THE USE OF MAHUA OIL IN ACHIEVING A SUSTAINABLE BUSINESS MODEL IN RURAL ENTREPRENEURSHIP
Fr. Tijumon Mankottil Sebastian

Abstract: The aim of this research is to achieve a better understanding of rural entrepreneurship in the district of Bastar in the state of Chattisgarh, India. The study proposes a sustainable business model for different tribal groups in the district to understand the effectiveness of rural entrepreneurship efforts designed to provide additional income from harvesting and selling Mahua seeds, a locally available product. The Analysis of Variance (ANOVA) and independent sample T-test were used to analyze the perception and relationship of innovation, patriotism, social empowerment, entrepreneurial drive and availability of natural resources. The results show that the perception of rural entrepreneurship is no different across the villagers' various demographics (gender, age, and education). Additionally, it was also found that there is no difference among villagers in their readiness to implement a sustainable business model when classified by age. Most of the respondents agree that Mahua oil can improve their livelihood and new innovation will help to enhance the economic being-well of the area. They regard innovation, entrepreneurial drive and availability of natural resources are very important to achieve a sustainable business model in entrepreneurship. On the other hand, patriotism and social empowerment are considered far less important. Recommendations based on these findings were suggested for the further development of self-sustainability.

Keywords: Entrepreneurship, innovation, patriotism, social empowerment, entrepreneurial drive, Mahua oil.

1. Introduction
Entrepreneurship can be defined as the act of being an ‘entrepreneur,’ a French word meaning "one who undertakes an endeavor" (Kuehal, 1997). Entrepreneurs typically gather resources, including innovations, finance and business insight, in an effort to transform innovations into economic commodities. Entrepreneurship is a necessary element for stimulating economic intensification and employment opportunities.

Entrepreneurial activities have existed since the beginning of human history. With the passage of time, however, they have evolved into different modes. The entrepreneurs of earlier times prominently pursued non-industrial modes of wealth creation, for example, getting positions in the palaces of emperors and kings. In the Middle-Ages, wealth was obtained through military success. Military innovations led to victory in the battlefield with its attendant booty and treasures. The conquest of England by William the Conqueror in 1066 is a prime example of medieval entrepreneurial activity (Michael, 2009). The objective was to gain land and power. In India, during the middle Ages, entrepreneurship took the form of architectural development when Indian kings undertook the construction of many famous palaces and art centers. For example, the king of Gawalar, Mahadji Scindha made a cultural center in his palace. King Jayji Rao building the Jaivila Palace to welcome the Prince of Wales is another example of middle Ages entrepreneurship. By the late Middle-Ages, the rules of the game had changed. This epoch saw the rise of nation states and peace and stability which led to a number of activities neither military nor landholding that could be called entrepreneurial (Dollinger, 1955). This
included some construction projects, like bridges, castles, cathedrals, etc. Also, some monastic orders in the Catholic Church developed talents required for entrepreneurship. The Benedictine monks, for example, developed agricultural farms such as the Vagaman farm house in Kerala, India. Another example is the optical telescope developed by Christopher Scheiner and Laurent Cassegrain, who were both 17th century Roman Catholic priests (Wolff, 2007).

The 18th, 19th, and early 20th centuries can be described as glorious periods for entrepreneurship as an enormous amount of wealth was created, particularly by the British, Spanish, and Portuguese (Romer, 1986). An analysis of colonial entrepreneurship history also shows that during that period, a kind of military-powered entrepreneurship began. Although India was under British rule and Indian entrepreneurial activities were limited, cases of entrepreneurship could be found in the British colony. In 1868, for example, Jamsetji Nusserwanji Tata established a trading company dealing in cotton in Bombay (Lee, 2006). Today entrepreneurship is an act of being an entrepreneur, that is, of taking an innovative step out of nothingness.

Entrepreneurship can be viewed at two levels; the macro and micro level. The macro (wide) view of entrepreneurship presents a broad array of factors that relate to success or failure in contemporary entrepreneurial ventures. This includes external processes that are sometimes beyond the control of the individual entrepreneur as they exhibit a strong external locus of control point of view. The micro (narrow) view of entrepreneurship examines the factors that are specific to entrepreneurship and are part of the internal locus of control. It looks at a particular project and whether a potential entrepreneur has the ability, or control, to direct or adjust the outcome of each major influence. At the micro level, the entrepreneurial function has proven its importance as organizer of the production of goods or services. A number of conclusions can be drawn from this brief review of entrepreneurship history. First, there is more than one way to study entrepreneurship. Second, as the rules change, so do the activities entrepreneurs pursue. Finally, as a whole, entrepreneurship can be productive or destructive for society.

This paper focuses on entrepreneurship in India (officially called the Republic of India). Specifically, it looks at tribal populations in the district Bastar in the state of Chhattisgarh. India is the world’s seventh largest country geographically speaking and the second-most populous country with over 1.18 billion people. It is also the most populous democracy in the world. The state of Chhattisgarh, one of the Indian states in the western side of India, has the largest number of tribal populations in the country. Bastar is a conglomeration of five tribal districts. Bastar tribes are among the most primitive tribes in the world. They have been living in this land for centuries and are very poor. Since they consider the entire land as belonging to the tribal community, no private possession or ownership is allowed. As a result of this belief, the locals lost much of their property to outsiders. Adding insult to injury, there is a total lack of education which impoverishes them even more.

Rural development and entrepreneurship goes hand in hand. They can yield phenomenal success and empower local rural people. The central government and various organizations have been promoting rural entrepreneurship as a strategic development that could accelerate the rural development process. Both government and non-government agencies seem to agree on the urgency to promote rural entrepreneurs, so as to create sustainable growth. Entrepreneurship provides employment opportunities, which lead to more disposable income and eventually provide a better standard of living among
the rural population. This is perhaps one of the key strategies to prevent rural unrest and eradicate social elements that are unhealthy for progress and development. This can also help farmers increase their daily earnings as well as employment opportunities for tribal women, which in turn can provide autonomy, independence and a reduced need of social support. Besides, entrepreneurship can provide sustainable economic sufficiency within the available resources and not deplete natural resources.

The researcher is particularly interested in exploring rural entrepreneurialships as a means to eradicate poverty in the tribal belt of Bastar. Thus, in light of the above, this study aims to investigate whether introducing a new method of extracting oil from Mahua seeds could provide an additional income for the tribal people of Bastar and whether this endeavor would generate economical benefits through a modern marketing system that would work seamlessly and effectively from production to consumption so as to enhance social development. In other words, this research empowers tribal people to be creative entrepreneurs. The thrust of it is to find ways of creating a viable economic development for the tribal people of Bastar, which will then facilitate health care and educational developments and ensure a better standard of living among these people.

After a review of the relevant literature pertaining to the main concepts developed in this study, most notably the entrepreneurship construct, and of the conceptual framework, the findings are then analyzed and discussed with a view to determine some trends among tribal people.

2. Review of Related Literature
- Entrepreneurship

The word entrepreneur is derived from the French *entreprendre*, which means ‘to undertake’ (Kuehal, 1997). An entrepreneur is thus one who undertakes to organize, manage, and assume the risk of a business. But in the last two decades, entrepreneurs have been doing so many different things that it has become necessary to broaden this definition. Today, an entrepreneur is an innovator or developer who recognizes and sees opportunities, converts these opportunities into workable/marketable ideas, adds value through time, effort, money, or skills, assumes the risks of the competitive marketplace to implement these ideas, and realizes the rewards from these efforts (Lambing, & Kuehl, 1997).

Entrepreneurship is simply the combination of ideas, hard work, and adjustment to the changing business market (Mathew, 1997). It also entails meeting market demands (Ziegler, 2009). The Oxford dictionary defines an entrepreneur as “a person who makes money by starting or running a business, especially when this involves taking financial risks.” Kirzner (1978), a social psychologist determined that an entrepreneur is a person who is alert to business opportunities that have not been identified by others. The central concept outlined by Kirzner is alertness; the essentially entrepreneurial element in human action - alertness to information, rather than its possession or the market condition. Entrepreneurship is the act of being an entrepreneur, a French word meaning “one who undertakes an endeavor” (Drucker, 1994).

The famous Austrian economist Schumpeter (1942) defined entrepreneurship as “an event that introduces a new product, a new product method, a new market, or a new form of organization.” According to Schumpeter, in a perfect scenario, these actions will help generate wealth by creating a demand in the market from a newly introduced innovation. Entrepreneurship is thus “the dynamic process of creating incremental wealth” (Kao, 1997). It is created by individuals who assume the major risks in terms of
equity, time, and/or career commitment of providing value for some product or service. The product or service itself may or may not be new or unique but value must somehow be infused by the entrepreneur by securing and allocating the necessary skills and resources.

In the words of Vesper (1988), “An entrepreneur is an individual who establishes and manages a business for the principal purpose of profit and growth. The entrepreneur is characterized principally by innovative behavior and will employ strategic management practices in the business.” An entrepreneur makes changes in the society by purposeful searching, careful planning, and sound judgment in carrying out the entrepreneurial process. Uniquely optimistic and committed, entrepreneurs do things differently in order to bring out new resources or endow old ones with a new capacity, all for the purpose of creating wealth (Nicholls, 2006). And by so doing, they do service to the locality where they live.

- **Entrepreneurial Drive**

  Getley (1976) defined entrepreneurial drive as the fire that drives one life’s work; in other words, it is full of emotional energy, drive, and spirit. In other words, to succeed, one has to believe in something with such a passion that it becomes a reality (Amabile, and Khaire, 2008).

- **Availability of Natural Resources**

  Natural resources are naturally occurring features or characteristics of the environment. Natural resources often have a significant commercial value; for example, forest products like bamboo, wood, wild honey, edible fish, etc. They also include minerals and other resources. In the tribal context, natural resources mean availability of natural resources (freely available). This helps sustainability, especially forest products.

- **Innovation**

  Shumbteter (1942) defined innovation as “the introduction of new goods, new methods of production, the opening of new markets, the conquest of new sources of supply, and the carrying out of a new organization of any industry.” His founding work brought out the theory of "entrepreneur as innovator" as the first step in motivating monetary growth. The inventive action of entrepreneurs feeds a creative "destruction process" by causing constant disturbances to an economic system in equilibrium, creating opportunities for economic rent. Schumpeter's theory predicts that an increase in the number of entrepreneurs leads to an increase in economic growth (Springer, 2005).

  The specialty of innovation is that this can be directly empirical and findings are measurable. Researchers may use either input measures such as R&D expenditures (Follingaer, 1992) or innovation outcomes such as patents (Griliches, 1990). A number of experimental findings have come out from this hub on rural progress and innovation.

- **Patriotism**

  Patriotism is the conviction that once country is superior to all others because they were born in it (Raymond, 2003). The Greek philosopher Socrates gave a broader definition. He said that patriotism “does not require one to agree with everything that his country does, and would actually promote analytical questioning in a quest to make the country the best it possibly can be.”

- **Rural Empowerment**

  Rural empowerment is a process of development by cultivating social opportunities through providing necessities and using available possibilities of development (Lanbing, 2000).

- **A Real Life Example**

  Tamukha is a dusty and poor hamlet in the state/province of Bihar in Northern India. Even after 63 years of independence, this small village has no electricity, portable water, roads, and transport facilities. One man with an innovative idea transformed the desperate condition of the village. Relinquishing a
successful career in the USA, thirty-three-year-old Mr. Gyanesh Pandey returned to his hometown in Bihar in 2007. A mind-altering Vipassana session (Indian form of meditation for concentration) reaffirmed his desire to stay put in Bihar. After some intensive research and experiments in collaboration with his friends, Ratnesh Yadav, Manoj Sinha, and Charles Ransler, the team decided that the most feasible way to make electricity would be to make it from rice husks. So, they set up a Husk Power System (HPS). The idea was so new and revolutionary that it created an entirely new system. Pandey’s and his friends’ idea was to provide power to villagers who depended on agriculture as their main occupation in a cost-effective and environmentally-friendly manner. At first, many were skeptical about its success. By July 2010, though, HPS owned and operated 40 mini-power plants (35-100 kilowatts) across the province of Bihar. Through this unique green technology, villages get uninterrupted power for 6-12 hours per day by setting up plants that burned rice husks to generate gas to run generators. “Becoming an entrepreneur was an evolutionary process. I had a good life in America. I did not face any problems there, but I always had the feeling that I had to do something for our villages. I do not feel I have made any sacrifice. Today, there is hardly anything I do other than work. It gives me the satisfaction no job can ever give” (cited in Shakar, 2010). Pandey felt India's acute power crisis could be solved efficiently with renewable resources. Mr. Gyanesh Pandey is the modern-day alchemist who transformed piles of discarded rice husks into green power. Around 50,000 villagers in 120 villages across Bihar and three villages in Uttar Pradesh have benefited from these ‘green’ power plants. For villagers, this cheap and eco-friendly model of generating electricity is a miracle that has transformed their lives. He is the quintessential example of a rural entrepreneur as innovator.

3. Conceptual Framework and Methodology

On the basis of the concepts, theories, and related research reviewed in the preceding section, a conceptual framework was developed. It shows the relationship between rural entrepreneurship and the variables.

![Conceptual Framework](https://example.com/framework.png)

Source: created by the author for this study

Based on the objectives of this study, five hypotheses need to be tested. The researcher employed both qualitative and quantitative methods. Quantitative research collects data through survey questionnaires. A structured questionnaire with close-ended questions was developed. It consists of thirty three items. Since the researcher tried to determine the local people’s perception of Mahua oil, the local shopkeeper, Chanduru from Bhanpuri Village in Bastar was enrolled to assist in the data collection. The researcher also secured the help of coordinators of the Bastar Savak Mandal (a local NGO) and self-help groups already existing in the area.

Given that this research aims to examine the tribes’ attitude toward innovation (the use of Mahua oil) and achieving a sustainable business model in
entrepreneurships, the target population was people living in the Bastar region. The research target respondents were over fifteen years old irrespective of gender. Five hundred people were selected from the whole population using the sampling technique.

The sampling element and unit for this research is Mahua, a local product, and the local people familiar with the raw material called Mahua seeds. The Statistical Package for Social Science (SPSS) program was used to analyze the data collected from the respondents. Descriptive frequency statistics, the one-sample test, the one-way ANOVA test, and the independent sample t-test were used to determine the results.

4. Results and Discussion

All the samples of the research population (n=220) were analyzed statistically. 161 respondents (73.2%) were males and 59 (26.8%) females, an overwhelmingly male majority. Out of 220 respondents, 91 (41.7%) were between 15 and 34 years old, 96 (43.6%) in the 35-44 age range, and 33 (15%) 45 years old and older. Most of the respondents (43.6%) are aged between 35 and 44 years and therefore have much experience with life.

The analysis shows that out 220 respondents, 84 (38.2%) do not know how to read and 136 (61.8%) know simple reading and writing, making any progress toward entrepreneurship more difficult.

The highest mean in terms of perception of rural entrepreneurship has an average mean value of 3.795758. The average standard deviation is .3296173. The maximum average number of people considering rural entrepreneurship as innovation is 4.6667 and the minimum average perception of innovation is 2.5000.

With regard to patriotism, the highest mean in terms perception of rural entrepreneurship has an average mean value of 3.9455. The average standard deviation is .42625. The maximum average number of people considering rural entrepreneurship related to patriotism is 5.000 with the minimum average perception of patriotism at 2.67.

As to social empowerment, the highest mean in terms of perception of rural entrepreneurship has an average mean value of 3.8705. The average standard deviation is .35069. The maximum average number of people considering rural entrepreneurship to be related to social empowerment is 4.75. The minimum is 2.50.

Regarding entrepreneurial drive, the highest mean of perception in terms of rural entrepreneurship has an average mean value of 3.4645. The average standard deviation is .48316. The maximum average number of people considering rural entrepreneurship related to entrepreneurial drive is 4.40. The minimum average perception of entrepreneurial drive is 2.40.

With regard to the availability of natural resources, the highest mean in terms of perception of rural entrepreneurship has an average mean value of 3.6523. The average standard deviation is .43215. The maximum average number of people considering rural entrepreneurship to be related to the availability of natural resources has an average mean value of 4.75. The minimum average perception of availability of natural resources is 2.50.

Finally, as far as readiness to implement a business model is concerned, the highest mean has an average mean value of 4.0536. The average standard deviation is .34856. The maximum average number of people who consider themselves ready to implement the sustainable business model is 4.80. And the minimum average perception of readiness to implement business Model is 2.80.

The hypotheses were examined in order to determine whether there is any difference in the relationship between the respondents’ demographic characteristics and rural entrepreneurship. The results of
hypothesis testing H1o and H1a show a significance 2-tailed value at .982, which is higher than 0.05. This indicates that the null hypothesis failed to be rejected. Thus, there is no significance difference among villagers with regard to their perception of rural entrepreneurship in terms of innovation when classified by gender.

The results of hypothesis testing H2o and H2a indicate that the significance value is .739, which is higher than 0.05. This indicates that the null hypothesis failed to be rejected, which means that there is no significance difference among villagers in respect of their perception of rural entrepreneurship in terms of innovation when classified by age.

The results of hypothesis testing H3o and hypotheses H3a show the significance 2-tailed value at .778, which is higher than 0.05, indicating that the null hypothesis failed to be rejected. This means that there is no significance difference among villagers with regard to their perception of rural entrepreneurship in terms of innovation and education.

The results of hypothesis testing H4o and H4a show the significance 2-tailed value at .294, which is higher than 0.05. This indicates that the null hypothesis failed to be rejected. It means that there is no significance difference among villagers with respect to their perception of rural entrepreneurship in terms of patriotism when classified by gender.

The results of hypothesis testing H5o and hypothesis H5a indicate that the significance value is .101, which is higher than 0.05. This indicates that the null hypothesis failed to be rejected, which means that there is no significant difference among villagers with regard to their perception of rural entrepreneurship in terms of patriotism when classified by age.

The key finding in this study is that the use of Mahua oil can bring sustainability to the tribes’ lives. Sustainability, however, depends upon the product, price, promotion and place. Achieving economic sustainability using Mahua oil effectively requires product quality. The foundation for the effective marketing of Mahua oil is that one must know its product quality and approach it from the right perspective, which involves a clear understanding of the oil and the resulting customer benefits. This in turn involves customer segmentation on the basis of benefits, which many marketing experts feel is the best and most effective manner in which to segment the market. This form of market segmentation is considered most effective. Once one tribal family benefits, it can effectively promote its achievements as a way for other families to satisfy their needs. The focus should be always based on the benefits. At the same time tribes who make use of the product must know its strengths and weaknesses, its image, and attraction. For long-lasting economic development, different products derived from Mahua oil must be marketed.

Product and price decisions are inseparable because of the importance that buyers place on price in relation to value. Buyers see price as a reflection of the value received. This means that there is a real opportunity to enhance the product’s acceptance with proper pricing. In the case of Mahu oil, during the first stage, price does not matter because the natural resources collected are for their own consumption. However, in the second stage when the product sold to people so that an income can be derived, the price to be set should reflect an understanding of the specific market.

Marketers should keep in mind that the price mix varies at the different stages of the product life cycle, i.e., at the pioneering stage, growth stage, maturity stage and declining stage. While adopting a particular strategy, marketers have a number of alternatives, such as leading the field by keeping prices down, adopting a strategy of niche marketing by differentiating the product from that of
the market leaders, or selecting a particular segment to which the marketers aim their appeal.

Distribution or marketing channels are defined as sets of interdependent organizations involved in the process of making a product or service available for use or consumption. The ultimate objectives of a distribution channel can be summarized as follows: delivering the right quality and quantity of a product, in the right place, at the right time, at the right cost, to the right customer. Distribution is emerging as a critical element of strategic management and as one of the few remaining sources of real competitive advantage. Apart from influencing costs, increasingly distribution channels also support and enable product differentiation by adding value to the product and by contributing to the total brand experience and projecting powerful images. The main distribution tasks consist in communicating information to the relevant people and provide the necessary arrangements with easy purchase facilities. To provide information in the tribal belt, one must use an effective communication system like notices on market days, mike announcements, and mouth-to-mouth information.

5. Conclusion and Recommendations

A major objective of this research was to achieve a better understanding of rural entrepreneurship in the Bastar district in the state of Chattisgarah, India. It discussed how new business models can help tribes to be self-sufficient. In that district like anywhere else, the growth of society mainly depends on economic progress. As this research shows, one way to make people self-sufficient is to use products available in their own localities. This is all the more relevant as a majority of the members of the local tribes know a lot about natural products and their availability in the area as well as about seasonal changes, and so on. Clearly, the natural environment in which they live is the best source of raw materials for their businesses. With the income received by each family increasing, the extra amounts of money can be used for further development that will result in more progress for all members.

The insights on the effectiveness of the sustainable model developed in the Bastar district which this study provides are based on actual tribal perspectives. This research also identifies the relationships between the demographics of the respondents and their perception of rural entrepreneurship. Overall, innovation, the people’s entrepreneurial drive and the availability of natural resources have a significant relationship with the locals’ readiness to implement a sustainable business model. In contrast, patriotism and social empowerment have no relationship with their readiness to implement a sustainable business model.

- Recommendations for the Future Research

This study has been conducted with a relatively limited understanding of the potential applications of Mahua oil. Further research about its potential use in a variety of related or non-related fields, such as, for example, making Mahua cake (husk) should be conducted. A more elaborate green-based research related to the Mahua tree and its sub-products should also be undertaken in order to tape into all the resources it offers. In addition, there is a great need for studies about tribal land and deforestation in the tribal belt and its effects.

- Limitations of the Study

Firstly, this study concentrated on the Bastar district in the state of Chhattisgarh. Therefore, its findings may not be applicable to other areas and reflect the issues they face. Different tribes have different customs and practices (especially migrating tribes), speak their own dialects, and need to cope with a different natural environment, which may render the kind of economic development program considered in this study ineffective.
Secondly this study was conducted over a short period, is based on a limited number of interviews, and was conducted with research experience. As a result the outcomes may not be the same from person to person. The same research conducted by another person may deliver additional insights. Thirdly, the aggregate market value of the product considered varies according to the market situations. The researcher’s calculations of profit may therefore change depending on the market conditions and the market considered.

References


Schumpeter, J. ( 1942). Can capitalism survive, Retrieved from http://www.google.co.th/#!/hl=en&biw=1345&bih=555&q=google.co.th%2Fboo ks%3Fisbn%3D0415107628&q=fp=5faced16e1cb8cfc


