

FACTORS AFFECTING COMMERCIALIZATION INTENTION OF NON-TIMBER FOREST PRODUCTS (NTFP'S) IN TRIBAL COMMUNITIES: A STUDY USING THE THEORY OF PLANNED BEHAVIOUR

KANHU CHARAN PURTY

Research Scholar, KISS Campus -3 KIIT Bhubaneswar-24, Odisha. Email: 1806901004@kiss.ac.in

Dr. SNIGDHARANI PANDA

Dean, School of Tribal Resource Management, Email: snigdharani.panda@kiss.ac.in

Dr. ANITA PAREEK

Assistant Professor, Kalinga Institute of Social Sciences (KISS, Deemed to be University), Bhubaneswar, Odisha. Email: anita.pareek@kiss.ac.in

Dr. BINITA NANDA

Assistant Professor, binita.nanda@kiss.ac.in, Kalinga Institute of Social Sciences (KISS, Deemed to be University), Bhubaneswar, Odisha

KANDAN HANSDAH

Research Scholar, Kalinga Institute of Industrial Technology, (KIIT, Deemed to be University) Bhubaneswar, Odisha. Email:hansdahkandan143@gmail.com

Abstract

The purpose of the paper was to test a causal model for finding the factors affecting commercialization intention of Non Timber Forest Products (NTFP's) using the Theory of Planned Behaviour. NTFP's refers to products generated from forests to be used by human beings, produced by process of harvesting, rather than cutting down woodlands. The study is based on deductive research and uses a descriptive correlation-analysis in terms of methodology. The response population consisted of 187 timber buying and selling households from Keonjhar district of Odisha. A structured questionnaire was used as data gathering tool and the reliability was assessed using Cronbach's alpha. The impact of the following factors were tested on Commercialization Intention of NTFP's: Attitude (A), Subjective Norm(SN), Perceived Behaviour Control(PBC), Government Support(GS) using Structural Equation Modelling. The findings of the study confirmed that Attitude, Subjective Norm and Perceived Behaviour Control has a positive and significant impact on Selling Intension of NTFPs whereas, Perceived Behaviour Control has the highest significance. It also showed that more government support is required for the assessment for the intension toward commercialization of NTFPs. The underlying intention of this study is propagation, conservation& promotion of NTFP's, which is currently the need of the hour.

Keywords- Commercialization Intention, Tribal Communities, NTFP's, Theory of Planned behaviour.

1. Introduction

Forest Survey of India (2021) report states that, the country's total area covered by trees and forests has increased by 2,261 sq km over the past two years. Andhra Pradesh (647 sq km) has witnessed the greatest increase in forest cover, followed by Telangana (632 sq km) and Odisha (537 sq km).Forest refers to an area which consists of densely grown trees and supports a rich ecosystem. The woodlands are major

provider of economic benefits and play an essential role in sustaining the livelihoods of rural people. Forests also act as primary agent in maintaining the balance in the ecosystem. The diversity of species provides food security and in particular protects the "safety net" of forest residents (Shackleton & Shackleton, 2004; Babalola, 2009). The forest caters multiple needs of human being and also provide a variety of invisible goods and services like water conservation, non-essential environmental services, wear and tear, genetic resources conservation, environmental protection capacity, beauty and recreational value with marketable products such as wood, fuel-wood, and non-wood forest products (NTFPs) including medicinal plants. The products that are produced from forests without cutting down timber, for example vegetables, palms, bamboos, honey, vegetable, nuts, resins and essences are all Non-Forest Timber Products (NTFP's). Studies reflect that more than 80% of forest habitants depend on NTFP's for their livelihood, where almost 60% is consumed by them locally.

The commercialization of NTFP's has a massive turn-over of 6000 crore and dependency of billions of people for livelihood ,still come under unorganised sector and needs strategic changes and government support for the development and commercialization of NTFP's. As in the face of strong economic constraints, forests often depend on the source of products (NTFP) that are sold for cash (Sunderline et al., 2005).

It is believed that the sustainable income derived from NTFP's starting from harvesting to marketing them, offers appropriate incentives for the protection of forests and other natural ecosystems. It is a known fact that forest is a rich hub for significantly valued natural products and resources (Myers, 1988; Panayoto and Aston, 1992). Thus increase in the price of renewable forest-based goods and the sustainable expansion of commercialization will make them more attractive than the timber harvesting policy. In addition, the long-term environmental impact of NTFP harvests is anticipated to be less than the utilisation of other forests (Peters, Gentry, and Mendelssohn, 1989).

Considering the Indian scenario of non-timber forest product market, the behavioural intention towards commercialization of NTFPs, is poorly investigated by the scholars. There is a lack of theoretical underpinning to explain the behavioural intention towards NTFPs of tribal community which are predominantly involved in this business. Determinants like Attitude, social pressure, Government supports which may influence the commercialization intention are largely neglected in the extant literature. Hence this shortcoming needs to be addressed for better understanding of the commercialization of NTFPs. In light with this the current study proposed the following research question: what factors drive the commercialization intention of NTPFs among the tribal community of India? And which one is significant most significant factor? The current study is based on theory of planned behaviour, to develop a conceptual model and has incorporated government support, as a determinant. Hypotheses have been proposed and tested empirical. The findings of the study confirmed that Attitude, Subjective Norm and Perceived Behaviour Control has a positive and significant impact on Selling Intension of NTFPs, where Perceived Behaviour Control has highest impact on selling intension

of NTFPs. The study aims to contribute to the existing knowledge on commercialization of the NTFPs. It also draws attention of government and stakeholders to formulate effective action plan and policy to promote and improve the commercialization of NTFPs.

2. Review of Literature

The state of Odisha is 4.7% of India's land and its population 36.7 million accounts for 3.6% of India's total population (GOI,2001). Odisha being the second largest NTFP (Kandari et al,2012) . The income of Odisha's 40% rural depends on forest activities(Dash,2001). The existing study is based on the notion of Planned Behaviour, which was initially suggested by Azjen (1991). The idea of Planned Behaviour is commonly used to anticipate the behavioural intention of individual towards a given activity. It is a highly applied theory used in various domains of research and is cited by numerous experts. In this study, the Theory of Planned Behaviour is used to hypothesize the commercialization intention of tribal tribes towards NTFPs. The three primary elements of Theory of Planned behaviour are Attitude, Subjective Norm and Perceived Behaviour Control, which were addressed as the key antecedents of commercialization of NTFPs products. Thus these factors are chosen as key areas of literature review. The literature review is designed thematically to indicate the importance of each factors of Commercialization intention in selling intention of NTFP's. Finally a hypothesis is proposed after each review to draw conclusions after testing them empirically.

2.1. Attitude:

Attitude is one of the most important antecedents of behaviour (Ajzen, 1991). Attitude refers to the degree to which someone includes favourable or unfavourable evaluation of behaviour (Fisbein& Ajzen, 1975). Attitude is how one feels about choosing an action, which is related to the attitude object, such as buying a product (Blackwell et al., 2006). Attitude is a person's liking or disliking towards behaviour(Blackwell et al., 2006).In general, the more pragmatic the personality's desire to perform the particular behaviour, the more positive and subjective their thoughts are about behaviour, the more control they need over it. The expectancy-value model claims that one's attitudes toward behaviour are constructed from a complex system of behavioural beliefs that relate to action in relation to many outcomes and other situations. Therefore, attitudes can play an important role in predicting and explaining human behaviour (Ajzen,1988).

H₁:Attitude has a positive and significant impact on the selling intention of non-timber products

2.2. Subjective Norm:

Subjective norms are "social pressure to behave or not to behave." (Ajzen, 1991) . In other words, the subjective ideal of what people should expect is related to the general concept of an individual's honest belief and their motivation to pursue that issue (Karahanna, Strobe, and Chervani ,1999).Subjective norms are informative and may

have the opposite effect under regulatory effects. The existing social pressure to conform to expectations about engaging in the action is the predictive social component known as the subjective norm, and it should affect the individual's desire to perform or not to the conduct. In contrast, a person should be less inclined to engage in the activity if social expectations don't agree to do so. In this situation, the individual is more likely to purchase NTFP's if doing so is perceived as socially desirable, on what influential others think about it. The perceived societal pressure that affects consumers' decisions is referred to in this study as the subjective norm.

H₂: Subjective Norm has a positive and significant impact on the selling intention of non-timber forest products.

2.3. Perceived Behavioural Control (PBC)

Perceived behavioural control relates to "people's evaluations of the advantages or disadvantages of engaging in the behaviour of interest". This control is characterized by the perception of the presence of conditions that will promote or hinder the performance of the activity (Ajzen 2000). Thus, the perception of control over resources and opportunities is an underlying concept related to behavioural control, which can be characterized as a controllable factor. Control factors are divided into internal and external constraints, while control refers to cognition/self-efficacy and external control describes the environment (Ajzen,2000).

H₃: Perceived Behavioural Control has a positive and significant impact on the selling intention of non-timber forest products

2.4. Government Support (GS)

Government support lends more reliability as well as viability towards the non timber products. Government support has a significant role in the non timber products and its support acts as a major driving force towards the farmers and the non timber products because its operation is channelized orderly and well managed in different ways (Tan and Teo, 2000). Government promotion of the non-timber product would be well in advance used when well-structured infrastructure, (Jaruwachirathanakul and Fink, 2005): more resourceful facility and adoption of new technology are provided in plenty. Moreover the previous studies confirm that Government support may influence the farmers behavioural intention (Tornatzky and Klein (1982). From the above discussion it is hypothesized that when there is Government support it has a positive intention to sell the non-timber products.

H₄: Government Support has a positive and significant impact on the selling intention of on-timber forest products

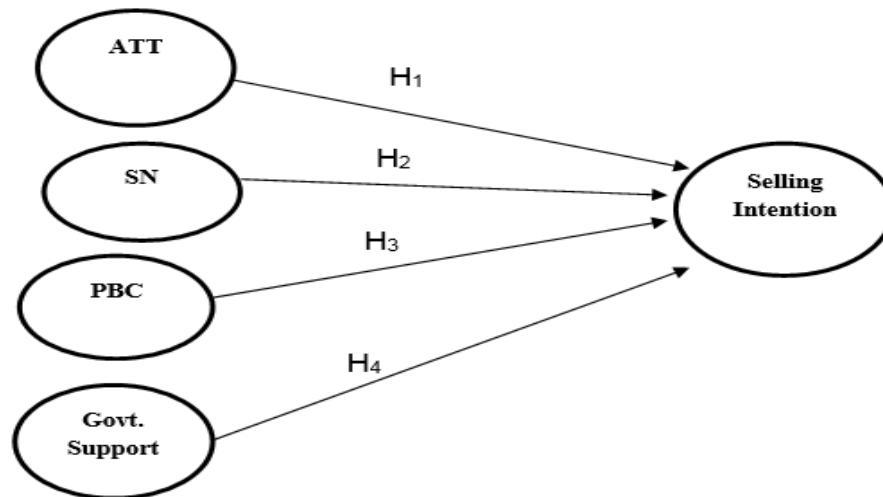


Fig1: Antecedents of selling intention of non-timber products

3. Objectives of the study

- To explore the impact of Attitude, Subjective Norm and Perceived Behaviour Control on Selling Intentions of NTFP's.
- To understand the impact of Governmental support on Selling Intentions of NTFP's.
- To provide suitable suggestions for better commercialization of NTFP owing to the existing problems in this area.

4. Research Methodology

The current study is conducted using deductive method. It has adopted a purposive sampling method for collection of data. In this research tribal men and women, those who regularly collect non timber products (Sal leaves) are the respondents. This study is conducted in the Keonjhar district of Odisha in India. A self-administrative questionnaire using pre-existing measurement scales(from extant literature)was prepared and administered among the target respondents. The questionnaire was translated into Odia language and two postgraduate students of Commerce stream were appointed for the interview with respondents. These two students conducted interviews to collect the primary data from the respondents. The data collectors, interviewed the respondents and filled up the questionnaires. The data collectors attended 200 households those are involve in collecting and selling the non-timber products. Finally 187 questionnaires, which were completely filled were selected for analysis which refers to 93.5% response rate. The demographic profile of respondent has been illustrated in the Table.1.Further this work employed structural equation modelling (SEM) to evaluate the dimension model and structural model. In the first phase, this investigation accessed the measuring model. And in the second phase,

hypothesis testing was performed to determine the substantial association between endogenous and exogenous variables.

Table 1: Demographic profile of the respondents

| | Frequency (N=200) | Percentage |
|-----------------------|-------------------|------------|
| Gender | | |
| Male | 140 | 70% |
| Female | 60 | 30% |
| Age | | |
| 20-30 | 74 | 37% |
| 30-40 | 62 | 31% |
| 40-50 | 49 | 24.5% |
| Above 50 | 15 | 7.5% |
| Monthly Income | | |
| 5000-10000 | 27 | 13.5% |
| 10000-15000 | 71 | 35.5% |
| 15000-20000 | 63 | 31.5% |
| Above 20000 | 39 | 19.5% |

Sources: Compiled by authors

Table 2: Variables Measurement

| Measures | Items | Sources |
|------------------------------------|---|---|
| Attitude | 1. I think involvement in NTFPs business is a good idea. 2. I think selling NTFPs in the market for income generation is a wise idea. 3. I think doing NTFPs business is financially viable for me. 4. In my opinion it is profitable to do NTFPs. | Cheng et al. (2006) |
| Subjective Norm (SN) | 1. People who are my influence behaviour who should collect and marketing of NTFPs. 2. People whose opinion I value would prefer selling of NTFPs. 3. Collection and marketing of NTFPs would make a good impression about me on the other people | Wu and Chen, (2005) |
| Perceived Behavioral Control (PBC) | 1. I would be able to use e – brokerage well in managing of NTFPs in marketing. 2. Using and selling were entirely under my control. 3. I had the resources, knowledge, and ability to the marketing of NTFPs. | Wu and Chen, (2005) |
| Government support (GS) | 1. Government direct market link attracts me to collect and sell NTFPs. 2. Market linkage support from the Govt help me with the easy sale of NTFPs. 3. Market support from the govt help me to collect and market NTFPs | Wang et.al (2018) |
| Selling Intention | 1. Intention to continue collecting and marketing NTFPs rather than discontinuing their use. 2. I intend to continue the collection and marketing of NTFPs. 3. If I could, I would like to continue marketing and selling of NTFPs. | (Paola Torres Maldonado et al.2011; Venkatesh, Thong, and Xu2012) |

Source: Scale referred from Ming-Chi Lee (2009)

5. Measurement Model Evaluation

The study also determines reliability value, which refers to Composite Reliability Test (CR) and Average Variance(AVE) .The internal consistency of scale items which refers to the Composite Reliability Test(CR) has a proposed limit of 0.70 and AVE to be 0.50 respectively(Hair et al., 2011).As the value goes higher, it is predicted that the constructs of the study are more reliable and valid and necessary part of Confirmatory factor Analysis(CFA). In the current study the required values of Average variance and Composite Reliability fall between the ranges of 0.65 to 0.749 and 0.849 to 0.899 respectively.

The factors for each construction of the Composite Reliability assessment for creating valid data are met in Table.3, the Average Variance (AVE) section was done in two ways. Each construction was reserved for a valid data, and therefore the AVE value should be 0.5 and higher (Hair et al., 2011). As may be the case, the study reflects the Average Variance value of each construct as shown in Table 3.

Table.3 shows an analysis of discrimination, where the root of the Average Variance is displayed in extreme triangles, and therefore the root of the Average Variance is larger than the value of the relation, which indicates a suitable level of validity discrimination (Hair et al., 2011).

The factors loaded for respectively construction in Table 4 are more than 0.7 (Hair et al., 2011), with respect to construction discrimination valid data. The current study evaluates the Common Method Differences (CMV) and proposes it as a single-factor method (Podsakoff et al., 2003).

Table 3: Factor loadings

| | Attitude | Selling Intention | Government Support | Perceived Behavioural Control | Subjective Norm |
|--------------------------------|----------|-------------------|--------------------|-------------------------------|-----------------|
| Attitude1 | 0.827 | | | | |
| Attitude2 | 0.846 | | | | |
| Attitude3 | 0.836 | | | | |
| Attitude4 | 0.786 | | | | |
| Selling Intention1 | | 0.909 | | | |
| Selling Intention2 | | 0.811 | | | |
| Selling Intention3 | | 0.865 | | | |
| Government Support1 | | | 0.842 | | |
| Government Support2 | | | 0.768 | | |
| Government Support3 | | | 0.812 | | |
| Perceived Behavioural Control1 | | | | 0.843 | |
| Perceived Behavioural Control2 | | | | 0.855 | |
| Perceived Behavioural Control3 | | | | 0.859 | |
| Subjective Norm1 | | | | | 0.864 |
| Subjective Norm2 | | | | | 0.825 |
| Subjective Norm3 | | | | | 0.904 |

Sources: Compiled by authors

Table 4: Validity and Reliability of constructs

| | Cronbach's Alpha | Composite Reliability | Average Variance Extracted (AVE) |
|--------------------|------------------|-----------------------|----------------------------------|
| Attitude | 0.843 | 0.894 | 0.679 |
| Selling Intention | 0.827 | 0.897 | 0.744 |
| Government Support | 0.737 | 0.849 | 0.653 |
| PBC | 0.813 | 0.889 | 0.727 |
| Subjective Norm | 0.831 | 0.899 | 0.749 |

Table 5: Correlation matrix

| | Attitude | Selling Intention | Government Support | Perceived Behavioural Control | Subjective Norm |
|--------------------|----------|-------------------|--------------------|-------------------------------|-----------------|
| Attitude | 0.824 | | | | |
| Selling Intention | 0.782 | 0.862 | | | |
| Government Support | 0.764 | 0.676 | 0.808 | | |
| PCB | 0.793 | 0.863 | 0.639 | 0.853 | |
| Subjective Norm | 0.778 | 0.763 | 0.619 | 0.824 | 0.865 |

Sources: Compiled by authors

5.1. Structural Model Evaluation

In the second step of analysis, a thorough Boot Strapping procedure was followed to check the constructive path of the Conceptual Framework structure. The value of constructive co-operation is described in Figure.2.

Table 6: Multicollinearity testing

| Items | VIF |
|--------------------------------|-------|
| Attitude1 | 2.112 |
| Attitude2 | 2.219 |
| Attitude3 | 2.009 |
| Attitude4 | 1.827 |
| Selling Intention1 | 2.517 |
| Selling Intention2 | 1.630 |
| Selling Intention3 | 2.105 |
| Government Support1 | 1.439 |
| Government Support2 | 1.428 |
| Government Support3 | 1.523 |
| Perceived Behavioural Control1 | 1.786 |
| Perceived Behavioural Control2 | 1.776 |
| Perceived Behavioural Control3 | 1.788 |
| Subjective Norm1 | 2.199 |
| Subjective Norm2 | 1.621 |
| Subjective Norm3 | 2.511 |

Sources: Compiled by authors

Table 7: Determinants of co-efficient

| | R ² | Adj. R ² |
|--------------------------|----------------|---------------------|
| Selling Intention | 0.779 | 0.774 |

Source: Compiled by authors

Table 8: Hypothesis testing

| Hypothesized relationship | | B-Values | T-statistics | P Values | Decision |
|-------------------------------|----|----------|--------------|----------|-----------|
| Attitude | SI | 0.146 | 2.356 | 0.018 | Supported |
| Government Support | SI | 0.136 | 0.366 | 0.715 | Rejected |
| Perceived Behavioural Control | SI | 0.605 | 6.615 | 0.000 | Supported |
| Subjective Norm | SI | 0.067 | 0.822 | 0.411 | Supported |

Sources: Compiled by authors

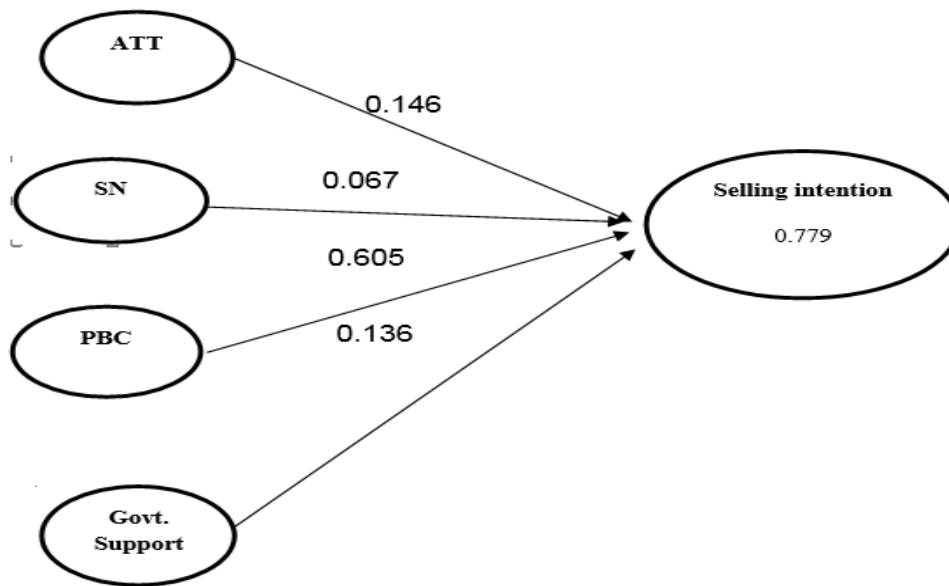


Fig 2: Model of selling intention of non-timber products of the study.

Commercialisation of NTFPs can make a huge impact on enhancing the poor state of forest resources by using business capabilities. Since NTFP-based commerce has the potential to contribute to GDP, and is also beneficial to local marketing and livelihood. Strong policies and regulations should be formulated in support of NTFP. In the case of land tenure rights, people are expected to pay more attention to the sustainable harvest of NTFPs, and therefore the small privatization of NTFPs will be found in their private property where plants can be easily re-produced. It is impossible for the beneficiaries to use their rights for permanent purposes without traditional access to forest protection. Forgiveness of land titles and the preservation of the fear of

expulsion can inspire more controlled use of forest resources. Moreover, under the direction of private companies looking for personal gain, communities are often left to change the ownership of formal property, making the formal sector unable to meet the legal standards of commercialisation. With the adequate training, it can lead to intention to behaviour of commercialisation. Pricing and the ability to formulate trade rules are also important in defining profit margins within the NTFPs marketing chain. Therefore, the government must encourage and provision the establishment of the manufacturer organisation, so that they are able to better comprehend the rural community. This could expand access to networking and enhance monetization and ultimately lead to sustainable growth of Industries.

6. Discussion and Conclusion

Commercialisation of NTFPs has a huge impact in controlling the poor state of forest resources in the presence of business capabilities. Since NTFP-based commerce has the potential to contribute to GDP and is also beneficial to local marketing and livelihood, NTFP must have a strong policy or regulation. According to the findings, the independent variable of the study explains 77% of the variation in selling intention. Additionally, attitude significantly and favourably influences selling intention, with a value of 0.146. In this study, it is discovered that government support had no discernible influence on the selling intentions of two additional independent variables: Perceived Behavioural Control and Subjective Norm, while the beta co-efficient, were found to be 0.067 and 0.605, they had a positive influence on the selling intention.

One of the biggest issues is market volatility, yet controlling the market is not something the government should do since it would not be sustainable in many ways. The primary reasons for the shortage of goods and plant species are overuse of the produce and improper methods of collecting . As demand rises, more NTFPs are collected, but the number of trees in the forest is not rising at the same rate. Demand and supply data are difficult to obtain until a robust system is in place. NTFP collection is seasonal, making it difficult to reduce the demand and supply data when demand exceeds supply. The principal collectors are obligated to sell the goods for less money. Because there are currently no suitable storage facilities or adequate understanding of value addition, the primary collectors are forced to sell the products at cheaper prices and without proper value addition. Some NTFP items are occasionally discounted or left unsold in the market because they lack value and recognition. Government must therefore provide supporting hand by availing fund MSP to make up for such loss and bring enhancement in commercialization of NTFP's.

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