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TRANSACTION COST DETERMINANTS AND THEIR IMPACT ON THE LIVELIHOODS OF THE *SANASA* BENEFICIARIES IN BADULLA DISTRICT IN SRI LANKA

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Abstract

Scholars have emphasized that Transaction Costs (TC) impede the livelihood success (LS) of small-scale producers. However, the absence of systematic empirical academic work which evaluates how TC affects the LS, particularly small-scale producers creates a gap in the literature. This study attempted to bridge this gap by analyzing the impact of TC on the LS particularly *Sanasa* beneficiaries who are involving livelihood activities with the support of *Sanasa* organization in Sri Lanka. The study gathered primary data from 273 members of *Sanasa* who were engaging in livelihood activities using multi-stage sampling. Data were gathered for a structured questionnaire having face-to-face interviews. Partial Least Square Structural Equation Modeling (PLS-SEM) was used to analyze data. The results revealed that the opportunism of exchange partners has a positive impact on TC and a negative impact on the LS of the *Sanasa* beneficiaries. The rational ability of *Sanasa* beneficiaries has a positive influence on LS and a negative effect on TC. Transaction uncertainty negatively relates to the LS while asset specificity has a positive effect on the LS of the Sanasa beneficiaries. Further, the results revealed that TC has a strong negative relationship with the LS of *Sanasa* beneficiaries. Thus, empirical results confirmed that TC obstructs the LS of *Sanasa* beneficiaries. Developing a mechanism to empower *Sanasa* beneficiaries to access information relating to the transaction using modern technology to contact reliable transaction partners would lead to improving livelihoods by minimizing TC.

Keywords: Livelihood Success, Opportunism, Rational Ability, Sanasa Beneficiaries, Transaction Costs.

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1. 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. It is the apex body of over 8000 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, 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 microfinance (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 (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; Storey, 1999). Considering the product market, micro-level producers fail to compete with 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.

Nooteboom (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 (Carree & Thurik, 2000; Nooteboom, 1993; Yoshino & Taghizadeh-Hesary, 2016). Often, they have poor benefits from economies of experience and inadequate capacity to access knowledge (Carree & Thurik, 2000; 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 (Nooteboom 1993; Tommaso & Dubbini, 2000; 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 (Carree & Thurik, 2000; Okoye, et al., 2016). Thus, TC can be identified as a prominent criterion in generating negative influences along with discouraging the livelihood success of small producers (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 was 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.

2. THEORETICAL BACKGROUND

Transaction Cost Economics: As per Coase (1937), market transactions are not costless and the costs incurred within the exchange are called TC. Several researchers have focused on investigating TC and they have put forward that generating TC impedes the success of a particular activity and creates extra financial losses (Dyer & Chu, 2003; Priyanath & Premarathne, 2016; Williamson, 1985). Hence, TC is the cost attached to economic exchange (Coase, 1937). Maltsogolou and Tanyeri-Abur (2005), have classified TC as information costs, negotiation costs, monitoring costs, and enforcement costs. Bhattarai & Bhusal (2015) have classified TC as 'ex-ante' costs and 'ex-post' costs. Under ex-post they have categorized watching cost, waiting for cost, and negotiating cost. Under ex-ante it has categorized communication costs and formation costs. The producer needs to incur costs in searching for relevant information, negotiating with exchange partners, monitoring transaction agreements, and enforcing rules and regulations when necessary due to the asymmetrical information (Dyer, 1997; Hobbs, 1996; Williamson, 1985). According to Hobbs (1996) and Priyanto, Mazkie & Khusaini (2014) transactions can be made without any costs where there is perfect knowledge about the market. Since it cannot observe perfect market structures with perfectly reliable and accurate information, most probably TC is generated among transacting parties.

Williamson (1985) explained that TC is arisen due to information asymmetric between transaction parties. If one has more information than the other, he/she has a chance to gain more benefit from the transaction by misleading the other party. This opportunistic behavior is the key determinant of TC because the party who has less information makes the cost (searching reliable partners for transactions, the highest price to sale, lowest price to purchase, negotiating with other parties, reaching an agreement, monitoring transactions, etc.) to safeguard the transaction (Dyer, 1997; Hobbs, 1996) from opportunism. Foss and Weber (2016) explain as a result of information asymmetry, producers get bound by rationality. They are not able to make the best decisions out of available information. Thus, bounded rationality is also a key determinant of TC. On the other hand, transaction uncertainty creates TC because the transaction needs more safeguards if the future behaviour of transaction partners is uncertain. According to Carey & Lawson (2011), uncertainty means the inability of forecasting the future. Uncertainty relates to behaviour and environment. The inability of predicting changes in human behaviour is behavioural uncertainty (John & Weitz, 1988) while the inability of predicting natural changes in the transaction such as price, quality, and quantity is identified as environmental uncertainty (Carey & Lawson, 2011). When the producers try to cope with uncertainty, there also generate losses with transaction costs (Dyer, 1997; Hobbs, 1996; Williamson, 1985).

Livelihoods: Livelihoods are the means of capacities, assets, and activities needed for people to make a living (Scoones, 2009; Hua et al. 2017). In the sustainable livelihoods approach, the resources are referred to as 'assets' or 'capitals' (Hua et al. 2017). There are five main such assets or capital as; Human Assets, Financial Assets, Natural Assets, Physical Assets, and Social Assets (Kuang et al., 2020). Sustainable livelihood goes beyond meeting the basic needs of the poor in a sustainable manner (Serrat, 2017). The sustainable livelihood approach is a way of thinking about the objectives, scope, and priorities for development (Hua et al. 2017). According to Morse & McNamara, 2013), a sustainable livelihood comprises the capabilities, assets, and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from external and internal shocks, and maintain capabilities and assets, while not declining the natural resource base (Serrat, 2017; Morse & McNamara, 2013). Since the sustainable livelihood assessment is more popular among researchers in evaluating poor societies, it helps in investigating broadly the circumstances that the poor might be very vulnerable.

3. CONCEPTUAL MODEL AND HYPOTHESES

The study focused on three theoretical aspects: transaction cost determinants, TC, and livelihood success. TC determinants comprise three features: opportunism, bounded rationality, and uncertainty, and these determinants act as the independent variable. The research is expected to examine the relationship between these TC determinants and the livelihood success of the Sanasa beneficiaries in Sri Lanka. Therefore, livelihood success is considered the dependent variable, while TC performs as the mediate variable between TC determinants and livelihood success. According to the conceptual framework, thirteen hypothetical relationships can be established between these variables, and Figure 01 depicts these associations and hypotheses.

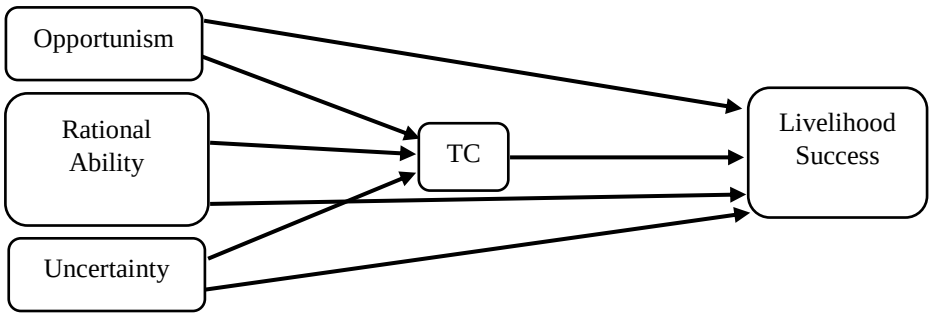

Figure 1: Conceptual framework

Opportunism and Transaction Cost: Opportunism act as a prominent role among marginalized rural communities such as Sanasa beneficiaries. The major causal factor behind the opportunistic behavior among exchange parties is information

asymmetry (Luo et al., 2016). The exchange party that does not have perfect and reliable information might be influenced by the negativities of opportunism. When the party that gets influenced by opportunism attempts to mitigate the rising negative influences of opportunism, they agonize with TC (Mithrananda & Priyanath, 2020). Since the Sanasa beneficiaries are a set of marginalized communities, they are influenced by information asymmetry (Dissanayake, 2019). Thus, they tend to struggle with the dark sides of opportunism along with higher levels of TC (Silva, 2021). The producer has to search for information, negotiate with exchange parties, monitor the transactions, and enforce rules and regulations if needed to mitigate opportunism. If the exchange party has perfect information, they might not have to experience TC attached to opportunism (Priyanath & Premaratne, 2017). Sanasa beneficiaries do not have access to perfect market structures with perfect information due to several aspects such as low education, lower experience, and lower technology (Dissanayake, 2019; Hulme & Montgomery, 1994). Therefore, they have a higher possibility to suffer hazards of opportunism and thereby increase the TC. Thus, most probably the beneficiaries' probability of experiencing higher levels of opportunism TC is quite higher. Therefore, the study hypothesized;

H1: Opportunism has a positive relationship with the transaction cost of Sanasa beneficiaries.

Opportunism and Livelihoods: According to Priyanath and Habaragamuwa (2020), when someone tries to overcome opportunism, it generates TC and those costs retard the person's livelihood success. As per Dissanayake (2019), the Sanasa beneficiaries are a set of Sri Lankan communities without proper educational backgrounds. Thus, the possibility of experiencing lower living standards is relatively high. Such lower living standards are much influenced by higher levels of opportunism which is common among small-scale producers such as Sanasa beneficiaries. According to Lue, Meyer, and Knobbout (2016) and Priyanath and Premaratne (2017), marginalized communities do not have the access to perfect markets with perfect information. Therefore, the exchange party who has more information tries to behave opportunistically against the small-scale producer who owns less information (Priyanath, 2017). As a result of opportunism, the small-scale producer might have wrong information about markets, demand and supply patterns, and price structures. Therefore, these scenarios lead to creating losses among small-scale producers. When someone tries to mitigate opportunism, he should have access to perfect information. As a result, the producer has to search the reliable information, he should negotiate among exchange partners, the producer has to monitor the contracts and the producer has to take legal action if needed (Priyanath & Habaragamuwa, 2020; Priyanath & Premarathne 2017). These activities waste the valuable time and money of the producer. The small-scale producer has to sacrifice his time and money to cope with opportunism. This, directly and indirectly, influences the producer's livelihood. If the producer has

perfect information, the negativities of opportunism might be relatively low and it could result in livelihood success. Hence, the study proposes;

H2: Opportunism has a negative relationship with the livelihood success of Sanasa beneficiaries.

Rational Ability and Transaction Cost: The decision-making ability of small-scale producers is bound due to major reasons like lack of information, lack of experience, and lack of knowledge (Fatoki, 2011). Small-scale producers like Sanasa beneficiaries are not equipped with better knowledge, technology, and adequate resources. Most probably the Sanasa beneficiaries are settled in rural areas with lower infrastructures (Dissanayake, 2019; Herath et al., 2013). Hence, their rationality gets limited. As a result, small-scale producers get influenced by the negative aspects of opportunism which results in TC (Luo et al., 2016; Priyanath & Premarathne 2017). The small-scale producers cannot reach accurate and timely information. Further, they cannot evaluate the available information to make the best decisions (Priyanath & Lakshika, 2020). Most probably, lack of time and capacity, geographical barriers with poor infrastructure facilities, and lack of knowledge and resources to access and assess information impede the capacity of small-scale rural producers to collect information (Priyanath & Premarathne 2017; Mithrananda & Priyanath, 2020). Therefore, the transactions tend to become costly. The producers have to search for accurate information, negotiate among transaction parties, and monitor the transactions and contracts to develop better rationality. Thus, the lack of better rational ability leads to generating TC among small-scale producers. Therefore, the study hypothesizes that;

H3: Rational ability has a negative relationship with the transaction cost of Sanasa beneficiaries.

Rational Ability and Livelihoods: People may have the ability to make rational decisions, but their capacity to access and assess information to make the best decision is limited (Priyanath & Premarathne, 2017). Bounded rationality describes the limited extent to which people make rational decisions (Dyer, 1997; Hobbs, 1996). The rational ability is relatively more bounded among small-scale producers than the other large-scale producers. Most prominently, the small-scale producers are lagging in perfect information, market experience, and knowledge and it impedes their decision-making ability among them (Priyanath & Lakshika, 2020). Moreover, as per Dissanayake (2019) and Hulme and Montgomery (1994), small-scale producers like Sanasa beneficiaries are influenced by several geographical barriers too. Since the rural villagers have lower infrastructure facilities with lower technology it also results in retarding information access. Therefore, their transaction decisions based on limited information may not be perfect, and imperfect transaction decisions influence small-scale producers' livelihood success negatively (Priyanath & Premarathne 2017). As a result of bounded rationality, the producers always do not tend to make the best decision regarding their livelihood activities at the best time. Hence, it leads to generating more losses and reducing

profits. The reduced profits mitigate livelihood success and living standards (Maltsogolou & Tanyeri-Abur, 2005). Making a perfectly rational decision requires unlimited intellectual capabilities with perfect information. If the producers can assess and access information perfectly, the rationality is much stronger and it leads to creating the basis for a successful livelihood. Hence the study predicts that;

H4: Rational ability has a positive relationship with the livelihoods of Sanasa beneficiaries.

Uncertainty and Transaction Costs: McMullen and Shepherd (2006) define uncertainty as the level of 'the entrepreneur's confidence in estimation or expectations in future circumstance. Entrepreneurs can be more confident when they have enough information to estimate the future. If one has less information, it leads to mitigating one's confidence (McMullen & Shepherd, 2006). Hence, information plays a major role in decreasing uncertainty. As per Priyanath and Premaratne (2017), uncertainty is relatively strong among small-scale producers. The small-scale producers such as Sanasa beneficiaries do not have the required confidence to forecast the future behavior of the market due to information asymmetry. Uncertainty creates the basis for opportunism among smallholders (Simmons, 2002). Researchers have regarded uncertainty as a major determinant of generating TC). Further, Banerjee and Chatterjee (2010) describe that market uncertainty retard the economic performances of firm generating higher TC. Hence, the study hypothesizes that;

H5: Uncertainty has a positive relationship with the transaction cost of Sanasa beneficiaries.

Uncertainty and Livelihoods: Uncertainty is one of the most important factors in making decisions and managing resources (Carey & Lawson, 2011). Uncertainty means the inability of accurate predictions (Williamson, 1985). Williamson (1985) emphasizes that the behavioral uncertainty related to human factors, such as bounded rationality and opportunism, intensifies the exchange difficulties even resulting in losses. On the other hand, environmental uncertainty leads to unexpected changes in environments adjacent to an exchange (Williamson, 1985). Thus, the producers are affected by uncertainty from environmental factors that they cannot control. Most probably, uncertainties are generated as a result of information asymmetry (Zhang, 2009). When it comes to the small-scale producers like Sanasa beneficiaries' context, information asymmetry and uncertainty exist at a dreadful status (Herath et al., 2013; Owen, 2007). The generated uncertainties lay the foundation to retard the living standards of the victims (Priyanath & Habaragamuwa 2020). Thus, uncertainty plays a prominent role in mitigating the producers' livelihood successes (Simmons, 2002). Therefore, the study proposes;

H6: Uncertainty has a negative relationship with the livelihoods of Sanasa beneficiaries.

Transaction cost and Livelihoods: The several modes of TC experienced by small-scale producers due to opportunism, bounded rationality, uncertainty, and asset specificity (Priyanath & Premarathne, 2016). To maintain smooth livelihood activities, the producers have to search for more information, negotiate among transacting parties, have to monitor the transactions and contracts and even have to enforce rules and regulations if needed. Thus, due to these several aspects, there it generates TC that retard one's success in their livelihoods. Priyanath and Laksika (2020) found that it would uplift the household's performance when it minimizes the TC. Moreover, if TC is high, it may significantly affect the livelihoods of small-scale producers in a negative manner (Priyanath & Premarathna, 2017). Thus, the study predicts that;

H7: Transaction cost has a negative relationship with the livelihoods of Sanasa beneficiaries.

4. METHODOLOGY

The study is based on a quantitative approach. Primary data were collected from Sanasa beneficiaries using the multistage sampling method. Badulla district which has 15 Divisional Secretariat (DS Divisions) was selected randomly to conduct the survey. The details regarding the list of Sanasa societies functioning in each DS division were obtained by contacting the Department of Cooperative Development in Badulla. The study selected one Sanasa society randomly from each DS Division. Then it selected all the beneficiaries who are engaged in income-generating activities (livelihood activities) as a cluster. Accordingly, 273 members of Sanasa beneficiaries were selected as the sample. Data were collected through a structured questionnaire.

The items such as searching costs, negotiation costs, monitoring costs, and enforcement costs that are believed to critically affect the TC are used to measure TC. The study used four items to measure each cost items, which are adopted by Dyer and Chu (2003); Nguyen and Crase (2011). Time, labor, traveling, and communication costs for searching information and information related to the credit, costs for handling legal matters relating to the transaction, costs for monitoring the selling and purchasing activities, and costs for monitoring the transaction. Opportunism was measured using eight items: exaggeration of needs, sincerity in dealings, truthfulness in dealings, good faith bargaining, dishonesty in dealings, unfairness in dealing, cheating in dealing, and breach of agreement engaged in by the exchange partner. Those items were adopted and developed by Dahlstrom and Delerue (2012); Lui et al. (2006).

To measure rational ability, the study used three dimensions; a) ability to access information, b) ability to assess information because the study observed that not only information asymmetry but also the inability to evaluate information averts the decision-making ability of human beings and the ability to make good decisions

adopted by Zhang (2009). The environmental uncertainty of specific assets is measured using demand and supply uncertainty adopted from John and Weitz (1988), Noordewier et al. (1998), and Wu and Choi (2005). Behavioral uncertainty has been operationalized by the degree of difficulty associated with assessing the performance of exchange partners (Rindfleisch & Heide, 1997; Shin, 2003).

The livelihoods among the Sanasa beneficiaries were assessed according to the classification of social capital, human capital, physical capital, financial capital, and natural capital which was developed by Serrat (2017) sustainable livelihood analysis framework. The measurements of the particular classification of livelihoods were developed according to the theories put forward by Scoones (2015).

Partial Least Square - Structural Equation Modelling (PLS-SEM) was used to evaluate the measurements of the variables and to test the hypothetical relationships with the assistance of Smart PLS software. The measurement model is evaluated using reliability and validity tests and the efficiency of the structural model was evaluated by multi-collinearity issues, R2, effect size (f2), and predictive relevance (Q2).

5. RESULTS AND DISCUSSION

Out of SANASA beneficiaries, 68% are females while 32 are males who are engaging in income-generating activities. Of all the beneficiaries, 53% of them have received education up to Grade 10 or Ordinary Level while 18% have obtained A/L education. 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 jobs receiving monthly salaries.

According to table 01, all generated outer loading values are above the minimum threshold criterion of 0.7. The T-test reveals that the factor loadings are statistically significant (all are above 1.96) at a 95% confidence level demonstrating that altogether constructs under first-order analysis satisfy the indicator reliability. Then it is clear that both tests satisfy the indicator reliability of constructs. When concerning internal consistency reliability, composite reliability and Cronbach's alpha have been calculated.

Table 01 further depicts that, values in these two tests are higher than 0.7 in variables. Therefore, it can prove that strong internal consistency reliability exists in the model. Moreover, table 01 confirms the convergent validity of the first-order constructs of the dependent variable as all the values are above 0.5 (AVE should be equal to or greater than 0.5).

Table 1: Analysis of the first-order constructs

Construct	Loadings	t-value	CR	α*	AVE
Financial Capital			**0.882**	**0.821**	**0.651**
Direct income after joining Sanasa	0.788	18.69			
Savings after joining Sanasa	0.853	45.66			
Gold jewelry-related assets after joining Sanasa	0.759	31.60			
The ability to obtain credit facilities after joining Sanasa	0.825	32.08			
Human Capital			**0.950**	**0.937**	**0.760**
The professional knowledge after joining Sanasa	0.851	44.64			
General knowledge after joining Sanasa	0.879	50.89			
The professional skills after joining Sanasa	0.880	56.72			
Health status after joining Sanasa	0.817	35.12			
Experiences after joining Sanasa	0.882	56.16			
Efficiency after joining Sanasa	0.918	96.59			
Natural Capital			**0.906**	**0.795**	**0.827**
Favorable soil	0.933	155.08			
Adequate water supply	0.886	47.88			
Physical Capital			**0.910**	**0.876**	**0.671**
Housing standards after joining Sanasa	0.808	41.33			
Water supply status after joining Sanasa	0.743	26.98			
Audio-visual (internet services, television, radio...etc.) after joining Sanasa	0.857	53.94			
The number of vehicles after joining Sanasa	0.772	23.974			
The number of household equipment after joining Sanasa	0.904	77.97			
Social Capital			**0.977**	**0.973**	**0.860**
Get to know more community after joining Sanasa	0.955	101.01			
Able to maintain connections with more communities after joining Sanasa	0.892	34.60			
Trust with people after joining Sanasa	0.939	75.67			
Knowledge exchange after joining Sanasa	0.937	51.37			
Interpersonal support	0.933	89.87			

Members of Sanasa do not behave in an opportunistic manner	0.888	59.95			
Flexibility among members after joining Sanasa	0.946	77.29			
Searching Cost			**0.929**	**0.885**	**0.813**
Cost of time and labor to search for exchange partners	0.894	56.00			
Cost of transportation and communication to search exchange partners	0.902	66.83			
Spend more money to search exchange partners	0.909	56.67			
Negotiation Cost			**0.945**	**0.913**	**0.851**
Cost of time and labor to negotiate with exchange partners	0.914	77.18			
Cost of transportation and communication to negotiate with exchange partners	0.914	54.01			
Spend more money to negotiate with exchange partners	0.940	117.41			
Monitoring Cost			**0.901**	**0.838**	**0.753**
Cost of time and labor to monitor the transaction process	0.852	41.29			
Cost of transportation and communication to monitor transaction process	0.896	60.87			
Spend more money to monitor the transaction process	0.855	31.59			
Enforcement Cost			**0.904**	**0.841**	**0.758**
C to resolve transaction disputes	0.849	30.32			
Cost of transportation and communication to resolve transaction disputes	0.906	68.63			
Spend more money to resolve transaction disputes	0.855	39.98			
Access to information			**0.933**	**0.909**	**0.737**
Ability to find out accurate prices	0.736	23.85			
Ability to find out adequate information about the market and buyers	0.833	35.46			
Ability to find out accurate information about raw materials	0.925	71.92			

Ability to find out adequate information about new suppliers	0.901	52.67			
Ability to find out adequate information about new production techniques	0.884	52.12			
Asses information			**0.799**	**0.723**	**0.570**
Ability to assess market pricing	0.752	28.36			
Ability to assess the quality and the prices of raw materials	0.730	18.87			
Ability to assess political conditions, business environment, and external threats	0.782	21.44			
Decision-making ability			**0.933**	**0.904**	**0.777**
Ability to make better decisions on selling	0.864	40.09			
Ability to make better decisions on buying	0.922	79.42			
Ability to face external business shocks	0.898	40.07			
Ability to get a perfect transaction decision	0.841	28.28			
Environment Uncertainty			**0.942**	**0.876**	**0.890**
Ability to forecast the future business share	0.899	87.44			
Ability to forecast the volume of future sales	0.874	47.45			
Ability to forecast the future prices	0.881	50.58			
Future demand will be stable	0.909	71.14			
Ability to forecast the future raw material supply	0.706	17.14			
Ability to forecast the future prices of raw materials	0.767	20.51			
The future supply of raw materials will be stable	0.804	27.70			
Behavioral Uncertainty			**0.942**	**0.927**	**0.701**
Easiness of understanding the customer	0.949	150.40			
Lower risk in opportunistic behavior of the customers	0.938	88.45			

Source: Survey Data, 2021

On the other hand, regarding the discriminant validity, table 02 depicts that none of the inter-construct correlation values are above the square root of the AVE and then this satisfies the criterion of the discriminant validity of first-order constructs. Based on the latent variable scores of first-order constructs, second-order level constructs were developed and the same reliable and validity tests were conducted (See table 03).

Table 2: Discriminant validity of first-order constructs

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Financial	**.88**													
Human	.61	**.87**												
Natural	.71	.59	**.91**											
Physical	.74	.66	.62	**.92**										
Social	.78	.71	.82	.67	**.93**									
Enforcement	.42	.40	.37	.43	.47	**.87**								
Monitoring	.52	.50	.45	.54	.53	.72	**.86**							
Negotiation	.63	.69	.58	.58	.67	.52	.71	**.92**						
Searching	.58	.64	.57	.56	.58	.44	.61	.81	**.91**					
Assess	.43	.29	.44	.25	.43	.28	.26	.35	.37	**.75**				
DMA	.65	.54	.67	.49	.79	.38	.41	.56	.49	.51	**.88**			
Access	.67	.56	.67	.49	.78	.35	.42	.61	.52	.50	.87	**.86**		
Behavioral	.40	.26	.45	.32	.35	.11	.17	.26	.27	.24	.32	.34	**.84**	
Environment	.62	.43	.63	.54	.56	.20	.25	.36	.34	.29	.44	.43	.66	**.94**

Source: Survey Data, 2021

Accordingly, altogether indicator reliability of the latent variables, in the second order was evaluated, and all path coefficients are well above the threshold value of 0.7. As well, all the t-statistics are above 1.96 and it depicts that all are significant at 95% confidence levels. Table 03 further displays that Cronbach's α and composite reliability (CR) are higher than the recommended 0.7 value. Along with the higher levels of Cronbach's α and composite reliability, it can reveal that the second-order constructs were developed reliably. Further, the results confirm the convergent validity of the second-order construct as the AVE takes a value above 0.5.

Table 3: Analysis of the second-order constructs

Construct	Loadings	t-value	CR	α*	AVE
1. Livelihoods			**0.938**	**0.918**	**0.753**
Financial Capital	0.887	34.14			
Human Capital	0.819	26.74			
Natural Capital	0.867	43.78			
Physical Capital	0.841	44.75			
Social Capital	0.922	83.52			
2. Transaction Cost			**0.913**	**0.873**	**0.725**
Searching Cost	0.862	53.66			
Negotiation Cost	0.914	101.03			
Monitoring Cost	0.875	40.18			
Enforcement Cost	0.745	16.92			
3. Opportunism			**0.946**	**0.934**	**0.687**
Anticipate honesty from the customers	0.869	51.44			
Customers express their needs in a selfish manner	0.873	57.63			
Customers always tend to change the previously agreed facts to get benefits	0.758	7.32			
Customers always breach the agreements to maximize their benefits	0.920	11.89			
Cannot expect advanced trust from customers	0.790	28.57			
To prevent cheating, it should inspect every step of the transaction	0.719	18.59			
Most customers are dishonest when performing transactions	0.787	24.77			
Most customers act unfairly when performing transactions	0.895	77.13			
4. Rational ability			**0.902**	**0.835**	**0.756**
Information Asymmetry	0.941	74.10			
Assess Information	0.704	19.91			
Decision-making ability	0.942	10.64			
5. Uncertainty			**0.902**	**0.792**	**0.822**
Environmental uncertainty	0.945	14.63			
Behavioral uncertainty	0.867	42.31			

Source: Survey Data, 2021

The discriminant validity of the second-order constructs is presented in table 04 below. It depicts that all the inter-constructed correlation values lie below the square root of the AVE. Thus, it satisfies the criterion of the discriminant validity of the second-order constructs.

Table 4: Discriminate validity of the second-order constructs

	Livelihoods	**Opportunism**	**Rational Ability**	**TC**	**Uncertainty**
Livelihoods	0.868				
Opportunism	-0.716	0.829			
Rational Ability	0.749	-0.594	0.870		
TC	-0.734	0.522	-0.582	0.851	
Uncertainty	-0.602	0.463	-0.452	0.336	0.907

Source: Survey Data, 2021

Then the study assessed the multicollinearity issues of the structural model. It has calculated VIF to check the multicollinearity issues following the criterion put forward by Hair et al (2014). On considering the collinearity among the dependent variables in the structural model, VIF values for all range from 1.213 to 1.943. All these values are significantly less than the recommended threshold value of 5. Hence, it proves that no multicollinearity issues were detected among the variables.

Table 05: VIF Statistics

	Livelihoods	**TC**
Opportunism	1.798	1.695
Rational Ability	1.943	1.653
TC	1.652	-
Uncertainty	1.504	1.504

Source: Survey Data, 2021

Table 06 below indicates the significance of the path coefficients. The effect of one variable on another variable is shown by the path coefficients. According to this study, the effect of transaction cost determinants on generating TC and livelihood success is depicted by the path coefficients. Each path relationship is illustrated under the regression coefficient (β). The significance of the path coefficients is illustrated under T-statistics. The study tested 07 hypothetical relationships. Out of the 07 hypotheses, H1, H2, H3, H4, H6, and H7 were accepted at a 95% significance level. Considering the R^2, Livelihood has 82% explanatory power while TC has 39% explanatory power. Usually, if the value of R^2 is high, the model fits better.

Table 06: Path coefficients and hypotheses

Hypo.	Relationship	Beta (β)	T-Value	Decision
H1	Opportunism -> TC	0.250	3.049	Supported
H2	Opportunism -> Livelihoods	-0.230	6.133	Supported
H3	Rational Ability -> TC	-0.419	5.888	Supported
H4	Rational Ability -> Livelihoods	0.306	6.989	Supported
H5	Uncertainty -> TC	0.006	0.084	Not Supported
H6	Uncertainty -> Livelihoods	-0.176	4.526	Supported
H7	TC -> Livelihoods	-0.336	9.484	Supported

Source: Survey Data, 2021

Table 07 illustrates the mediating effect of the TC which acts as a partial mediator between rational ability and livelihoods. It is accepted at a 95% significance level. As well, TC acts as a partial mediator between opportunism and livelihood success. It is also accepted at a 95% significance level. TC has no mediated effect on the relationship between uncertainty and livelihoods.

Table 07: Mediating effect of Transaction Cost

	Beta	T Statistics	P Values	Decision
Rational Ability -> TC -> LS	0.141	5.859	0.000	Partial Mediation
Opportunism -> TC -> LS	-0.084	2.788	0.006	Partial Mediation
Uncertainty -> TC -> LS	0.002	0.084	0.933	No mediation

Source: Survey Data, 2021

Table 06 above indicates that there is a significant positive relationship between opportunism with transaction cost ($\beta = 0.250$ and t-value = 3.049). This satisfies hypothesis H1 which was proposed by the study. According to Foss & Weber (2016), opportunism takes the front seat in determining TC. A study conducted by Priyanath and Premaratne (2017) has stated that opportunism among small-scale operators in Sri Lanka is relatively high. Small-scale market in Sri Lanka operators' experiences 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, $\beta = 0.250$ and t-value = 3.049. Therefore, this result supports hypothesis H2. Opportunism always tries to seize every opportunity in various forms such as deception, lying, and betraying to improve things for himself only (Luo et al., 2016). 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.

Rational ability can be identified as another transaction cost determinant. Table 06 demonstrates that there is a negative relationship between rational ability and transaction cost (β = -0.419 and t-value = 5.888). It satisfies hypothesis H3. Bounded rationality itself performs several limitations such as the difficulty of demanding a decision, the cognitive ability of the mind, and the time accessible to make the decision (Foss & Weber, 2016). If the person has adequate and reliable information accompanied by better market experiences, that person's rational ability is relatively high. Simon (1990) in his study has stated that most probably small-scale market operators are impacted by bounded rationality. The most influencing causes are information asymmetry, decision-making inabilities, and lack of experience. Further, table 06 depicts that rational ability maintains a positive relationship with livelihood success (β = 0.306 and t- value 6.989) satisfying the study proposed hypothesis H4. The rationality of the people gets limited or bounded by information asymmetry. If they do not have accurate and timely information within them, it might lead to bounded rationality. Their thoughts could be limited to a certain scope. If this situation happens, the members of SANASA are misguided. When individuals do not have the ability to access information, obviously it creates false judgments (Priyanath et al., 2016). Moreover, though individuals have access to information some might not have the ability to assess the available information. Hence, it also leads to reaching false conclusions. Finally, the information asymmetry hinders the decision-making ability of Sanasa members. Hence, the Sanasa beneficiary who has relatively advanced rationality yields more success in their livelihoods than the one who is influenced by bounded rationality.

Uncertainty is another prominent determinant when discussing TC among Sanasa beneficiaries. Table 06 generated with the assistance of gathered data represents that there is a positive relationship between uncertainty and TC (β = 0.006 and t-value = 0.084). The study proposed hypothesis H5 as there is a positive relationship between uncertainty and TC. Most researchers have found that uncertainties lead to generating TC specifically among small-scale market operators. As per Priyanath and Premaratne (2017), small-scale market operators face transaction uncertainty, since they have to work with both environmental uncertainties and behavioral uncertainties. To safeguard itself from future uncertainties, it incurs additional costs to search for information as well as negotiate with exchange partners, monitor transactions, and enforce laws when needed (Dyer, 1997; Hobbs, 1996). However, hypothesis H5 was not statistically accepted (t = 0.084 and it is less than 1.96) but it represents a positive relationship between uncertainty and TC. Even though table 06 rejects the H5 hypothesis, it accepted the H6 hypothesis showing that there is a significant negative relationship between uncertainty and livelihood success (β = -0.176 and t-value = 4.526). Uncertainties may lead to economic losses (Hobbs, 1996; Priyanath & Premarathne 2016). It is relatively hard to manage the

uncertainties perfectly for small-scale market operators like Sanasa beneficiaries. Hence, it directly negatively influences one's livelihood.

Finally, table 06 depicts that there is a significant negative relationship between TC and livelihood success (β = -0.336 and t-value = 9.484). Thus, it satisfies the H7. Searching costs, negotiation costs, monitoring costs, and enforcement costs result in limitations in one's sustainable 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). The TC disturbs this livelihood sustainability. The results revealed in table 06 when TC increases by one percent, it retards the success of the livelihoods by 33.6 percent.

Further, to reinforce the study findings, table 07 has analyzed the mediate effect of TC among the determinants and livelihood success. It represents that TC acts as a significant partial mediator between opportunism and livelihood success (t-value = 2.788). The mediate role of TC between rational ability and livelihood success also has been assessed. Hence, table 07 shows that there is a significant partial mediation effect of transaction cost between rational ability and livelihood success (t -value = 5.859). Finally, the mediate effect of TC between uncertainty and livelihood success has been analyzed. Table 07 generated data don't support to reveal that there is a mediate of TC between uncertainty and livelihood success (t-value is less than 1.96). However, according to the results, it is proved that the TC formed with the major determinants such as opportunism, rational ability and uncertainty 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.

6. CONCLUSION

The study attempted to analyze how TC determinants influence the livelihood success of the Sanasa beneficiaries. 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 beneficiaries. TC acts as a mediating role between opportunism and the livelihood success of the beneficiaries. 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. This scenario negatively influences their livelihoods. The study discovered that there is a negative relationship between rational ability with TC and a positive relationship between rational ability and with 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 reduced the scope of TC among the beneficiaries and it might lead to uplifting their livelihoods. The study revealed that uncertainty does not act as a TC determinant among the

beneficiaries. However, the study exposed that transaction uncertainty negatively 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. Hence, the transaction uncertainty disturbs the livelihoods of the Sanasa beneficiaries in terms of both environmental and behavioral uncertainty.

This study generates a new insight by analyzing the livelihood success of the Sanasa beneficiaries from the TC perspective. Empirical evidence of this study reveals that inability to access and assess information, lack of better training, lack of decision-making ability, lack of market knowledge and experience, and lack of technology and infrastructure have led to cause TC in terms of several determinants and thereby retard the livelihood success of beneficiaries. Thus, the study further offers thoughtful insights on the importance of reliable and accurate information, advanced technology, and offering training and awareness programs for the beneficiaries to reduce TC and guide them to lead successful livelihoods. Therefore, the present finding makes an important contribution for policymakers to develop policies to uplift the livelihoods among the Sanasa beneficiaries, mitigating the several means of TC. TC arises mainly due to asymmetric information. Therefore, small-scale producers should facilitate the proper information channels (official website with sufficient information about prices, possible and reliable suppliers, and buyers) to minimize TC in livelihood activities. Further, policymakers are recommended to develop a mechanism to easily access timely information about the market, suppliers, buyers, and other stakeholders which helps minimize TC and facilitates contact with new buyers and suppliers. The study suggests arranging more activities to develop close relationships with reliable exchange partners (reputed, large-scale partners both local and international) expecting to minimize TC and thereby increase livelihood success. Furthermore, future researchers are recommended to carry out broad research focusing on the TC determinants and how they influence small-scale producers, and also how to mitigate those TC.

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