model, the study evaluates the structural model to test hypothetical relationships following the steps suggested by Haire et al. (2012). The first step is to check the multicollinearity among variables with the support of a VIF value which should be less than 5. Table 1 shows no multicollinearity issues among variables since the VIF values are less than 5. The VIF values for the model show minimal collinearity, ranging from 2.015 to 2.693.

Table 1: VIF Values

	Livelihood Success	**TC**
RSC	**2.693**	**2.055**
SSC	**2.109**	**2.015**
TC	**2.132**	

Source: Survey data, 2022

The second step is to check the hypotheses between the dependent and independent variables. Table 2 shows each relationship's path coefficient (Beta value) and significance (T statistics). All the hypothetical relationships are significant at a 99% significant level (since t statistics are higher than 2.56).

Table 2: Path Coefficient and Significant

	Hypothesis	**Beta**	**T Statistics**	**Decision**
1	**RSC -> Livelihood Success**	0.817	34.689	**Accepted**
2	**RSC -> TC**	-0.564	10.321	**Accepted**
3	**SSC -> Livelihood Success**	0.075	2.667	**Accepted**
4	**SSC -> TC**	-0.210	3.760	**Accepted**
5	**TC -> Livelihood Success**	-0.105	4.105	**Accepted**

Source: Survey data, 2022

The predictive power of the model is checked using the R squire. The study predicted a 73% variance of livelihood success by both SC and TC, whereas SC explained a 53% variance of TC. Also, to know the predictive relevance (Q^2) of the model fit, The Q^2 value is 0.66 for livelihood success and 0.34 for TC, indicating that the model has a higher predictive relevance. The bootstrapping of the indirect path in Smart PLS-3 has been conducted to evaluate the mediator role of TC, and table 3 shows that the TC partially mediates the relationship between SC and livelihood success.

Table 3: Mediate Effect

	Beta	**T Statistics**	**P Values**	**Type**
SSC -> TC -> Livelihood Success	0.022	2.488	0.013	**Partial**
RSC -> TC -> Livelihood Success	0.059	4.080	0.000	**Partial**

Source: Survey data, 2022

According to table 2, the beta (β) coefficient of RSC and livelihood success is 0.817, which is higher than the significant path coefficient value of 0.05 (t statistics = 34.68). It means that if RSC increased by 100%, the livelihood success of SANASA beneficiaries would increase by 81.7%, showing a strong relationship between RSC and livelihood success. The β coefficient of the relationship between SSC and livelihood success is 0.075, which is significant at a 99% statistical confidence level (t-statistics = 10.31). Thus, empirical results confirmed that SC significantly impacts livelihood success. These findings are in line with prior studies by Abenakyo et al. (2007); Adugna (2013); He et al. (2022); Kiboro (2017), who revealed that SC has a significant impact on livelihood development. According to the research objectives, the study calculates the relationship between RSC, TC, and SSC and TC. β coefficient in the relationship between RSC and TC is recorded as -0.564 (T statistics is 10.321), revealing that RSC has a significant negative impact on TC of SANASA beneficiaries. Similarly, the results revealed that SSC negatively affects the TC of SANASA beneficiaries showing a -0.210-beta coefficient and 4.105 t statistics. It means that both RSC and SSC have negatively associated with TC. Some studies have provided similar findings. Scholars (Henningsen & Henning, 2013; Yenidogan, 2013) explained that the SSC enables reliable information with low costs and identifies reliable exchange partners, which leads to a decrease. The beta coefficient in the relationship between transaction cost and livelihood success is -0.105 which a p-value less than 0.005 (t-statistics = 4.105), revealing a significant negative relationship between TC and livelihood success. It means that if the TC increased by one unit, livelihood success decreased by 10.5%. This study proved the result obtained by Priyanath and Habaragamuwa (2020), and they found that TC has a powerfully negative effect on livelihood success.

Conclusion

The study revealed that social capital directly affects the enhancement of the livelihoods of SANASA beneficiaries. The study revealed that the RSC has a more powerful impact on the decrease of TC and the increase of livelihood success than the SSC. The results further confirmed that TC leads to a decrease in the livelihood success of SANASA beneficiaries, and TC has a significant partial mediate role in the relationship between SC and livelihood success. Thus, the study contributes to the knowledge by disclosing empirical evidence studying the effect of SC on TC and livelihood success. The study tested the theoretical framework developed by combining SC theory, TC theory, and livelihood success and contributed to the knowledge by realizing the practical efficacy of the framework through empirical results. The study contributes to the methodological knowledge by quantifying the multidimensional variables of SC, TC, and livelihoods. The study suggests policymakers develop a mechanism to strengthen social capital and market networks vertically between SANASA beneficiaries and reliable exchange partners and develop a mechanism to provide sufficient market information (prices, quality, and exchange partners) utilizing ICT technologies SANASA beneficiaries for easy access to information which helped to minimize TC and arrange more activities to develop close relationships with reliable exchange partners expecting to minimize TC. Future researchers are recommended to carry out broad research on focusing all the dimensions of SC and how it influences the TC determinants and livelihoods.

Acknowledgements

This research was supported by the Accelerating Higher Education Expansion and Development (AHEAD) Operation of the Ministry of Higher Education funded by the World Bank (AHEAD PAT DOR SUSL No.47).

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Annex - 01

Table 1: Reliability and Convergent Validity of the First-order Constructs

Construct	**Loading**	**T Statistic**	**Composite Reliability**	**Cronbach's α**	**AVE**
Competency			**0.934**	**0.894**	**0.826**
Trustworthiness of knowledge	0.940	97.966			
Trustworthiness of attitude	0.912	55.549			
Trustworthiness of skills	0.873	39.163			
Consistency			**0.943**	**0.919**	**0.804**
Trustworthy	0.897	62.039			
Not break the promises	0.918	73.533			
Not hide anything (very open)	0.887	40.027			
Disclose all information	0.885	34.767			
Integrity			**0.947**	**0.916**	**0.856**
Honesty	0.930	82.336			
Always tell truth	0.904	52.603			
Fairness	0.941	82.205			
Loyalty			**0.912**	**0.855**	**0.775**
Respect me	0.914	67.536			
Ready to support	0.825	27.839			
Collective Action			**0.924**	**0.876**	**0.801**
Support voluntary	0.885	58.937			
Support collectively	0.909	61.092			
Corporation			**0.929**	**0.904**	**0.726**

Not a selfish behavior	0.740	20.374			
Ready to discuss any disputes	0.867	45.970			
Flexible in maintaining the relationship	0.864	42.530			
Devoted time and money to continue the relationship	0.911	52.014			
They agreed to collective action	0.867	49.646			
Flexibility			**0.857**	**0.748**	**0.667**
Flexible to change agreement	0.746	21.168			
Not forced to act according to the pre-agreement	0.815	27.704			
Flexible to adjust corporate	0.883	48.753			
Information Sharing			**0.900**	**0.851**	**0.693**
Provide important information	0.880	48.035			
Provide information that helps to pre-plan	0.874	44.831			
Provide secret information	0.823	31.163			
Provide trustworthy information	0.746	19.085			
Reciprocity			**0.854**	**0.742**	**0.662**
Always fulfill assign role correctly and honestly	0.900	68.362			
Do not try to gain short-term benefits that harm the relationship between us	0.761	20.697			
Do not engage in cheating or any other dishonest conduct	0.773	22.231			

Source: Survey data, 2022.

Annex – 02

Table 2: Discriminant Validity of the First-order Constructs

		1	2	3	4	5	6	7	8	9
1	Competency	**.909**								
2	Consistency	.850	**.897**							
3	Integrity	.827	.814	**.925**						
4	Loyalty	.820	.826	.807	**.880**					
5	Collective Action	.252	.235	.185	.277	**.895**				
6	Corporation	.338	.340	.283	.353	.811	**.852**			
7	Flexibility	.277	.349	.294	.271	.716	.782	**.817**		
8	Info Sharing	.291	.300	.240	.284	.798	.819	.813	**.832**	
9	Reciprocity	.318	.324	.276	.329	.700	.806	.713	.713	**.814**

Source: Survey data, 2022.

Annex 03

Table 3: Reliability and Convergent Validity of the Second-order Constructs

Construct	**Loading**	**T Statistic**	**Composite Reliability**	**Cronbach's α**	**AVE**
Financial Capital (FC)			**0.882**	**0.821**	**0.651**
Increase the direct income	0.788	18.691			
Increase the savings	0.853	45.666			
Increase the assets	0.759	31.603			
Increase the accessibility to credit	0.825	32.076			
Human Capital (HC)			**0.950**	**0.937**	**0.760**
Increase the vocational knowledge	0.851	44.641			
Increase the general knowledge	0.879	50.890			
Increase the vocational skills	0.880	56.722			
Increase the health status	0.817	35.121			
Increase the professional experiences	0.882	56.160			
Natural Capital (NC)			**0.906**	**0.795**	**0.827**
Availability of favorable	0.933	155.07			

soil					
Availability of sufficient water facilities	0.886	47.886			
Physical Capital (PC)			**0.910**	**0.876**	**0.761**
Improve the housing condition	0.808	41.325			
Improve the water supply	0.743	26.982			
Increase the audio-visual communication facilities	0.857	53.944			
Increase the vehicle/machinery	0.772	23.974			
Increase the furniture	0.904	77.966			
Social Capital (SC)			**0.977**	**0.973**	**0.860**
Develop a relationship with many members of the SANASA society	0.955	0.955			
Ability to meet many people regularly	0.892	0.892			
Ability to build relationships with many people	0.939	0.939			
Ability to exchange many information/ knowledge	0.937	0.937			
Increase mutual support	0.933	0.933			
Decrease the selfish behaviors	0.888	0.888			
Increase the flexibility among members	0.946	0.946			
Network Density (ND)			**1.000**	**1.000**	**1.000**
Supportive Network	1.000	1.000			
Network Size (NS)			**0.796**	**0.527**	**0.666**
SANASA Members	0.700	10.145			
Supportive Network	0.917	42.683			
Network Strength			**0.940**	**0.922**	**0.724**
SANASA Member -1	0.855	40.175			
SANASA Member -2	0.926	89.175			
SANASA Member -3	0.902	74.245			
SANASA Member -4	0.860	52.700			
SANASA Member -5	0.822	31.523			

Neighbor -1	0.727	21.777			
Interpersonal Trust			**0.967**	**0.955**	**0.881**
Competency	0.932	90.275			
Consistency	0.957	122.80			
Integrity	0.944	107.83			
Loyalty	0.920	82.081			
Relational Norms			**0.958**	**0.945**	**0.820**
Collective Action	0.887	55.705			
Corporation	0.947	136.11			
Flexibility	0.890	66.282			
Infor Share	0.926	102.66			
Reciprocity	0.874	46.045			
Searching Cost (SC)			**0.929**	**0.885**	**0.813**
Time and labor costs to find buyers and suppliers	0.894	56.004			
Costs for transportation and communications to find buyers to sell products and suppliers to buy inputs.	0.902	66.828			
Cost to find buyers to sell products and suppliers to buy inputs.	0.909	56.666			
Negotiation Cost (NC)			**0.945**	**0.913**	**0.851**
Time and high labor costs to negotiate with buyers and sellers	0.914	77.179			
Costs for transportation and communications to negotiate with buyers and sellers	0.914	54.013			
Cost of negotiating with buyers and sellers	0.940	117.41			
Monitoring Cost (MC)			**0.901**	**0.838**	**0.753**
Time and labor costs to oversee sales and purchasing activities.	0.852	41.292			
Costs for transportation and communication to oversee sales and purchasing	0.896	60.872			

activities.					
Costs to oversee sales and purchasing activities	0.855	31.591			
Enforcement Cost (EC)			**0.904**	**0.841**	**0.758**
Costs to settle transaction disputes, pay commissions to after-sales agents/intermediaries, and pay license fees and sales taxes.	0.849	30.323			
Resolving transaction disputes, paying commissions to after-sales agents/intermediaries, and paying license fees and sales taxes can cost me a considerable amount of labor and time.	0.906	68.634			
Setting up transaction disputes, paying commissions to after-sales agents/intermediaries, and paying license fees and sales taxes incur significant transportation and communication costs.	0.855	39.980			

Source: Survey data, 2022.

Annex 04

Table 4: Discriminant Validity of the Second-order Constructs

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	FC	**.81**													
2	HC	.61	**.87**												
3	NC	.70	.59	**.91**											
4	PC	.73	.65	.62	**.87**										
5	SC	.77	.71	.81	.66	**.93**									
6	ND	.54	.50	.46	.71	.50	**1**								
7	NS	.50	.37	.56	.27	.60	.47	**.82**							
8	Strength	.50	.52	.52	.46	.59	.45	.44	**.85**						

9	Norms	.78	.76	.77	.74	.89	.55	.54	.59	**.91**					
10	Trust	.25	.34	.23	.32	.31	.22	.08	.20	.34	**.94**				
11	EC	.42	.40	.36	.43	.47	.31	.26	.42	.50	.09	**.87**			
12	MC	.51	.50	.44	.54	.53	.39	.23	.48	.55	.15	.71	**.87**		
13	NC	.62	.68	.58	.57	.67	.45	.39	.52	.70	.14	.51	.70	**.92**	
14	SC	.57	.63	.57	.55	.57	.42	.32	.49	.63	.15	.43	.60	.80	**.90**

Source: Survey data, 2022.

Annex 05

Table 5: Reliability and Convergent Validity of the Third-order Constructs

Construct	**Loading**	**T Statistic**	**Composite Reliability**	**Cronbach's α**	**AVE**
Livelihood Success (LS)			**0.938**	**0.918**	**0.753**
Financial Capital	0.885	32.131			
Human Capital	0.821	26.424			
Natural Capital	0.865	45.128			
Physical Capital	0.842	44.693			
Social Capital	0.923	51.399			
Relational Social Capital (RSC)			**0.970**	**0.962**	**0.867**
Interpersonal Trust	0.945	49.392			
Relational Norms	0.961	166.16			
Structural Social Capital (SSC)			**0.844**	**0.629**	**0.729**
Density	0.845	44.299			
Strength	0.863	91.937			
Transaction Costs (TC)			**0.913**	**0.873**	**0.725**
Searching Cost	0.860	49.392			
Negotiation Cost	0.913	95.564			
Monitoring Cost	0.877	40.213			
Enforcement Cost	0.748	17.780			

Source: Survey data, 2022.

Annex 06

Table 6: Discriminant Validity of the Third-order Constructs

	LS	**RSC**	**SSC**	**TC**
LS	**0.868**			
RSC	0.945	**0.931**		
SSC	0.719	0.710	**0.854**	
TC	-0.734	-0.713	-0.611	**0.852**

Source: Survey data, 2022