

# Do the Transaction Cost Determinants Affect the Livelihoods of SANASA Beneficiaries? A Case of Colombo District, Sri Lanka

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## Abstract

The livelihood development of low-income groups is a big challenge in many less developed countries. Meanwhile, scholars argue that Transaction Cost (TC) is the main factor that averts the livelihood improvement of low-income groups. This study attempted to examine how the Livelihood Success (LS) of the low-income groups is affected by the determinants of the TC. The study selected the members of SANASA society, one of the leading cooperative societies involving livelihood improvement activities in Sri Lanka. The study selected the Colombo district, the main commercial region in Sri Lanka to conduct the survey and gathered data from 130 SANASA beneficiaries, employing multistage sampling. A structural questionnaire was administered to collect primary data which were analyzed using the Partial Least Square Structural Equation Modeling. The results revealed that the TC determinants; uncertainty, and opportunism have a positive relationship with TC and negatively relate to LS. Meanwhile, rational ability and transaction frequency have negatively affected TC and positively impacted LS. The TC has a partial mediator role in the relationship between TC determinants and the LS of SANASA beneficiaries. Thus, the study provides a significant contribution to the literature by providing empirical evidence of the practical efficacy of TC and its impact on LS of the SANASA beneficiaries. Further, the study enables the policymakers and SANASA beneficiaries to develop strategies to mitigate TC by improving the rational ability and transaction frequency, both helping to avoid the opportunistic behavior of exchange partners and decreasing the transaction uncertainty, improving LS.

**Keywords:** Livelihoods, Opportunism, Rational ability, SANASA beneficiaries, Transaction cost, Transaction uncertainty.

## INTRODUCTION

Livelihood development of low-income groups generates more positive influences on an economy such as achieving sustainable development goals, poverty reduction, employment generation, and equity, and finally leads to economic growth and development (Khan et al., 2020). Empowering the community through Community-Based Organizations (CBOs) is a powerful approach to improving the livelihoods of low-income groups (Gunasekara, Premaratne & Priyanath, 2017). There are several CBOs in Sri Lanka that assist to uplift the livelihoods of low-income groups and among them, SANASA is identified as one of the broadly disseminated CBOs that involve the livelihoods of low-income groups. At present, the SANASA movement has 8424 primary SANASA societies, 13 business entities employing 16,000 employees, catering its services to 3.7 million individual users, and acquiring total assets worth LKR 150 billion. It is the apex body of over 8400 primary societies dealing in microfinance in territories designated from the rural assemblies to the communities, subdivided throughout the country inclusive of predominantly populated areas ([www.sanasa.coop/index.html](http://www.sanasa.coop/index.html), 2021). It is composed of some members who contribute initial share capital, attend meetings, and make regular savings (David & Mosley, 1997).

Today SANASA federation has a membership of 20% of the country's total population as direct and indirect membership. Most prominently, root-level membership of SANASA spread into the most remote villages comprising farmers, field workers, and other marginalized communities (Herath et al., 2013). Hence, SANASA assists livelihood development through micro-finance (Herath et al., 2013; Owen, 2007).

Although CBOs conducted in Sri Lanka highly support the development of livelihood during the recent 4-5 decades, still poverty (11.7% in 2022) can be recognized as one of the main issues in the economy (Central Bank of Sri Lanka, 2022). Scholars discuss the reasons for this issue from different perspectives. From an economic perspective, market failure discriminates against small-scale producers creating cost disadvantages (Carmel & Nicholson, 2005; Storey, 1999). According to Storey (1999), market failure is a key reason which leads to discrimination against micro-level producers in favor of large firms. For example, the formal financial sector tends to discriminate against micro-level producers providing credits for large firms, since the failure rate of micro-level producers is much higher than that of large producers (Nguyen & Canh, 2021). Considering the product market, micro-level producers fail to compete with

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large firms due to the problems of market information, management and business experiences, technology, and product quality (Maseko et al., 2012; Nguyen & Canh, 2021). Thus, market failure leads to averting the success of micro-level producers as compared to large-scale producers (Nguyen & Canh, 2021). Therefore, small-scale producers need support in providing credits, equipment, infrastructure facilities, etc. Nootboom (1993) explained that costs of production lead to discrimination against small-scale producers in three aspects: scale, scope, and knowledge and experience. Micro-level producers generally have a small capacity for little products (Yoshino & Taghizadeh-Hesary, 2016). Often, they have poor benefits from economies of experience and inadequate capacity to access knowledge (Yoshino & Taghizadeh-Hesary, 2016). They do not have the capacity to change their scale due to several limitations such as lack of resources, knowledge, and experience, and have the ability to gain relatively fewer economies of scale (Nootboom 1993; Yoshino & Taghizadeh-Hesary, 2016). Meanwhile, scholars (Carmel & Nicholson, 2005; Garcia et al., 2022; Jagwe, Ouma, & Machethe, 2009) indicated that micro-level producers have higher mortality due to the limitations mostly reflected in Transaction Costs (TC). The TC leads to discrimination against micro-level producers damaging their survival and success (Okoye, et al., 2016). Thus, TC can be identified as a prominent criterion in generating negative influences and discouraging small producers' livelihood success (Priyanath & Habaragamuwa, 2020). In general, TC refers to the costs that are associated with an economic exchange (Williamson, 1985). Since most of the people who get the assistance of SANASA are relatively small-scale producers, TC faced within several stages of their businesses is a common problem associated with them (Owen, 2007). As stated above most probably the SANASA assistance taken people are from rural marginalized communities and they generally lag in education, market experiences, developed technology, and advanced knowledge (Jagwe, Ouma, & Machethe, 2009). Also, most commonly they are settled in rural areas with lower infrastructure facilities. These factors are identified as the roots of TC among marginalized rural communities (Jagwe, Ouma, & Machethe, 2009). TC disturbs the reaping best out of CBOs in alleviating poverty and upgrading sustainable livelihoods among low-income earners. Small-level producers like SANASA beneficiaries play a vital role in the Sri Lankan economy generating more employment opportunities, reducing rural poverty, female and community empowerment and achieving sustainable development, etc. (Chigonda, 2017). Nevertheless, TC leads to distortion that sustainability reflects a downgrade in Sri Lankan small-producer success (Priyanath & Lakshika, 2020). However, complete empirical work on examining the livelihood success of SANASA beneficiaries from a TC perspective represents a significant gap in the literature. Therefore, this study attempts to bridge this gap by studying empirically how TC determinants affect the livelihoods of SANASA beneficiaries in Sri Lanka.

This study has several theoretical, empirical, and practical importance and its findings expand the understanding of the way of improving the livelihoods of SANASA beneficiaries by mitigating TC. 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 clear research in the literature which were conducted focusing on the effect of TC

on livelihoods. In this nature, the study is important since the findings may help to design new strategies to improve LS by minimizing TC. Further, the study helps to understand the relative efficacy of TC theory in different contexts and how it works practically especially in the low-income group in Sri Lanka which generates broad importance. 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 reviewed transaction cost economics developed by Coase (1937) and initially followed by Williamson (1979) and the concept of sustainable livelihood inaugurated at the Institute of Development Studies (IDS) (Solesbury, 2003).

**Transaction Cost Economics:** Williamson (1979) explained that the transfer of a particular good or service between technologically separable interfaces is known as transaction cost. TC is defined as the transfer of a certain good or a service between technologically separable interfaces (Williamson, 1981). Coase (1937) stated that in the real world a perfectly competitive market does not exist and the exchange partners pay certain costs to eliminate the imperfection as the imperfection arises because of information scarcity. The asymmetrical information leads to bounded rationality for one party and opportunism for the opposite partners (Williamson, 1981). The bounded rationality of humans arises intrinsically due to the incapability of information handling (Simon, 1990). The barriers to collecting, processing, and evaluating the information to make proper transaction decisions are called bounded rationality (Zhang, 2009). The existence of asymmetrical information hinders transaction parties from making rational decisions which are known as bounded rationality and thereby encourages the exchange partners to behave opportunistically against the focal transaction party is identified as opportunism (Williamson, 1985). The opportunism of the exchange partners is defined as exchange partners' searching for self-interests with guile (Rokhan, Heide & Wathne, 2003). Opportunism exists when one exchange partner has more information and hence tends to behave opportunistically against the other exchange partner who has less information (Williamson, 1981). TC is determined by uncertainty, transaction frequency, and asset specificity (Williamson, 1985). Transaction uncertainty is defined as the unpredictability of future transactions due to the changeable behavior of exchange partners and the external transaction environment i.e., political, legal, policies, and social (Williamson, 1991). These particular unpredictable events differ in the terms of transaction agreements (Williamson, 1991). Transaction frequency is identified as how often the transaction is. It implies a repeat transaction with the same exchange partners (Williamson, 1991).

TC consists of four categories; searching, negotiation, monitoring, and enforcement (Priyanath, 2017; Williamson, 1985). The search cost is identified as the cost incurred to seek the supplier who offers the lowest price and customers who offer the highest prices (Hobbs, 1996; Priyanath, & Habaragamuwa, 2020). When a supplier with the lowest prices of input and a buyer who offers the highest price is found, then there exists a request to sign legally bound contracts or agreements which includes negotiation cost or contractive cost as payment needs to be made to the lawyer and other payments to provide goods to the parties (Hobbs, 1996; Williamson, 1985). The monitoring cost is identified as

the cost incurred in the monitoring of the transaction activities which are made according to the agreement (Hobbs, 1996). When the contract is registered under government regulations and hence the cost incurred within this process is called enforcement cost (Hobbs, 1996; Williamson, 1985). As a result of the transaction, the enforcement cost arises which is a definite payment that needs to be paid to the government when making a transaction (Hobbs, 1996; Williamson, 1985). Therefore, the producers have to incur costs to seek suppliers and buyers, negotiate with the exchange partners, contract on a long-term basis and monitor the transaction agreements mainly due to the existence of asymmetrical information (Hobbs, 1996; Dyer, 1997; Williamson, 1985). Hence, these costs are called TC (Dyer, 1997; Williamson, 1985; Zhang, 2006).

**Livelihood success:** The livelihood system is defined as a changing realm that integrates both opportunities and assets that exist in a group of people to achieve their goals, inspirations, interactions, and exposure to an array of either advantageous or harmful social, ecological, political, and economic perturbations which might constraint or assist capacities of the groups to make a living (Babulo et al., 2008). The concept of sustainable livelihood goes beyond merely meeting of basic needs of the poor in a sustainable way (Babulo, et al., 2008). It is identified as putting people at the midpoint of development and expanding the effectiveness of the development support (Department of International Development [DFID], 2008). A livelihood is identified as sustainable if it can meet and cope with and also if it can recover from shocks and stress, maintain and develop its assets and capabilities and finally be able to provide opportunities for the future generation which are sustainable and also which provide net benefits to the other livelihoods in the local and global arena and in short and long-term (Chambers & Conway, 1992). Further, Beall and Kanji (1999) identified livelihood as a broader variety of activities which are dealt with vulnerabilities and hazards, possessing strong interaction among members at levels of household, external, community, and institutional wise amidst the management of strong social networks. The widely adopted DFID sustainable livelihood framework has four strands. First, people have vulnerability contexts (sudden shocks, trends over time, and seasonal changes). Second, the capital assets people use for their livelihoods (natural capital, financial capital, physical capital, human capital, and social capital). Third, people's livelihood strategies (choices and methods), and fourth policies, institutions, and processes held to form people's access to assets and livelihood activities (Brocklesby & Fisher, 2003). Researchers who examined the success of sustainable livelihoods employed the capital asset-based approach for their studies since it is more influential for people's livelihood (Priyanath & Habaragamuwa, 2020; Priyanath & Lakshika, 2020). As mentioned above, five types of capital have been included in the framework. According to Scoones (1998), the assets that influence the sustainable livelihood analysis framework can be grouped into five major categories named; human, natural, social, financial, and physical. Moser (2006) identified that the resource endowment consists of two categories; tangible (financial, physical, natural) and intangible (social, human) assets. Scoones (2009) and Carney (1998) have used an asset-based approach in varying contexts but majorly in poverty evaluation, assessment of livelihood strategies, risk management, vulnerability, and improved livelihood outcomes. These impacts include ob-

taining a higher income for the targeted population, less vulnerability, better food security, and well-being, and usage of natural resources more sustainably (Scoones, 2009).

In most recent studies, human capital is highlighted as the main driving force deciding livelihood success (Avila-Foucat and Rodriguez-Robayo, 2018; Mushongah and Scoones, 2012). Simply, these are labor resources that are included in households consisting of both the dimensions of qualitative and quantitative. The dimensions such as age, household size, and the number of persons engaged in earning activities in a household are defined under the quantitative aspect. The natural resources which are useful in maintaining improved livelihoods are widely grouped into three major categories; forest resources, water resources, and forest resources, as well as other environmental resources, especially general pool resources, are also included (Avila-Foucat et al., 2018; López-Feldman, 2014). The major determinants of financial capital can be identified as credit accumulations, savings, subsidies, total income, pensions, and remittances. People save in terms of liquid assets such as lumpy property i.e., livestock for future benefit or as cash balances when markets are absent for financial intermediation (Devereux, 2001). Physical capital is identified as the basic infrastructure i.e., shelter, water, transportation, communication, energy, and the production tools and equipment which enable the people to aspire to their livelihoods. The physical capital is also associated with the infrastructure required for agricultural production and transportation, household living conditions i.e., household appliances, infrastructure, and basic needs (Riveros-Cañas, Rodríguez-Robayo, & Cesin, 2016). Social capital is identified as one of the most significant aspects by scholars of all types of capital under the livelihood success framework (Avila-Foucat et al., 2018). The major aspects of this include the cooperation among the households' membership among various institutional networks, groups, norms, relationships of trust, and reciprocity (Mushongah et al., 2012).

## HYPOTHESES

This study analyzes the impact of transactional cost determinants on the livelihood success of the SANASA beneficiaries. The transactions between the partners cannot be efficiently organized due to bounded rationality or in other words inadequate rational ability (Williamson, 1985). The TC is arisen because of fear of focal partners in making decisions due to the risk of exchange partners' opportunistic behavior (Hobbs, 1996; Williamson, 1985). Business firms are careful when they are making decisions in which they don't possess adequate information. According to Williamson (1985), members in asymmetrical information blocks make rational decisions, and hence it is called bounded rationality i.e., it limits the individual's capacity to receive, store, retrieve and possess information without any error. The increase in access and capability to assess information through the encouragement of formal and informal networks of small-scale producers in Sri Lanka has significantly reduced their bounded rationality (Priyanath & Premaratne, 2017; Priyanath & Buthsala, 2017). Consequently, it may lead to a higher TC. When TC increases it may impact significantly the economic performance (Priyanath et al., 2017), and further it may prevent the livelihood success of the cooperative members. Thus, it requires firms to incur costs to search for the information, assess and evaluate information, and get legal advice before making vital transaction decisions i.e., that the bounded rationality increases and hence shows a positive relationship with TC, ultimately would cost

the livelihood success (Hobbs, 1996). Thus, it hypothesizes that;

H1: Rational ability has a negative effect on the transaction cost of SANASA beneficiaries.

H2: Rational ability has a positive impact on the livelihood success of SANASA beneficiaries.

Opportunism is another determinant of TC, defined as which encourages exchange partners to behave opportunistically against the focal transaction parties (Williamson, 1985). It arises due to the availability of asymmetrical information in the market and thereby the transactions will be more costly. An exchange partner who has much information tends to behave opportunistically against the party who possesses less information (Williamson, 1981). Business firms need to incur costs in searching for prices, negotiating transaction details with exchange partners, and getting legal advice for agreements. When transaction parties have identical perceptions of mutual success, then the avoidance of possible opportunism and support towards each other through the exchange of opinions, ideas, and resources in a free manner will occur with the motive of enhancing livelihoods (Tsai & Ghoshal, 1998). Due to common understanding, transaction parties are influenced to trust each other as they expect that all are working for collective goals and thereby, they will not be hurt by the pursuit of self-interest of other members' i.e., opportunistic behavior (Miller, Besser & Weber, 2010). This higher TC resulting from the firm's success is discouraged (Priyanath et al., 2017). Therefore, it assumes that,

H3: Opportunism has a positive effect on the transaction cost of SANASA beneficiaries.

H4: Opportunism has a negative impact on the livelihood success of SANASA beneficiaries.

Uncertainty is a straightforward assumption and distinguishes it from the assumption of perfect information according to the neoclassical view. Information with regards to past, present, and future are not perfectly available and known due to different reasons. Without the existence of bounded rationality and opportunism, uncertainty would be less problematic due to general rules which would generally prevail (Williamson, 1985). To avoid uncertainty, under distinguished opportunistic behavior and bounded rationality, the agents establish and implement a structure of governance to reduce TC (Williamson, 1981). Mutual understanding among transaction parties in the avoidance of opportunistic behavior of the exchange partners, uncertainty in business, and encouragement to share resources and opportunities with a minimum negotiation cost (Chiu, Hsu & Wang, 2006) and this commonality among transaction parties leads to decrease TC and thereby improving livelihoods of the members in the community. Thus, this study hypothesizes that;

H5: Uncertainty has a positive effect on the transaction cost of SANASA beneficiaries.

H6: Uncertainty has a negative impact on the livelihood success of SANASA beneficiaries.

Transaction frequency is identified as the repetition of similar transactions (Everaert, Sarens, & Rommel, 2010). Further, it was elaborated on the frequency of transactions occurring between business enterprises and exchange partners which help them to generate a relational contract (Boyle, Dwyer, Robicheaux & Simpson, 1992). The relational contract is known as social embeddedness and as self-enforcing governance (Dyer & Singh, 1998; Noordewier, John & Nevin, 1990; Uzzi, 1999). The cooperatives and mutual

benefits are the main considerations in the relational contract (Lu, 2007). These relational contracts lead to an increase in the level of satisfaction between present exchange partners preventing the requirement to seek a new partner and decreasing transaction costs incurred in searching for a novel reliable partner (Doucette, 1996). Hence, transaction frequency decreases TC. Thus, the study hypothesizes that;

H7: Transaction frequency has a negative effect on the transaction cost of SANASA beneficiaries

H8: Transaction frequency has a positive impact on the livelihood success of SANASA beneficiaries

This study attempts to discuss the effect of TC on the relationship between TC determinants and the livelihoods of SANASA beneficiaries. Therefore, it is necessary to identify the overall relationship among TC determinants, TC, and livelihood success of SANASA beneficiaries. When TC is high, it may avert economic performance as stated by Priyanath and Premarathna (2017) and further, they confirmed when a firm faces high TC, it will discourage the firm's success. According to the hypotheses developed in the above section, opportunism, and uncertainty increase the TC while rational ability and frequency lead to a decrease in TC. SANASA beneficiaries have to incur additional costs based on the opportunism of other parties in making their livelihood. Although the additional costs are due to this opportunism, the parties act opportunistically because the SANASA beneficiaries have limited rationality, they face uncertainty over individual behavior and the environment. These additional costs reduce the success of the livelihood of SANASA beneficiaries. Accordingly, transaction cost determinants have a negative impact on livelihood success, and transaction costs as a mediating variable exacerbate that negative impact. Therefore, this study assumes that:

H9: Transaction cost has a mediate effect on the relationship between transaction cost determinants and the livelihood success of SANASA beneficiaries.

## MATERIALS AND METHODS

The main focus of this study is to identify the effect of TC determinants on the livelihood success of SANASA beneficiaries. The study mainly used a deductive and explanatory approach and utilized a quantitative research design. Primary data were collected from SANASA beneficiaries using multistage sampling techniques. First, the study selected the Colombo district randomly. Second, a list of SANASA societies that function in the Colombo district was collected from the Department of Cooperative Development. Third, one SANASA society was randomly selected from each divisional secretariat among thirteen DS divisions in the Colombo district. Fourth, respondents who were engaging with SANASA for income-generating activities were selected as a cluster to gather data. Therefore, the sample size used in this study is 130 SANASA beneficiaries.

The major research instrument used in this study was the questionnaire which was grouped widely into three sections; demographic section, the aspects of transaction cost, and livelihood success. Each respondent was asked to fill out the questionnaire after providing a brief introduction and explaining the study's objectives. Under the demographic section, variables such as the age of the respondent, gender, income level, marital status, and the highest educational qualification were questioned. The section on transaction cost was further subdivided into two sub-sections; transaction costs and TC determinants. These sections on transaction cost and livelihood success utilized a seven-point Likert

Scale in which the respondents were asked to specify the degree to which they agree or disagree with various statements. The Seven-Point Likert's scale having ratings of "strongly disagree" (1) and "strongly disagree" (7) were utilized.

In this study, the transaction cost was measured by the adoption of Williamson's (1985) classification i.e., searching, negotiating, monitoring, and enforcement costs. To measure the search cost, six items were adopted which was done by Dyer and Chu (2003). Five items were employed to measure negotiation costs as adopted by Dyer and Chu (2003). Nguyen and Crase (2011) and Dyer and Chu (2003) used four items to measure monitoring cost and thereby it was adopted in this study. To measure enforcement costs, four items were adopted (Dyer and Chu, 2003). Livelihood success was measured using five dimensions i.e., physical, social, natural, financial, and human capital (Gunasekara, Premaratne & Priyanath, 2017). The opportunism of the exchange partners against SANASA beneficiaries was identified as the behavior of seeking self-interests with the guile of the exchange partners. This was measured using eight items i.e. sincerity in dealings, exaggeration of needs, truthfulness in dealings, dishonesty in dealings, good faith bargaining, cheating in dealing, unfairness in dealing, and agreement which was engaged in by the exchange partner. These eight items were adopted based on Dahlstrom and Nygaard (1999), and Rokkan, Heide, and Wathne (2003).

This study measured the rational ability of the SANASA beneficiaries using three dimensions i.e. ability to access information which means lower information asymmetry, and ability to assess information as the study observed that not only the information asymmetry but also the inability to evaluate information averts decision-making ability of the human beings and ability to make good and effective decisions. Hence, this study used eight items to measure the ability to access information, four items were employed to measure the ability to assess information, and four items were used to measure the decision-making ability.

Environmental uncertainty is measured using uncertainty in demand and supply forces. Demand uncertainty was measured using four items as used in empirical studies by scholars like John and Weitz (1988), and Noordeweir et al. (1990). Supply uncertainty was measured employing four items that were adopted by Chen and Chen (2003). In contrast, the measurement of behavioral uncertainty was been operationalized using the degree of difficulty in assessing the performance of the exchange partners (Rindfleisch & Heide, 1997; Shin, 2003) and risk of opportunistic behavior of the exchange partners were the two items employed in this study to measure behavioral uncertainty of the livelihood beneficiaries as previously developed by Chen (2002) and adopted by Kamyabi and Devi (2011). Transaction frequency in this study was measured employing a simple item: the repetition of transactions between SANASA beneficiaries and exchange partners as adopted by John and Weitz (1988), and Everaert et al. (2010). Livelihood success was measured using five dimensions including human, physical, natural, financial, and social capital as adopted by Gunasekara, Premaratne, and Priyanath (2017).

The collected data were recorded and coded into a Microsoft Excel sheet and then it was exported to Smart PLS (Version 3) as a CSV file. Through Partial Least Square Structural Equation Modeling (PLS-SEM), the evaluation of measurements of variables and hypothesis testing were done. The main software used to analyze PLS-SEM was Smart PLS

version 3. Under the measurements of variables, the first-order analysis, and second-order analysis were assessed individually. According to first-order analysis, the validity and reliability of these particular constructs were tested depending on items and indicators in the questionnaire. The validity of the constructs was measured via convergent validity and discriminant validity. The reliability is assessed through indicator reliability and internal consistency reliability. If there is successful reliability and validity exist, then it is considered good to fit the second-order analysis i.e., the final model. It is evaluated by utilizing the validity and reliability of the indicators and latent variables. Further, the multicollinearity, significance of path coefficients, coefficients of determination, effect size, and predictive relevance were assessed under hypothesis testing in the inner model.

## RESULTS

The 130 respondents indicated that 50 designating 38.46% were males and 80 representing 61.54% were females. The age statistics exhibited that the least age groups were those aged between 31 to 40 years which represented 8.46% of the respondents sampled for the study. Further, the highest age groups were those between 21-30 years. These age groups were made up of 79 respondents which represented 60.77% of the respondents. The highest age group was followed by those between 41- 50 years and 51 years and above. This age group represents 20% and 10.76% of the respondents respectively. Furthermore, the marital status of respondents shows that 30 have never been married, 92 were married, 6 were separated and 2 were widows. Percentage-wise 23.08% were never married, 70.77% were married, 4.62% were separated and 1.54% were widows. In terms of education, none of the respondents was without any formal education. The most represented educational levels were those up to the Advanced level which was made up of 55 respondents or 42.30% of the respondents. This was followed by 51 respondents representing 39.23% who were with a diploma and 22 respondents representing 16.92% who were with a bachelor's degree. The least represented educational level was those up to the ordinary level who were 2 in number or 1.53% of the respondents. 29 of the respondents, or 22.38% of the respondents earned less than Rs. 20,000; 41, or 31.54% earned between Rs. 20,000- Rs. 40,000; 32 respondents, or 24.62% earned between Rs. 40,000- Rs. 60,000 and Rs. 60,000- Rs. 80,000 earned by 18 which was 13.85% respectively; 10 respondents or 7.69% of the respondents earned above Rs. 80,000.

The measurement model was tested under PLS-SEM to establish the construct reliability and validity of the outer model. The overall assessment was conducted under two steps; first-order and second-order analysis. In the first step, the reliability scores between questionnaire items with the construct were generated under first-order analysis. Table 01 depicts that the generated outer loading values are above the minimum threshold criterion of 0.7. Contrary, the T-test posits that the factor loadings were statistically significant because all outer loadings are above 1.96 at a 95% confidence level depicting that altogether the constructs under first-order analysis satisfied indicator reliability. Under internal consistency reliability, table 01 further proved that both Cronbach's  $\alpha$  (Cro.  $\alpha$ ) and Composite Reliability (CR) values are above 0.7. Further, table 01 posited the convergent validity of first-order constructs in the dependent variable since all values were above 0.5 (AVE should be equal to or greater than 0.5).

Table 01: Analysis of the first-order constructs

	T Stat	Load-ings	Cro. α	CR	AVE
<b>1. Ability to assess information (Asses Info.)</b>			<b>0.967</b>	<b>0.976</b>	<b>0.911</b>
Ability to evaluate information about the behavior of market prices.	147.31	0.965			
Ability to evaluate the input prices and quality related to products before the purchase decision.	54.00	0.942			
Ability to evaluate the potential threat coming from competitors.	60.52	0.942			
Ability to evaluate the change in the business environment, political situations, and external shocks.	129.52	0.967			
<b>2. Ability to make decisions (DMA)</b>			<b>0.983</b>	<b>0.988</b>	<b>0.952</b>
Ability to make a satisfactory sale decision evaluating information	294.28	0.981			
Ability to face the threats coming from competitors	308.53	0.983			
Ability to face the changes coming from the external business environment.	128.14	0.972			
Ability to make good transaction decisions avoiding various issues	137.14	0.967			
<b>3. Ability to access information (Access Info.)</b>			<b>0.987</b>	<b>0.989</b>	<b>0.915</b>
Ability to find accurate information about market prices for a product	48.55	0.938			
Ability to find sufficient information about new markets and buyers	39.14	0.929			
Ability to find sufficient information about reliable buyers	124.10	0.965			
Ability to find sufficient information about threats coming from the competitors	256.24	0.977			
Ability to find accurate information about input prices.	147.98	0.970			
Ability to find sufficient information about new input suppliers	148.70	0.961			
Ability to find sufficient information about reliable suppliers	84.57	0.946			
Ability to find sufficient information about product techniques	161.54	0.969			
<b>4. Buyers' opportunism (BOPPO)</b>			<b>0.983</b>	<b>0.985</b>	<b>0.882</b>
Buyers do not provide a truthful clear picture of the deal when negotiating.	35.86	0.934			
Total honesty will not be expected from our buyers when negotiating.	55.73	0.933			
Generally, most buyers exaggerate their needs to get what they want	34.72	0.911			
Buyers always change the pre-agreed facts to get their benefits	135.82	0.960			
Complete good-faith deals will not be expected from buyers	141.30	0.960			
Need to check carefully every step of the transaction that is made with buyers to avoid cheating	27.63	0.888			
Generally, most buyers are dishonest in transaction activates	156.06	0.966			
Generally, most buyers are not sincere in transaction activities.	92.77	0.949			
Generally, most buyers do not fair in transaction activities	98.68	0.948			
<b>5. Suppliers' opportunism (SOPPO)</b>			<b>0.989</b>	<b>0.990</b>	<b>0.917</b>
Suppliers do not provide a truthful clear picture of the deal when negotiating.	116.15	0.967			
Complete honesty will not be expected from suppliers when negotiating.	118.94	0.953			
Generally, most suppliers exaggerate their needs to get what they want	142.07	0.971			
Suppliers always change the pre-agreed facts to get their benefits	188.23	0.972			
Complete good-faith deals will not be expected from suppliers	203.87	0.978			
Need to check carefully every step of the transaction that is made with suppliers to avoid the cheating	29.55	0.919			
Generally, most of the suppliers are dishonest in transaction activates	49.71	0.936			
Generally, most of the suppliers are not sincere in transaction activities.	131.66	0.963			
Generally, most of the suppliers do not fair in transaction activities	137.71	0.958			
<b>6. Behavioral uncertainty (BUNCERT)</b>			<b>0.921</b>	<b>0.962</b>	<b>0.926</b>
It is very easy to understand the performance of buyers	54.16	0.962			
The risk of opportunistic behavior of buyers is very low	62.74	0.963			
<b>7. Environmental uncertainty (EUNCERT)</b>			<b>0.983</b>	<b>0.986</b>	<b>0.895</b>
Future market shares for the product can easily be forecasted	45.65	0.930			
Future sales volume for the product can easily be forecasted	70.72	0.945			
Future prices for the product can easily be forecasted	38.56	0.944			
Customers' demand for the product in the future is stable	89.24	0.953			
The future market for input supply can easily be forecasted	93.91	0.959			

Future input supply can easily be forecasted	170.41	0.969			
Future input prices can easily be forecasted	26.75	0.910			
Input supply for the product in the future is stable	122.55	0.957			
<b>8. Transaction frequency (Frequency)</b>			0.960	0.980	0.961
Sale substantially higher number of products for regular buyers.	264.25	0.981			
Purchase a substantially higher amount of inputs from regular suppliers.	264.25	0.981			
<b>9. Enforcement cost (Enfo. Cost)</b>			0.961	0.972	0.897
There is a cost to resolving transaction disputes	39.13	0.943			
There is a labor cost to resolve transaction disputes.	154.62	0.969			
There is a traveling cost to resolve transaction disputes	116.97	0.964			
There is a communication cost to resolving transaction disputes	25.72	0.911			
<b>10. Monitoring cost (Moni. Cost)</b>			0.984	0.988	0.955
There is a cost for monitoring whether the transaction activities are undertaken according to the agreements.	172.80	0.975			
There is a labor cost for monitoring whether the transaction activities are undertaken according to the agreements.	199.88	0.981			
There is a traveling cost for monitoring whether the transaction activities are undertaken according to the agreements.	166.61	0.980			
There is a communication cost for monitoring whether the transaction activities are undertaken according to the agreements.	114.39	0.974			
<b>11. Negotiation cost (Nego. Cost)</b>			0.980	0.987	0.962
There is a labor cost to handle legal matters and negotiate with exchange partners to decide details relating to the transaction.	129.15	0.975			
There is a traveling cost to handle legal matters and negotiate with exchange partners to decide on details relating to the transaction.	337.67	0.987			
There is a communication cost to handle legal matters and negotiating with exchange partners to decide details relating to transactions.	230.11	0.981			
<b>12. Searching cost (Search Cost)</b>			0.976	0.984	0.954
We incur costs to search for new buyers and suppliers.	325.18	0.986			
There is a labor cost to handle advertising activities	192.36	0.975			
There is a traveling cost to handle advertising activities	129.99	0.968			
<b>13. Financial capital (Finance Cap.)</b>			0.956	0.979	0.958
Income has increased due to Sanasa benefits	146.82	0.979			
Savings have increased due to Sanasa benefits	135.66	0.978			
<b>14. Human capital (Human Cap.)</b>			0.984	0.987	0.939
Improved professional knowledge because of Sanasa	131.86	0.968			
Improved general knowledge	121.04	0.963			
Improved skills	304.97	0.982			
Gained a lot of experience in doing business	85.84	0.964			
Improved the efficiency	170.86	0.969			
<b>15. Natural capital (Natural Cap.)</b>			0.983	0.989	0.967
The available natural resources are sufficient for the business	301.44	0.982			
The risk of natural disasters is low in this area	229.51	0.982			
There is an increase in the supply of natural resources due to Sanasa's assistance and benefits	352.42	0.986			
<b>16. Physical capital (Physical Cap.)</b>			0.978	0.989	0.978
There is an increase in the number of buildings and machinery	377.97	0.989			
There is an increase in land assets due to Sanasa	389.07	0.989			
<b>17. Social capital (Social Cap.)</b>			0.964	0.982	0.966
There is an increase in the mutual corporation among the Sanasa members	304.52	0.983			
There is an increase in trust among the Sanasa members	316.23	0.983			

Source: Survey data, 2022

The discriminant validity, table 02 depicted that none of the inter-construct correlation values are above the square root of the AVE and then this satisfied the criterion of discriminant validity of the first-order constructs.

Table 2: Discriminant validity of first-order constructs

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Assess Info.	<b>.88</b>																
2. DMA	.61	<b>.87</b>															
3. Access Info.	.71	.59	<b>.91</b>														
4. BOPPO	.74	.66	.62	<b>.92</b>													
5. SOPPO	.78	.71	.82	.67	<b>.93</b>												
6. BUCERT	.42	.40	.37	.43	.47	<b>.87</b>											
7. EUNCERT	.52	.50	.45	.54	.53	.72	<b>.86</b>										
8. Frequency	.63	.69	.58	.58	.67	.52	.71	<b>.92</b>									
9. Enfo. Cost	.58	.64	.57	.56	.58	.44	.61	.81	<b>.91</b>								
10. Moni. Cost	.43	.29	.44	.25	.43	.28	.26	.35	.37	<b>.75</b>							
11. Nego. Cost	.65	.54	.67	.49	.79	.38	.41	.56	.49	.51	<b>.88</b>						
12. Search Cost	.67	.56	.67	.49	.78	.35	.42	.61	.52	.50	.87	<b>.86</b>					
13. Finance Cap	.40	.26	.45	.32	.35	.11	.17	.26	.27	.24	.32	.34	<b>.84</b>				
14. Human Cap	.62	.43	.63	.54	.56	.20	.25	.36	.34	.29	.44	.43	.66	<b>.94</b>			
15. Natural Cap	.57	.56	.58	.44	.61	.51	.57	.56	.58	.44	.61	.54	.26	.45	<b>.82</b>		
16. Physical Cap	.44	.25	.43	.28	.26	.35	.44	.25	.43	.28	.26	.35	.43	.63	.54	<b>.76</b>	
17. Social Cap	.37	.49	.59	.38	.41	.56	.57	.42	.69	.38	.43	.56	.56	.58	.44	.61	<b>.81</b>

Source: Survey Data, 2021.

Based on the scores of latent variables of the first-order constructs, the second-order level constructs were formed as demonstrated in table 3. As computed in the first-order level, the same reliable and validity tests were performed in the second-order- level as well. Thus, altogether indicator reliability of the thirteen latent variables, including five constructs under the dependent variable livelihood success, four constructs under the mediate variable (TC), and four constructs as independent variables in second order was evaluated. According to table 3, all path coefficients of

standardized factor loadings were above the threshold value of 0.7. Contrarily, all the t-statistics were above 1.96 and hence it demonstrated that all are significant at 95% confidence levels. Table 03 further depicted that Cronbach's  $\alpha$  was higher or greater than the required value of 0.7 and composite reliability was also larger than the recommended value of 0.7. Further, the computed results confirmed that the convergent validity of the second-order construct had an AVE above 0.5.

Table 03: Analysis of the second-order constructs

Construct	T- Statistics	Loadings	Cro. $\alpha$	CR	AVE
<b>Rational Ability</b>			<b>0.984</b>	<b>0.990</b>	<b>0.969</b>
Ability to access information	<b>163.65</b>	<b>0.979</b>			
Ability to assess information	<b>660.62</b>	<b>0.993</b>			
Ability to make decisions	<b>192.87</b>	<b>0.982</b>			
<b>Uncertainty</b>			<b>0.959</b>	<b>0.980</b>	<b>0.960</b>
Behavioral uncertainty	<b>221.62</b>	<b>0.980</b>			
Environmental uncertainty	<b>198.87</b>	<b>0.980</b>			
<b>Opportunism</b>			<b>0.991</b>	<b>0.996</b>	<b>0.991</b>
Buyers' opportunism	<b>909.72</b>	<b>0.996</b>			
Suppliers' opportunism	<b>855.09</b>	<b>0.995</b>			
<b>Transaction frequency</b>			<b>0.991</b>	<b>0.995</b>	<b>0.978</b>
Transaction frequency	<b>65.29</b>	<b>0.952</b>			
<b>Transaction costs</b>			<b>0.990</b>	<b>0.993</b>	<b>0.972</b>
Monitoring cost	<b>266.34</b>	<b>0.987</b>			
Enforcement cost	<b>356.64</b>	<b>0.987</b>			
Negotiation cost	<b>511.46</b>	<b>0.992</b>			
Searching cost	<b>185.09</b>	<b>0.978</b>			
<b>Livelihood success</b>			<b>0.992</b>	<b>0.994</b>	<b>0.968</b>
Financial capital	<b>108.04</b>	<b>0.968</b>			
Human capital	<b>371.72</b>	<b>0.988</b>			
Natural capital	<b>348.60</b>	<b>0.987</b>			
Physical capital	<b>280.61</b>	<b>0.985</b>			
Social capital	<b>632.71</b>	<b>0.992</b>			

Source: Survey data, 2022



Thereafter the discriminant validity of second-order constructs was computed and presented in table 04 and demonstrated that none of the inter-construct correlation values

was above the square root of AVE hence concluded that it satisfied the criterion of discriminant validity of the second-order constructs.

Table 04: Discriminant validity of the second-order constructs

	1	2	3	4	5	6
1. Livelihood success	<b>0.984</b>					
2. Opportunism	0.756	<b>0.996</b>				
3. Rational ability	0.800	0.930	<b>0.985</b>			
4. Transaction costs	0.832	0.948	0.950	<b>0.986</b>		
5. Frequency	0.851	0.879	0.898	0.943	<b>0.998</b>	
6. Uncertainty	0.839	0.925	0.919	0.951	0.970	<b>0.980</b>

Source: Survey data, 2022

This study assessed the multicollinearity of the structural model with the support of VIF value. The collinearity implied that the two constructs were measuring the same variable and it happened when the correlations among constructs were high (Hair, Ringle, and Sarstedt, 2012).

Table 05: Multicollinearity

	VIF
Rational ability	1.711
Opportunism	1.310
Uncertainty	2.102
Frequency	1.588
Transaction costs	3.587

The collinearity among dependent variables in the structural model was lower than the threshold value of 5 as depicted

in table 05, implying that there were no issues of multicollinearity detected among variables when the VIF value was lower than the recommended threshold value of 5, thus there was no issue of multicollinearity among variables.

In the evaluation of the structural model, the second step involved assessing the significance of the hypothesized relationships. To evaluate path coefficients, as the first step, the PLS algorithm was conducted, and thereafter it was vital to identify the significance, magnitude, and path coefficients' signs. The t-values were used to estimate the statistical significance of each path coefficient. The critical t-value for a two-tailed test was identified as 1.96 at a significance level of 0.05 (Hair et al., 2012). Thus, table 06 exemplified hypotheses that were supported and not supported based on t-value.

Table 06: Path coefficients and hypotheses

Hypotheses	Path coefficients	T Statistics	P Values	Decision
<b>H1: Rational ability -&gt; Transaction costs</b>	0.277	2.928	0.004	<b>Supported</b>
<b>H2: Rational ability -&gt; Livelihood success</b>	-0.149	2.119	0.014	<b>Supported</b>
<b>H3: Opportunism -&gt; Transaction costs</b>	0.378	2.614	0.009	<b>Supported</b>
<b>H4: Opportunism -&gt; Livelihood success</b>	-0.393	2.227	0.027	<b>Supported</b>
<b>H5: Frequency -&gt; Transaction costs</b>	0.439	3.694	0.000	<b>Supported</b>
<b>H6: Frequency -&gt; Livelihood success</b>	-0.323	1.528	0.127	<b>Not Supported</b>
<b>H7: Uncertainty -&gt; Transaction costs</b>	0.079	0.389	0.698	<b>Not Supported</b>
<b>H8: Uncertainty -&gt; Livelihood success</b>	-0.324	1.180	0.239	<b>Not Supported</b>
<b>H9: Transaction costs -&gt; Livelihood success</b>	-0.451	2.287	0.036	<b>Supported</b>

R<sup>2</sup> for Livelihood success = 0.74, and for TC = 0.49

Source: Survey data, 2022.

The mediating effect as depicted in table 07, was identified by obtaining the bootstrapping result under the second-order construct in SmartPLS. There should be significance t-statistic value relevance with path coefficient value and the

relationship between three variables to establish a significant mediate effect on the relationship between the two variables. According to the computations, it was identified that there was a mediating effect of TC between TC determinants and livelihood success.

Table 07: The mediate effect

Relationship	$\beta$	T Statistics	P Values	Decision
<b>Rational ability -&gt; Transaction costs -&gt; Livelihood success</b>	0.125	2.230	0.030	<b>Partial Mediation</b>
<b>Opportunism -&gt; Transaction costs -&gt; Livelihood success</b>	-0.170	2.340	0.021	<b>Partial Mediation</b>

Source: Survey data, 2022.

Table 06 demonstrates that there is a negative relationship between rational ability and TC ( $\beta = -0.277$  and  $t$ -value = 2.928). It satisfied hypothesis H1. It implies that if the SANASA beneficiaries have adequate and reliable information accompanied by better market experiences, their rational ability of him/her is relatively high, and this it affects the decrease of TC. Priyanath and Buthsala (2017) mentioned that rational ability has a significant negative impact on the TC of Small Industries in Sri Lanka. Ranatunga et al. (2021) revealed similar situations in Small and Medium Scale Industries in Sri Lanka. They mentioned that rational ability has a negative impact on TC. Further, table 06 depicts that rational ability maintains a positive relationship with livelihood success ( $\beta = 0.149$  and  $t$ -value 2.119) satisfying the hypothesis H2. Thus, the results confirmed that the increase in the rationality of the SANASA beneficiaries leads to increase livelihood success. If they have accurate and timely information, it might lead to improving rationality. When individuals have the ability to access information, obviously it creates accurate judgments (Priyanath et al., 2016). The finding shows that the SANASA beneficiaries who have relatively advanced rationality yield more success in their livelihoods.

Table 06 above indicates that there is a significant positive relationship between opportunism with transaction cost ( $\beta = 0.378$  and  $t$ -value = 2.614). This satisfies hypothesis H3 of the study. According to Foss & Weber (2016), opportunism takes the front seat in determining TC. As well a study conducted by Priyanath and Premaratne (2017) has stated that opportunism among small-scale operators in Sri Lanka is relatively high. The small-scale market in Sri Lanka operates with information asymmetry due to a lack of education, market experience, advanced technology, and developed infrastructure, which leads to experience opportunism. This opportunism has led to retard the livelihood success of the SANASA beneficiaries representing a negative relationship between opportunism and livelihood success. Table 06 shows this relationship expressing the values as,  $\beta = -0.393$  and  $t$ -value = 2.227. Therefore, this result supports hypothesis H4. Opportunism always leads to making transactional powers unstable (Mithrananda & Priyanath, 2020). Hence, the ones who do not have adequate information and related experience will face opportunism of exchange partners that affect failures in their livelihood activities. Thus, the results confirmed that the SANASA beneficiaries suffer a hazard from the opportunistic behavior of exchange partners and opportunism discourages the livelihood success of the SANASA beneficiaries.

The results in table 06 indicate that transaction frequency is negatively associated with TC ( $\beta = -0.439$  and  $t$ -value = 3.694). The results support hypothesis H5. It implies that repeated transaction leads to decrease TC. However, transaction frequency has not significantly influenced on livelihood success of the SANASA beneficiaries. The results do not support hypothesis H6. Uncertainty is another prominent determinant when discussing TC among SANASA beneficiaries. Table 06 generated with the assistance of gathered data represents that there is no significant relationship between uncertainty and TC. The results do not accept hypothesis H7. Further, hypothesis H8 is not statistically accepted but it represents a negative relationship between uncertainty and the livelihood success of the SANASA beneficiaries. Finally, table 06 depicts that there is a significant negative relationship between TC and livelihood success ( $\beta = -0.451$  and  $t$ -value = 2.287). Thus, it satisfies the H9. Searching costs, negotiation costs, monitoring costs, and enforcement costs result in

limitations in one's livelihood successes (Priyanath & Lakshika, 2020). A livelihood is sustainable when it can cope with and recover from external and internal shocks (Scoones, 2015; Serrat, 2017).

Further, to strengthen the study findings, table 07 has analyzed the mediate effect of TC between the TC determinants and livelihood success. It represents that TC acts as a significant partial mediator between opportunism and livelihood success ( $\beta = -0.170$  and  $t$  statistics = 2.340). The mediate role of TC between rational ability and livelihood success also has been assessed. Table 07 shows that there is a significant partial mediation effect of TC between rational ability and livelihood success ( $\beta = 0.125$  and  $t$  statistics = 2.330). Finally, the mediate effect of TC between transaction frequency and livelihood success has been analyzed. However, according to the results, it is proved that the TC formed with the major determinants such as opportunism, and rational ability generate negative influences on means of sustainable livelihoods and the TC acts as a mediate role between several determinants (opportunism and rational ability) and the livelihood success among the SANASA beneficiaries.

## CONCLUSION

The study revealed that there is a positive relationship between opportunism and TC while opportunism maintains a negative relationship with the livelihood success of the SANASA beneficiaries. TC acts as a mediating role between opportunism and livelihood success. It has been recognized that information asymmetry plays a major role in generating opportunism among the SANASA beneficiaries. As they are a set of rural poor communities, they are lagging in education, experience, technology, and infrastructure facilities. Hence, they are unable to access and assess information and made poor transaction decisions. This scenario influences negatively their livelihoods. The study discovered that there is a negative relationship between rational ability with TC and a positive relationship between rational ability and the livelihood success of the beneficiaries. Further, TC plays a mediate role between rational ability and the livelihood success of the beneficiaries. If the beneficiaries are relatively more rational and can make the best decisions at the best time, it leads to reduce the scope of TC among the beneficiaries and it might lead to uplifting their livelihoods. The study exposed that transaction uncertainty leads to influences the livelihoods of the beneficiaries negatively. Transaction uncertainty is relatively high among the SANASA beneficiaries. Since they operate on a smaller scale, they do not have advanced technological approaches and better educational experiences. The transaction uncertainty disturbs the livelihoods of the SANASA beneficiaries in terms of both environmental and behavioral uncertainty.

The study has made several contributions by synthesizing livelihood success, TC determinants, and TC into a novel framework and empirically testing it. In this way, the study extended the understanding of the relative worth of theories into a different economic and social context. The empirical results provided sufficient evidence to recognize the strength of TC and its determinants' negative impact on the livelihood success of the SANASA beneficiaries confirming a mediating role of the TC in between TC determinants and livelihood success beneficiaries. Hence, the study supported the insights of TC theory revealing that the SANASA livelihood beneficiaries can be impacted by the increase in TC attributed to the livelihood success decreasing with the increase in TC determinants and expanding the TC.

This study has vital implications for both academics and policymakers. The study crucially recommends that the policymakers take a critical look at those variables as they have affected the livelihood success of SANASA beneficiaries and the success of SANASA philosophy. It is also highly recommended that the SANASA organization invest in understanding TC faced by livelihood beneficiaries and reduce the TC associated with their livelihood success achievement. TC of the SANASA beneficiaries arises due to asymmetric information. It is recommended to develop strategies to mitigate TC by improving the rational ability and transaction frequency of SANASA beneficiaries, helping to avoid the opportunistic behavior of exchange partners and decreasing the transaction uncertainty, thereby improving livelihood success.

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