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AET CHAIRMAN'S MESSAGE[1]

- Fr A G Leonard SJ

First and foremost, we, especially the LIFE-MEMERS, now numbering a little more than 850, of the widely-known Association of the Economists of Tamil Nadu ought to remain grateful to the Jesuit Management represented by the authorities (*Rev. Dr G Leonard Fernando SJ*, the Rector; *Rev. Dr Peter Xavier SJ*, the Secretary; and *Rev. Dr Xavier Arockiasamy SJ*, Principal). Every one belonging to the Department of Economics in a college in Tamil Nadu knows that our AET conducts its Annual Conference every year in a new venue.

Last year, it was our misfortune that we could not conduct our conference in a college where we found the much-required atmosphere was absent. As recorded in the Holy Bible the People of God in Egypt, struck with a famine, listened to the Lord telling them *"Go Joseph"*, we confidentially rushed to St Joseph's College, Tiruchirappalli. Their assurance made each of us to start preparing for our Annual Conference at SJC. Like other people, we experienced a set-back, necessitated by a Government Order. Thus we had the conduct of this 40th Annual Conference now.

Despite experiencing several changes in the time-table of this Annual Conference, we were blessed with an opportunity to get Rev. Dr Peter Xavier SJ at our Valedictory function. He delivered a fine Valedictory Address.

Our ever-energetic AET Secretary Dr Kumar of Jamal Mohammed College, Tiruchirappalli, is available for initiating several steps to make AET march forward.

Our ever-available AET Treasurer, Dr G Iruthayaraj never hesitates to walking an 'extra-mile'. As the Head of the Department of Economics, he had to perform this time yet another role, as the Local Organising Secretary for this Annual Conference.

With every one, teacher or student, voluntarily comes forward to carry out even his unexpressed wish. The participants felt at once the warmth needed. It was a hassle-free experience.

Our AET's Public Relations Officer Rev. Dr P Paulraj SJ, Director of St Joseph's Institute of Management, and our Life Member personally supervised the officials to serve us with a delicious lunch and snacks. Dr M Suvakkin, AET's Head Office Secretary and other members of the Department of Economics were with the participants, making them happy.

With all our needs were attended to, the paper-presenters did a fine job, obviously under the care and protection of AET's senior members, acting as Chairman and Rapporteurs. It is their work that forms the bulk of this volume.

I am happy to greet the members of the Editorial Board, especially Dr R Rajendran, Dr V Mohanasundharam and Dr Suriyakumar for the excellent work of going through the papers presented and suggesting a good model to print them. I thank all our AET members for their magnanimity and generosity. Thanks also to our printers!

Love,

Your Brother,
Fr Leonard SJ
Loyola College, Chennai-600 034
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[1] At our AET's Journal PENINSULAR ECONOMIST containing the Papers presented at the AET's 40th Annual Conference held at St Joseph's College, Tiruchirappalli-620 002.

Association of Economists of Tamil Nadu

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Date : 02.02.2020

Presidential Address

on

Behavioural Economics and its Implications on Climate Change Policy

By

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BEHAVIOURAL ECONOMICS AND ITS IMPLICATIONS ON CLIMATE CHANGE POLICY

Prof. Dr. (Mrs.) DHULASI BIRUNDHA VARADARAJAN[2]

Introduction

I. Climate Change

Climate Change is the defining issue of our time and we are at a defining moment. From shifting weather patterns that threaten food production, to rising sea levels that increase the risk of catastrophic flooding, the impacts of climate change are global in scope and unprecedented in scale. Without drastic action today, adapting to these impacts in the future will be more difficult and costly. The UN Intergovernmental Panel on Climate Change (IPCC) was set up by the World Meteorological Organization (WMO) and United Nations Environment to provide an objective source of scientific information. In 2013 the IPCC provided more clarity about the role of human activities in climate change when it released its Fifth Assessment Report. It is categorical in its conclusion: climate change is real and human activities are the main cause. The report provides a comprehensive assessment of sea level rise, and its causes, over the past few decades. It also estimates cumulative CO_2 emissions since pre-industrial times and provides a CO_2 budget for future emissions to limit warming to less than 2°C. About half of this maximum amount was already emitted by 2011. The report found that:

- From 1880 to 2012, the average global temperature increased by 0.85°C.
- Oceans have warmed, the amounts of snow and ice have diminished and the sea level has risen. From 1901 to 2010, the global average sea level rose by 19 cm as oceans expanded due to warming and ice melted. The sea ice extent in the Arctic has shrunk in every successive decade since 1979, with 1.07 × 106 km² of ice loss per decade.
- Given current concentrations and ongoing emissions of greenhouse gases, it is likely that by the end of this century global mean temperature will continue to rise above the pre-industrial level.
- The report finds that limiting global warming to 1.5°C would require “rapid and far-reaching” transitions in land, energy, industry, buildings, transport, and cities. Global net human-caused emissions of carbon dioxide (CO_2) would need to fall by about 45 percent from 2010 levels by 2030, reaching ‘net zero’ around 2050. This means that any remaining emissions would need to be balanced by removing CO_2 from the air.

The Role of Human Activity

- In its Fifth Assessment Report, the Intergovernmental Panel on Climate Change, a group of 1,300 independent scientific experts from countries all over the world under the auspices of the United Nations, concluded there's a more than 95 percent probability that human activities over the past 50 years have warmed our planet.
- The industrial activities that our modern civilization depends upon have raised atmospheric carbon dioxide levels from 280 parts per million to 400 parts per million

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in the last 150 years. The panel also concluded there's a better than 95 percent probability that human-produced greenhouse gases such as carbon dioxide, methane and nitrous oxide have caused much of the observed increase in Earth's temperatures over the past 50 years.

- Human activities, particularly the combustion of fossil fuels, are altering the climate system.
- Human-driven changes in land use and land cover such as deforestation, urbanization, and shifts in vegetation patterns also alter the climate, resulting in changes to the reflectivity of the Earth surface (albedo), emissions from burning forests, urban heat island effects and changes in the natural water cycle.
- Scientists agree that today's warming is primarily caused by humans putting too much carbon in the atmosphere, like when we choose to extract and burn coal, oil, and gas, or cut down and burn forests.
- Human climate drivers include heat-trapping emissions from burning coal, gas and oil in power plants and cars; cutting down and burning forests; tiny pollution particles (aerosols); black carbon pollution more commonly referred to as soot; and changes in land use that also affects Earth's albedo.

The Paris Agreement of 2015 calls for a reduction in emissions worldwide enough to keep global warming under the dangerous threshold of 2°C. We can reach that goal through immediate and sustained action to reduce our heat-trapping emissions like adopting technologies that increase energy efficiency, expanding our use of renewable energy, and slowing deforestation (among other solutions).Crucial issues in the economics of climate change concern how to deal with long-run choices over time, as well as problems under risk, Although the uncertainty regarding the consequences of climate change appears to have decreased somewhat lately, since most researchers now at least agree that the changes in the climate that are starting to appear indeed are largely due to human activity, the overall extent of the changes as well as their distributional impact is still highly uncertain. Moreover, how people deal with choices under risk has important implications for the discussion of the appropriate discount rate, an issue that is of crucial importance in the economics of climate change. As the primary cause of recent global climate change is human, the solutions are also within the human domain.

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Behavioural Economics

"Behavioural economics is concerned primarily with the process of decision making regarding spending, saving, investing, borrowing, pricing, etc., and thus supplements the analysis of interrelationships among results of behaviour (amounts spent or saved, business investments, prices) which has been the traditional domain of economics." (Katona, 1968). Behavioural Economics is the combination of psychology and economics that investigates what happens in markets in which agents display human limitations and complications (Mullainathan & Thaler, 2001).

Behavioural economics is somewhat of a departure from the classical view of economic behaviour because it sets out to uncover explanations for the deviations from axioms typically relied upon in economics by reference to what is going on in the internal mind of the agent making the choices, rather than what is determined and characterised by the immediate choice environment they are in (Heap, 2013; Santos, 2011).

Behavioural economics is an area of research that tests the neoclassical assumptions that individuals are rational, possess all freely available information, and self-interested. This area of research has identified a number of consistent behavioural patterns which systematically violate these assumptions.

Use of Behavioural Economics

Behavioural economics research has played an important role in informing policymakers in areas such as personal health, labour markets, consumer markets and personal finance.In the environmental sphere, behavioural economics can inform public policy in two ways: (a) improving benefit-cost analysis (BCA) through methodological adjustments to nonmarket valuation techniques, and (b) informing the development of policy mechanisms to influence environmental behaviour.

We as humans make thousands of decisions each day, but many of these may be habits or choices that are not the most environmentally-friendly. Despite knowing that we need to adapt our behaviors to combat climate change, we may still not take the actions needed in our daily lives to be impactful. So what explains our failure to act when it comes to a crucial goal like saving the planet?

This chasm, the difference between good intentions and actual actions, is called the intention -action gap. It helps to explain why we may intend to save more money, conserve more energy and water, or buy sustainable products, but ultimately fall short .Understanding how we process information and how context affects our behavior can help policymakers design more robust and cost-effective interventions to ensure sustainable consumption behaviours.

Methods used in behavioural economics

The methods utilized in behavioural economics research include laboratory and field experiments (or trials), sometimes involving many thousands of people. The advantages of using methods of this kind are that they are easily interpretable by non-experts (e.g. they do not require sophisticated theoretical modelling), and yet provide a scientifically valid way of testing the effectiveness, costs, and public acceptability of innovative policy instruments.

The majority of research on behavioural economics in environmental policy currently focuses on nonmarket valuation. (Brown and Hagen).Perhaps the most important insights relate to the interpretation (and thus treatment) of protest responses, as well as the economic valuation of risk and investments in projects with cost or benefits in the distant future. In addition, behavioural economics has cast light on issues such as hypothetical bias, as well as reasons for the common finding that WTA does not equal WTP. These have important implications for valuation of non-market goods, and thus the optimal setting of policy stringency. Insights from behavioural economics are likely to benefit particularly environmental policy because many of the choices that have significant environmental implications are the outcome of a complex set of motivations. Indeed, such environment-related decisions often require careful consideration between external (e.g. financial), internal (e.g. intrinsic motivations) and social (e.g. norms) factors. A number of OECD governments have put in place mechanisms which encourage the consideration of insights from behavioural economics in their deliberations concerning policy design.

Concept of Nudge

Nudge refers to a method of generating conditions in which the decision maker is guided to make the best decision as judged by themselves. A related term is Libertarian

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paternalism, which refers to an economic policy decision making position that is sensitive to the view that people are not rational according to traditional economic models, and therefore policy makers are entrusted with arranging the choice architecture (decision-making environment) in which people make decisions appropriately for their own good. In particular, this approach, along with other similarly motivated proposals in Behavioural Economics often relegates problematic behaviour that doesn't align with classical economic models (i.e. biases) to the unconscious (Brocas& Carrillo, 2008). That is to say, when behaviours seem to be hard for people to justify, hard to articulate, speedily implemented, but malleable through the use of indirect methods such as priming (or nudging), then they are often described as based on intuitive (unconscious) processes (Kahneman, 2003).

Nudge is a concept in behavioral science, political theory and behavioural economics, https://en.wikipedia.org/wiki/Behavioral_science which proposes positive reinforcement and indirect suggestions as ways to influence the behavior and decision making of groups or individuals. Nudging contrasts with other ways to achieve compliance, such as education, legislation or enforcement. The nudge concept was popularized in the 2008 book Nudge: Improving Decisions About Health, Wealth and Happiness by two American scholars at the University of Chicago: economist Richard Thaler and legal scholar CaddSustein .It has influenced British and American politicians. Several nudge units exist around the world at the national level (UK, Germany, Japan and others) as well as at the international level (e.g. World Bank, UN, and the European Commission) A nudge, is any aspect of the choice architecture that alters people's behavior in a predictable way without forbidding any options or significantly changing their economic incentives. To count as a mere nudge, the intervention must be easy and cheap to avoid. A nudge makes it more likely that an individual will make a particular choice, or behave in a particular way, by altering the environment so that automatic cognitive processes are triggered to favour the desired outcome. An individual's behavior is not always in alignment with their intentions, termed a value-action gap. It is common knowledge that humans are not fully rational beings; that is, people will often do something that is not in their own self interest, even when they are aware that their actions are not in their best interest. As an example, when hungry, people who diet often under-estimate their ability to lose weight, and their intentions to eat healthy can be temporarily weakened until they are satiated.

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Human Behaviour and Nudges

A growing body of research that explains how human behaviour helped to create the climate crisis could also point the way toward solving it.

Thaler, a pioneering economist at the University of Chicago, has helped redefine how we understand human motivation and decision making. His groundbreaking research into behavioral economics has upended the concept of homo economics, notion that people are completely rational decision makers and found that humans are often quite irrational in their economic decisions. But Thaler's discoveries aren't limited to economics. We can also draw on his work as we address global challenges like climate change. (Brett, Jenks, 2017). Changing behavior to address environmental challenges has proven difficult because it usually requires cooperation amongst groups, and the benefits often take time to see. But the principles of behavioral economics, like those advanced by Thaler, give us reasons for hope. One bedrock principle of Thaler and other behavioral economists is that people are emotional and "predictably irrational" in their decision making. For example, people tend to assign

greater value to things if they own them. Thaler calls this the "**endowment effect."** Creating emotional connections between people and a coral reef or a local bird species could lead people to support their protection. Illegal fishing and overfishing has threatened fish stocks and the livelihoods of these rural communities. But rather than telling a fishing village how to manage its waters, we work with them to design their own solutions. This sense of ownership inspires fishers to not only abide by the management rules they set for themselves, but also become long-term stewards of the ocean ecosystem. A sense of ownership over their corner of the ocean and all that lives within it leads them to value it and protect it.

Another principle from Thaler's work is "**choice architecture**." Humans prefer simplicity, have a limited attention span, and go out of their way to avoid desired behaviors easier to adopt. This is the root of Thaler's famous "nudge theory," a term he helped popularize through a 2008 book called Nudge, which he coauthored with Cass Sunstein and which helps explain how small interventions can encourage individuals to make better economic decisions (Thaler and Sunstein, 2008). A well-known example of choice architecture from Thaler's work is "nudging" people toward saving more for retirement. Organizations can also make the sustainable, climate-smart decision easy, even fun. One great example is Ant Financial, a Chinese digital payment service, which created an app that "gamifies" carbon footprint tracking. The app tracks purchases made through its payment platform and awards points based on how environmentally friendly a purchase is, for example, buying a public transit ticket vs. fuel for a car. A built-in social network component allows users to compete with friends by using their points to grow "virtual trees." According to a report from the Green Digital Finance Alliance, by the end of January 2017, 200 million people across China were using the app, resulting in an estimated 150,000 tons of cumulative avoided carbon emissions.

Nudging and pro-environmental behaviour

Anne Sofie Elberg Nielsen et al. (2016) conducted experiment on a total of 30 cases covering nudging in energy consumption, waste and resource efficiency plus four types of nudges: 1) Provision of information, 2) Changes in the physical environment, 3) Changes in the default option and 4) Use of social norms and regular feedback.

- **Provision of information** Nudging using the provision of information is the most predominant type of nudge, often used in conjunction with changes in the default option. Providing credible and accessible information that reduces the choice complexity is a promising tool to increase pro-environmental choices. For instance, using in-house smart meters to display energy usage and provide transparency about the impact of current energy use and prices provides interesting results in terms of reducing energy consumption during peak hours.

- **Changes in the physical environment** Nudging through changes in the physical environment seems to be especially suitable to influence behaviour in relation to waste sorting, waste recycling and decrease in food waste. The Swedish case concerned waste recycling and used nudging as changes in the physical environment which, in the concrete case, meant introducing new sorting equipment for better segregation of waste sources. This nudge was applied together with provision of information and resulted in an increased food waste sorting of 44%–49%.

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- **Changes in the default options,** Changing the default to a green option can, for example, be used to promote increased diffusion of green energy. When a consumer chooses the type of electrical supply required – green electricity from renewable energy or conventional electricity based on fossil fuel, the default is set to green electricity. The consumer must actively opt out of the green default Germany show that a very large percentage of consumers choose or remain in default in favour of green electricity.
- **Use of social norms** and regular feedback. Social nudges in terms of using social norms through peer comparisons are interesting because this type of nudge is applied across both energy and water consumption as well as waste sorting. Related to energy consumption, a range of studies in the US, UK and Ireland have documented that information provision in terms of social feedback combined with frequent information on current energy consumption patterns can reduce energy consumption by up to 7%. In water usage, the program Water Smart is estimated to have reduced water use by 5% by a combination of feedback reports and peer.

Behavioural insights needed to tackle global challenges

The 2030 Agenda for sustainable Development, which includes the Sustainable Development Goals, gives us less than 15 years to fulfil ambitious goals, including achieving changes in how we consume and produce. Energy demand is set to grow by at least one-third by 2040, requiring stringent adoption of energy efficiency measures and less carbon-intensive sources to keep global temperature rise to under the Paris agreement targets of 1.5C to 2C.

By 2025, 3 billion people could face water scarcity; and by 2050, if consumption and production habits don't change, annual natural resource extraction would need to triple, exceeding the Earth's capacity to satisfy demand. The relatively subtle levers behavioral science provides can maximize outcomes for the money spent on interventions and have potential for scale.

"Agenda 2030 can only be accomplished if we understand the habits and behaviours that prevent our societies from fully achieving sustainable development," (Emly Bobrow, October 2018). Developed countries largely dominate the application of behavioural sciences in policymaking.

Environment at Rare, a conservation organization. Instead, psychologists and behavioral economists have shown that people are not only less rational than policymakers presume but also uniquely ill-suited to addressing environmental problems. (Sujoy Chakravarthy, 2019).

"We're not well-built for this kind of challenge," says Toby Park of Britain's Behavioural Insights Team, a company that has pioneered the use of psychology to help policymakers change behaviour through "nudges" rather than laws. "From an evolutionary perspective it makes sense to focus on immediate threats and benefits when the priority is survival. But when it comes to the environment, we are very much having our cake and eating it now, and too often aren't willing to make the immediate lifestyle compromises needed for long-term, collective benefit."

When it comes to a problem as immense as climate change, it is easy to feel discouraged by the seemingly piddling effects of personal behaviour. A few effective nudges here and there hardly seem sufficient in the absence of grand changes in environmental policy. But a new report from Rare finds this hopelessness misguided. Individual choices about everything from the food we eat to the cars we drive can have a significant impact on

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curbing greenhouse-gas emissions. Scaling up these behavioural changes could reduce about one-third of the projected global emissions between 2020 to 2050.

Application of Behavioural Economics to Environment

Behavioural Economics and Climate Change: Crucial issues in the economics of climate change concern how to deal with long-run choices over time, as well as problems under risk, i.e. issues where Behavioural Economics has identified that conventional theory may provide poor predictions of human behaviour. Although the uncertainty regarding the consequences of climate change appears to have decreased somewhat lately, since most researchers now at least agree that the changes in the climate that are starting to appear indeed are largely due to human activity, the overall extent of the changes as well as their distributional impact is still highly uncertain. Moreover, how people deal with choices under risk has important implications for the discussion of the appropriate discount rate, an issue that is of crucial importance in the economics of climate change (Kjell Arne Brekke et al., 2008).

Implications for Global Climate Negotiation

Behavioural Economics literature is also having its implications on cooperation for climate negotiations. First, people, and also countries, are able to make decisions that are not in their own material interest if they have other sufficiently strong reasons for doing so, such as obtaining a situation that is overall socially desirable and if this can be obtained in a way that is perceived as reasonably fair. Second, when individual parties analyse what a fair outcome should look like they are typically influenced by self-serving bias, and this makes it more difficult to reach agreements. Third, negotiating parties are likely to avoid looking at information that would force them to reflect over ethical issues. A potential policy implication is therefore to emphasise such information to the point where it is impossible for the negotiators to ignore it .Fourth, the possibility to use sanctions and punishments seems essential for the longer term effectiveness of a climate agreement (Olof Johanson et al., 2008). The Kyoto protocol and the forecasts for the next agreement currently lack this opportunity. This serious drawback was emphasised by Barrett (2003) Stiglitz (2006) suggested linking the climate and trade negotiations, leading to countries that fail to act responsibly in the climate area being punished by tolls. The potential success of the latter strategy is also consistent with the experimental evidence of Dreber et al. (2006), but there are of course large political obstacles that need to be solved before an effective sanctioning system can be agreed upon.

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Climate Change and Policy making

Climate change policymaking has primarily revolved around technological solutions or standard economic models (e.g., market and incentive-based mechanisms). As Shafir (2012) notes, “it is remarkable how small a role the attempt to understand human behaviour has played in policy circles”. This is surprising because psychological science has important insights to offer policymakers in managing climate change, especially because human behaviour and decision making are at the very core of the climate change problem (Gifford, 2011).

Experience Counts

Climate change can only be studied in statistical terms (e.g., by analyzing long-term changes in temperature and precipitation patterns), the issue is generally communicated and presented in relatively abstract, descriptive, and analytical formats. For example, research has consistently shown negative affect to be one of the strongest drivers of climate change risk

perceptions and policy support (Leiserowitz, 2006). In short, how we feel about a given situation often has a potent influence on our decisions about how to respond. The Policy implications are that the Statistical descriptions of the risk of climate change often fail to elicit action because statistical information, by itself, means very little to (most) people. Experience, on the other hand, can be a powerful teacher. Public policymakers should try to appeal to both the analytical and experiential processing system and expect that public support for action will require highlighting relevant personal experiences through recall, scenarios and powerful narratives and metaphors (Marx et al., 2007). In short, information about climate change risks needs to be translated into relatable and concrete personal experiences.

Group Norms are primary

The more people hear social referents (e.g., family and friends) talk about the risk of climate change, and the more climate change is viewed within one's social network as a risk that requires action, the more it amplifies an individual's own risk perception and intention to act (Renn, 2010) In short, social norms and contexts play an important role in human decision making. Field experiments have demonstrated that when people are informed about the average energy consumption of their neighbors, they tend to adjust their own energy use to conform to the group norm. When energy conservation norms are promoted and rewarded within a community, pro-environmental behavior change is more likely to be sustained.

Psychological Distance

Many people systematically judge the risks of climate change to be much more likely and more serious for other people and places than for themselves. People discount the risks of climate change in both temporal and spatial dimensions (i.e., it is more likely to happen in the future to other people in distant places). One way to reduce such psychological distancing is by highlighting the fact that climate change impacts are already happening. Public communication often emphasizes impersonal global impacts (e.g., sea level rise, average rising temperatures). Yet, policymakers should also emphasize local risks by highlighting the regional impacts of climate change for specific localities and communities .Research has shown that policy frames focusing on the regionally relevant impacts of climate change (and highlight local opportunities for reducing emissions) are often more effective than those that use distant global frames (e.g., Scannell & Gifford, 2013).

Risk seeking Behaviour

Nobody Likes Losing (but Everyone Likes Gaining) Much of the media, scientific, and policy discourse around climate change has consistently invoked the idea of "losses." For example, climate solutions are often framed as an immediate loss for society (e.g., higher taxes, reducing energy consumption). Yet, long-standing behavioural research has shown that people psychologically evaluate gains and losses in fundamentally different ways. For example, prospect theory (Kahneman & Tversky, 1979) demonstrates that people are more risk-seeking in loss domains than they are in gain domains. In particular, people are more reluctant to take action when losses are paired with uncertainty. In comparison with negative loss scenarios, positive gain frames have shown to increase pro-environmental attitudes and support for mitigation and adaptation policies.

Intrinsic behavioural needs

Psychologists generally distinguish between two separate sources of motivation: extrinsic and intrinsic. Whereas the former mainly relies on external incentives to produce

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motivation to change (e.g., monetary incentives), the latter draws on personal and internal processes. In contrast to the predominant assumption among many policymakers that people are inherently (or rationally) motivated by money ,a large body of psychological research has illustrated that this is not necessarily the case andmany people intrinsically care about the well-being of others and the environment. Accordingly, recent experiments have shown that appealing to people's intrinsic motivational needs can be a more effective and long-lasting driver of pro-environmental behaviour (Bolderdijk et al., 2015).

Policy implication is that Policies only consider short-term extrinsic incentives (e.g., promoting energy conservation to save money) are less likely to be successful because they are not tied to achieving intrinsically valued long-term environmental goals. Ideally, extrinsic policy incentives should be provided in tandem with intrinsic appeals. Because climate change is a long-term global environmental problem, viable adaptation and mitigation solutions will require leveraging stable long-term drivers of pro-environmental behavior and policy support (Sander Van der linden et al., 2015)

Conclusion

Behavior change is possible. History is full of examples of people behaviors in a way that helps to avoid long-term problems going to slow its effects and change the behaviors that have brought our planet to the brink, organizations working on environmental issues need to embrace lessons from behavioral economics and other social sciences, and embed them in the solutions we design and support. That is why it is inspiring to see more and more examples of governments and organizations using behavioral insights to address major challenges. The United Kingdom, for example, established the Behavioural Insights Team in 2010 as "the world's first government institution dedicated to the application of behavioral sciences" to achieve policy goals. Since then, the governments of Australia, Canada, Denmark, Singapore, and the United States, as well as the World Bank, have set up similar entities. The United Nations Development program Innovation Facility is meanwhile working to incorporate behavioral insights into policymaking and international development. Climate change has traditionally been framed as an analytical, temporally and spatially distant risk that represents an (uncertain) future loss for society. Yet, psychological research suggests that in order to improve public engagement with the issue, policymakers should emphasize climate change as an experiential, local and present risk; define and leverage relevant social group norms; highlight the tangible gains associated with immediate action; and last, but certainly not least, appeal to long-term motivators of pro-environmental behavior and decision making.

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Behavioural Economics

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BEHAVIOURAL ECONOMICS[1]

Dr. P. THIRUPATHY[2]

Introduction

Behavioural Economics attempts to understand the effect of individual psychological processes, including emotions, norms, and habits on individual decision-making in a variety of economic contexts. All economic behaviour involves decision-making by individuals, and traditional theories of economic behaviour assume that economic agents apply rational thought to each and every decision to achieve the maximization of personal benefit in the case of producers, the maximization of profits. The assumption of the rational individual is central to most micro-economic theory, and can be seen most clearly in marginal analysis. Marginal analysis suggests that economic agents carefully weigh-up the expected costs and benefits of alternative decisions based on accurate information, and select the option that maximizes their personal gain. In other words, individual economic agents are driven by self-interest, and if all agents are driven by self-interest based on all the information they have, each marginal decision will be rational.

This idea underpins the theory of how markets work to allocate scarce resources, and is the basis of Micro-Economics, yet the real world seems full of examples of where decision making does not seem rational, nor in the individual's self-interest. The cases of cigarette smoking, over-eating, and failing to save enough for retirement are just a few of the apparently irrational decisions routinely made by individuals across the developed world. Behavioural economics challenges the long held view in mainstream economics that individuals are 'unemotional' maximisers who make rational decisions – rational actors being identified as *homo economicus*. It also offers suggestions as to how individuals can be 'nudged' towards more effective decision-making.

Behavioural Economics is a rather recent field of mainstream economics; it predominantly deals with human behaviour's deviations from the model of the homo economicus or rational man. These deviations from rational calculation are introduced as "non-standard" (the standard being neoclassical economics) or reflections of "bias". Behavioural research explains human behaviour through the lens of social preferences, heuristics and norms, from which new behavioural models are constructed. Scientific findings are mainly taken from field or laboratory experiments. Furthermore, findings from neighbouring disciplines (psychology, social sciences, neuroscience, cognitive science etc.) are used and transferred to the economic discipline in order to improve the reliability and precision of explaining human behaviour in the economic realm.

Terminology, analysis and conception of the economy

In general, behavioural economics does not have strong theoretical or normative assumptions about how an economic system works or should work. Instead, prominent

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(neoclassical) economic theories are analysed and reviewed with respect to human behaviour, flagging deviations from the neoclassical model in concrete economic contexts, e.g. markets or public goods (Weber and Dawes 2010, 91). Hence, behavioural economics focuses on the observable behaviour of humans. Central concepts particularly refer to humans and their decisions. Thereby, humans are described as behaving in accordance with 'bounded rationality'.

Based on neoclassical decision theory, the behavioural economist Matthew Rabin (2002) developed three deviations from neoclassical economics' 'expected utility theory'; these have become vital differentiations in behavioural economics research. Rabin developed 'non-standard preferences', 'non-standard beliefs' and 'non-standard decision making' (the three respectively refer to one part of the mathematical function in the neoclassical expected utility theory). These are described in the following, with two examples presented for each case (for further examples see Della Vigna 2009):

Methodology

The methodological focus of behavioural Economics is on experiments. A distinction is made between laboratory and field experiments. In the experimental research design, only the measured behaviour is used as a basis for the analysis.

Vernon Smith laid the foundation of standardised economic experiments. His goal was to set up an experimental situation similar to a theoretical agent-principal situation, with a fixed set of choices in order to reveal the preferences of the participants. All other influencing factors are eliminated in order to compare model predictions with observed behaviour. He developed this approach to the Induced-Value Theory (Smith 1976). For this, he received the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel. Smith describes certain methodological conditions that have to hold to deliver unbiased results. For instance, different choices must have different rewards. This requires a rewarding medium with certain properties. For example, the participant must always prefer having more of it (monotonicity) and other factors must be rather irrelevant compared to the medium (dominance).

While laboratory experiments were dominant in the early days of behavioural economics, field experiments have become increasingly important (for an overview, see Della Vigna 2009). In addition to this, the application of neuro-scientific measurements has proliferated. Often, the goal of the methodology is to determine causal effects. The frequently used experimental design, with a randomized treatment and control group, is intended to simulate a counterfactual situation as closely as possible, in order to isolate the effect of a single measure or situation change. The methodological orientation focuses on the ideal of the natural sciences.

Ideology and Political Goals

The aim of behavioural economic research is to gain more knowledge about human decision making behaviour and also to better inform and politically shape social phenomena (such as investment in private pensions, health care, decisions on finance and education), mostly in accordance with the normative ideal of rational choice. This means that behavior which is considered not to be economically rational should be incrementally reduced. Nudges (such as default settings in pension systems, the arrangement of vegetables in a cafeteria or the presentation of information) are seen as an appropriate instruments (Thaler and Sunstein 2008) to lead humans to decide as if there was no bounded rationality, e.g. due to lack of self-control. It is assumed that humans themselves prefer these devices and these decisions in

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comparison to those driven by bounded rationality. Richard Thaler and Cass Sunstein (2008) understand such approaches as liberal paternalism. Liberal paternalism differs from a pure paternalism insofar that the opportunities are not restricted. Instead, the choice architecture is changed in favor of the preferred outcome. Concerning the debate within Philosophy of Economics see Robert Lepenies and Magdalena Malecka (2015).

Delineation: subschools, other economic theories, and other disciplines

It is not possible to consistently differentiate between different currents of behavioural economics. In economic textbooks (e.g. Beck 2014), behavioural economics research areas are often delineated by the following subjects.

Analysis of heuristics e.g. representativeness heuristic, availability heuristic, Discounting and time preferences, Altruism, fairness, reciprocity, Emotions, Happiness research.

Further distinctions, in particular with respect to the practical application of theoretical findings, can be made between different areas such as behavioural finance, behavioural macroeconomics, social policy and liberal paternalism (cf. Beck 2014, a historical outline is presented by Heukelom 2014).

Moreover, there have been attempts to classify particular aspects of research in relation to who it was that undertook the substantial body of that research (Tomer 2007): one example is the Satisficing Theory of Herbert Simon (1955), according to which individuals do not maximize their utility but are satisfied as soon as their expectations are met. A further example is George Akerlof's (2002) work to integrate the findings of behavioural economics into neoclassical macroeconomics. Another is Vernon Smith's significant influence on experimental economics, derived from his analysis of the functioning and design of markets (for the history cf. Svorenčík 2015).

Delineation from the Mainstream

One main difference between behavioural economics and the core theories of the mainstream is the way in which human behaviour is classified. While the neoclassical mainstream considers the conception of behaviour in terms of homo economicus as descriptively and normatively adequate, in behavioural economics, behaviour in terms of homo economicus is a normative guideline (see Kahneman 2003 and Thaler 2016a). The descriptive foundation is observable human behaviour.

Conclusion

We think you have little reason to invest a lot of time and effort in figuring out which economic policies will be the most favorable for you given that your vote counts for so little. For example: if you had to pay the 50 % of the social security tax now paid by your employer, you'd probably correctly figure you'd lose some money. But economists figure your salary would adjust upwards (or less downwards) just enough that it wouldn't make much difference after a year or so. Are you going to spend a lot of time figuring out whether that is right or wrong By way of contrast behavioral economists seem to think that you are pretty bad at your job and at your day-to-day living. For some reason they also seem to think you are pretty good at evaluating the effect of different tax policies – and so will elect the politicians that will get it right. Well some behavioral economists anyway.

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BEHAVIORAL ECONOMICS AND ITS RELEVANCE IN THE PRESENT CONTEXT[3]

B. RAMACHANDRAN[4]

INTRODUCTION

We cannot shape our environment, nor control events. But we can control our own behaviour and our own reaction to events.

Behavioral Economics (B.E.) increases the explanatory power of economics by providing it with more realistic psychological foundations. This paper is intended to provide an introduction to the approach and methods of behavioral economics, and to some of its major findings, applications, and promising new direction. Behavioral economics studies the effects of psychological, cognitive, emotional and social factors on the economic decisions of individuals and institutions and how those decisions vary from those by classical theory.

What is Behavioral Economics?

AT the core of behavioral economics is the conviction that increasing the realism of the psychological underpinnings of economic analysis will improve economics on its own terms-generating theoretical insights, making better predictions of field phenomena and suggesting – better policy.

The neoclassical approach is useful because it provides economists with a theoretical framework that can be applied to almost any form of economic and even non-economic behavior, and it makes refutable predictions.

Evaluating Behavioral Economics

Stigler (1965) says economic theories should be judged by three criteria: congruence with reality, generality, and tactability. Theories in behavioral economics should be judged this way too. We share the positivist view that the ultimate test of a theory is the accuracy of its predictions. But we also believe that, ceteris paribus, better predictions are likely to result from theories with more realistic assumptions.

The Methods of Behavioral Economics

The methods used in behavioral economics are the same as those in other areas of economics. At its inception, behavioral economics relied heavily on evidence generated by experiments. More recently, however, behavioral economists have moved beyond experimentation and embraced the full range of methods employed by economists.

It focus on psychological realism and economic applicability of research promoted by the behavioral economics perspective suggests the immense usefulness of both empirical research outside the laboratory and of a broader range of approaches to laboratory research.

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PROBABILITY JUDGMENT

Judging the likelihood events is central to economic life. The standard principles used in economics to model probability judgment in economics are concepts of statistical sampling, and Bayes' rule for updating probabilities in the face of new evidence. Bayes' rule is unlikely to be correct descriptively because it has several features that are cognitively unrealistic.

Cognitive psychologists have proposed heuristic mechanisms that will lead to judgments which sometimes violate either sampling methods (or) Bayes' rule see Kahneman & Frederick, 2002). For example, people may judge the probabilities of future events based on how easy those events are to imagine for or to retrieve from memory. This "availability heuristic" contributes to many specific further biases. One is "hindsight bias".

Because events which actually occurred are easier to imagine than counterfactual events that did not, people often overestimate the probability they previously attached to events which later happened. A more general bias is called the "Curse of knowledge" people who know a lot find it hard to imagine how little others know.

Another heuristic for making probability judgments is called "representativeness". Like most heuristics, - representativeness is an economical shortcut that delivers reasonable judgments with minimal cognitive effort in many cases, but sometimes goofs badly and is undisciplined by normative principles.

Many studies explore these heuristics and replicate their "biases" in applied domains (such as judgments of accounting auditors, consumers buying products, and students in classroom negotiations).

It is important to note that a "heuristic" is both good thing and a bad thing.

APPLICATIONS

Macroeconomics and Saving

Many concepts in macroeconomics probably have a underpinning that could be elucidated by research in psychology. For example, it is common to assume that prices and wages are rigid (in nominal terms) which has important implications for macroeconomic behavior.

An important model in macroeconomics is the life-cycle model of savings or permanent income hypothesis. Shefrin and Thaler (1992) present a "behavioral life cycle" theory of savings in which different sources of income are kept track of in different mental accounts. An important concept in Keynesian economics is "money-illusion"- the tendency to make decisions based on nominal quantities rather than converting those figures into 'real' terms by adjusting for inflation.

Finance

In finance, standard equilibrium models of asset pricing assume that investors only care about asset risks if they affect marginal utility of consumption, and they incorporate publicly available information to forecast stock returns as accurately as possible ("the efficient markets hypothesis"). While these hypotheses do make some accurate predictions – eg., the autocorrelation of price changes is close to zero-there are numerous anomalies. The anomalies have inspired the development of 'behavioral finance' theories exploring the hypothesis that some investors in assets have limited rationality.

Another anamoly is the magnitude of volume in the market. The so called 'Groucho Marx' theorem states that people should not want to trade with people who would want to trade with them, but the volume of stock market transactions is staggering.

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The rise of behavioral finance is particularly striking because, until, very recently, financial theory bet all its chips on the belief that investors are too rational to ignore observed historical patterns – the "efficient markets hypothesis".

IMPLICATIONS

Behavioral economics uses psychological experimentation to develop theories about human decision making and has identified a range of biases as a result of the way people think and feel.

Behavioral economics is trying to change the way economists think about people's perceptions of value and expressed preferences. According to B.E., people are not always self-interested, benefits maximizing, and costs minimizing individuals with stable preferences. Our thinking is subject to insufficient knowledge, feedback, and processing capability, which often involves uncertainty and is affected by the context in which we make decisions.

Most of our choices are not the result of careful deliberation. We are influenced by readily available information in memory, automatically generated affect, and salient information in the environment.

We also live in the moment, in that we tend to resist change, are poor predictors of future behavior, subject to distorted memory, and affected by psychological and emotional states.

Finally, we are social animals with social preferences, such as those expressed in trust, reciprocity, and fairness; we are susceptible to social norms and a need for self-consistency.

Comments by Critics

Critics have pointed out that behavioral economics is not a unified theory, but is instead collection of tools or ideas:

Economists like to point out the natural division of labour between scientific disciplines: Psychologists should stick to individual minds, and economists to behavior in games, markets, and economies;

All economics rests on some sort of implied psychology. The only question is whether the implicit psychology in economics is good psychology or bad psychology. We think it is simply unwise and inefficient, to do economics without paying some attention to good psychology;

Our hope is that behavioral models will gradually replace simplified models based on stricter rationality, as the behavioral models prove to be tractable and useful in explaining anomalies and making surprising predictions. Then strict rationality assumptions now considered indispensable in economics will be seen as useful special cases.

CONCLUSION

Behavioral Economics simply rekindles an interest in psychology that was put aside when economics was formalized in the latter part of neoclassical revolution. In fact, that many familiar economic distinctions do have a lot of behavioral content - they are implicitly behavioral and could surely benefit from more explicities to psychological ideas and data.

The specific features of the phenomena investigated by psychology are much more difficult to define. Understanding of these phenomena depends to a large extent on the world view of the people engaged in psychological studies.

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BEHAVIOURAL ECONOMICS AND ITS IMPLICATION[5]

B. LAKSHMI NARASU[6] & Dr. K. KALIYAMURTHY[7]

INTRODUCTION

Understanding of economic activity is very important to individual and to the society as whole. Without the understanding of economics, humans cannot derive the prosperity, value addition and the joy of individual and social living. The great poet saint Tiruvallur also suggests "porulillathavarkuivvulakamillai". The meaning is there is no meaningful life in this material world who does not engage in profitable pursuit of resources. Also in another couplet he goes on to profess the basic tenet of economics on how a government should use the resources. Those are resource creation, reaping the resource, preserve and to divide the preserved resources in an efficient manner is the way of government. The above is not only true in the sense of government or society, but also holds good for individual wellbeing and living. Therefore, we can see that economic activity is not a preserve of academic research, but also a practical guide for an individual in all his economic/life pursuits.

ECONOMIC THEORIES AND ITS SIGNIFICANCE IN SOCIETY

The pursuit of resources of individual in isolation does not warrant a study of resource allocation/division. But when people come together to form society, the individuals have to trade their individual resources in bargain for obtaining certain other resources which are not available to them. Also in society every individual is not engaged / equipped in the same work with the same amount of resources be it physical or material. Therefore, a society needs to balance the trade between what is on the offer and what is its effective price. These trade-offs for material goods, services, and items needs to be done in a fair manner, so that the social living is not disturbed to a large extent.

Economic theory as postulated in Thirukkural is the basic building brick of economics. All governments not only try to create, reap, preserve and divide the resources in equitable manner, but now-a-days try to maximise the economic aspect of resource allocation. Economics as a study has always fascinated humans and concepts were discussed and debated by philosophers like Plato and Aristotle. Religious treatises also discussed the merit/demerits of material pursuits. Pursuit of resource be it goods, trade, services or generation of merchandise is a necessity for human collective living. Without this pursuit of resources there will be no basic social living in society for all individuals.

The development of societies from predominantly agrarian to industry with the advent of metals changed the interactions of the society. The needs to mine, forge, transport and trade brought in more and more technological development and increased the interactions of societies in large scale. This large scale interaction brought with it imbalance and strife. To

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create an even platform and mitigate strife, economics as a study offers various theories in equitable distribution of resources.

Adam Smith conceived his market theory and the notion of "Invisible hands", followed by the works of David Ricardo and Thomas Malthus who further perfected this self-regulating model based on laws of supply and demand. Karl Marx and John Stuart Mill differed from this market views and these theories are collectively called as the classical approach to Economics.

John Maynard Keynes in his influential work "The general theory of employment, Interest and Money" offered views on how government intervention can boost economic activity and his work was the pioneer toward macro economic activity. His brand of economics of government spearheading the economic activity is called as the macro economic activity and the classical approach is called as the micro economic activity.

BEHAVIOURAL ECONOMICS

The advent of industrialization and urbanization led to a tremendous growth of industries and economic activity in manufacturing, transport and trade. This lead to inequalities in opportunities and trade between industrialised and non-industrialised societies. The subsequent wars and destruction lead to a better understanding of resource diversification and allocation, so that societies can interact in an equitable manner. Human resource and Humanity becoming more relevant, the need of the hour for economics is to focus on the human aspect like behaviours, psychology, cultural belief and group behaviour.

In this aspect, the works of Amos Tversky and Daniel Kahneman in their paper "Prospect Theory" showed that all economic decisions are not rational, but are influenced by the individual behaviour of risk and risk avoidance. Richard Thaler in his concept of "Mental accounting" attributes human economic behaviour not only to the value of the object, but also the perceived quality. He was the first to point out the failure of humans to consider opportunity costs and susceptibility of sunken cost fallacy.

CONCLUSION

Behavioural Economics integrates the economic decision making with the human nature and its psychology. Behavioural economics also targets every individual as a separate entity and also groups them together in a cohesive group. This type of collection brings people together to interact in a better manner and also enable them to work towards the common cause. Understanding the working of human mind and its impact on economic activity creates an unknown bond between people of various ethnic and cultural differences. The economic decision making process coupled with the understanding of human behavioural process will lead towards economic prosperity and higher attainment of human potential.

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BEHAVIOURAL ECONOMICS FOR BETTER BUSINESS[8]

C. ARJUNAN[9]

Introduction

"Behavioral economics uses variants of traditional economic assumptions (often with a psychological motivation) to explain and predict behavior, and to provide policy prescriptions. Traditional economic research assumes that people's economic decisions are based on the rule of maximizing utility". Behavioral economics differs from this traditional approach in two ways. First, behavioral economics neither assumes that people are good in utility maximization nor that it is their only goal. Rather, according to this approach, people have psychological biases such as loss aversion, they have limited cognitive resources, and they care about values such as fairness, all of which might undermine their utility maximization behavior. The second difference between traditional economic research and behavioral economics is that the former relies on theoretical models, whereas the latter relies on empirical tools to test hypotheses. In sum, behavioral economics explores what affects people's economic decisions and the consequences of those decisions for market prices, returns, and resource allocation.

Objectives of the Study

a) To generate and promote socially useful and financially viable business brands.
b) To cultivate an effective and sound relationship between the entrepreneur and customer.
c) To promote desire for the product in a healthy manner.

SIX ESSENTIAL BEHAVIORAL ECONOMICS PRINCIPLES FOR ANY BUSINESS

The Overconfidence Effect

While humans lack objectivity on many matters, **they may be most biased in assessing themselves**. Numerous studies have demonstrated a tendency for participants to overrate their own performance on a range of tasks this phenomenon is distinct from bragging: We don't exaggerate our abilities intentionally to impress. Rather, we earnestly fail to understand our own aptitude, erring on the side of self-regard. This ego-protective cognitive mechanism is called the "**Overconfidence Effect**." For businesses that ask employees to assess their own performance, this mental quirk can be painfully apparent.

Temporal Discounting

In traditional economics, cost-benefit calculations are the means consumers use to make decisions. But what if timing could radically alter these assessments? In a variety of contexts, humans respond **far more to immediate rewards** than those that require a wait. This "temporal discounting" contributes to our preference for immediate gratification in many forms, but the classic formulation involves monetary trade-offs.

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Loss Aversion

The fiery tennis star Jimmy Connors was infamously adamant about his approach to victory: **More than he loved to win, he hated to lose.** While most of us don't hate losing with the same fury (or profanity), Connors' line aptly describes how the human mind assesses the pain of a loss relative to the pleasure of a gain. The well-documented phenomenon of loss aversion refers to our tendency to place greater emphasis on the potential absence of something we already have than the acquisition of something we don't currently possess.

Anchoring and Framing

Anchoring and framing represent two other powerful deviations from rational calculation in the human mind. While traditional economics supposes our assessments of value and price are relatively static, countless studies demonstrate the power of context to inform our judgments. Anchoring refers to our habit of **relying too heavily on the first piece of information we receive**. In an ongoing string of interactions, this initial impression sets the tone for how subsequent data are interpreted. Good salespeople understand this phenomenon well.

Social Norms

We're all obliquely aware of social influence – none of us is completely immune to peer pressure or certain social imperatives, such as expectations about personal hygiene or politeness. But the urge to align ourselves with social norms is more powerful than most of us imagine. At a psychological level, we're instinctively inclined to conformity. And while social pressure can often be a pernicious force, it's also an **effective tool for motivating positive behaviors**.

The Peak-End Rule

We owe this final cognitive insight to Kahneman, who observed that when forming impressions, humans unconsciously rely on **the final and most emotional intense moments of an experience**. This principle, since repeatedly measured, has been termed the "Peak-End" rule.

CONCLUSION

Richard Thaler's contribution to Economics' is highly commendable because it opens new vistas to the world of business. By delving deep into human psyche and behavioral patterns he tries to find new avenues to do successful business as the demand and supply chain is largely dependent on Behavioral Economics rather than Traditional Economics. Behavioral Economics has been defined as "Human Truth in Action" and it has got six fundamental principles on which it operates. It envisages the best out of all human dealings. In short the method helps one to build the business on and intimate understanding of the customer. It aides in creating and promoting socially useful and financially viable brands if on enlightened researcher and an expert guide carve out the path one can venture in to good business however they intend to.

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ETHICS OF BEHAVIOURAL ECONOMICS[10]

Dr. C. SUNDARAPANDIAN[11]

Introduction

Traditional economic research assumes that people's economic decisions are based on the rule of maximizing utility. Behavioural economics differs from this traditional approach in two ways. First, Behavioural economics neither assumes that people are good in utility maximization nor that it is their only goal. Rather, according to this approach, people have psychological biases such as loss aversion, they have limited cognitive resources, and they care about values such as fairness, all of which might undermine their utility maximization behaviour. The second difference between traditional economic research and Behavioural economics is that the former relies on theoretical models, whereas the latter relies on empirical tools to test hypotheses. In sum, behavioural economics explores what affects people's economic decisions and the consequences of those decisions for market prices, returns, and resource allocation.

Behavioural Economics and Bioethics

It was not until the 1990s that the lessons learned from Behavioural economics slowly migrated into the field of ethics. Business ethicists were the early adopters, seeking better ways to understand the causes and remedies for prominent ethics scandals in large corporations like Enron. The scandals showed the inadequacy of traditional approaches to business ethics which, up until then, had largely focused on what people should do as well as which principles, virtues, and values should guide their decisions. Behavioural ethics, in contrast, adds understandings and descriptions of how decisions are actually made by people and why good people sometimes do bad things despite exposure to normative ethics training.

The precise definition for the field of behavioural ethics varies. Bazerman and Gino (2012) summarize the field as examining "the determinants of ethical and unethical behavior." Its concepts were translated into business ethics in large part because of a 1996 book edited by Messick and Tenbrunsel called Codes of Conduct: Behavioural Research into Business Ethics.

Bioethics has been even slower than business ethics to adopt Behavioural ethics concepts. It, like business ethics, has been dominated by debates over which normative theory is better for guiding decision-making and the moral duties that result from various ethics frameworks like utilitarianism, deontology, principlism, personalism, and virtue theory. Many bioethicists still regularly argue that ethical competency and moral decision-making can be mostly learned, cultivated, and developed over time. Bioethicists tend to ignore empirical evidence showing that many moral decisions are based far less on rational deliberations than on unconscious subliminal stimuli and situational forces. These forces and stimuli can affect both the way people make decisions, for example, whether they use a utilitarian or deontological framework, as well as their decision outcomes. For example, using the words "we" and "us"

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over "you" and "them" in conversations can unconsciously elicit higher levels of trust from people and alter decision outcomes. Similarly, visual representations, in contrast to verbal representations of information, can prompt people to make deontological versus utilitarianism moral judgments (Amit and Greene 2012). While many ethicists acknowledge blame worthiness is related to intentionality and activation of the will, they still underestimate the volume of stimuli that can decrease a person's rational deliberation and spark more emotional, uncontrollable, and automatic processing.

Even the ordering of expressed opinions or information objects can anchor and affect group and individual decision-making. For instance, a person can be manipulated into choosing healthy food over junk food from a cafeteria line, simply by manipulating where the food is placed in relation to the other. If the healthy food is placed at the beginning of the food options and the junk food at the end, the person will be more likely to unconsciously select the healthy option. Similar strategies can be implemented for nudging people to use the stairs over elevators for health benefits, to donate their organs and tissues, or to choose the best insurance plan.

Take some countries in Europe that use an opt-out system for organ and tissue donations. In contrast, the United States asks for people to opt in and volunteer to donate their organs. Some bioethicists argue the United States should switch to an opt-out model to increase the donor pool as people generally keep the status quo default option. This raises questions about the ethicality of intentionally manipulating people's choice architecture to elicit specific decision outcomes, even good outcomes (Thaler and Sunstein 2009). Thaler and Sunstein call this type of nudging a form of libertarian paternalism. Situational forces do not just affect the decision-making of individuals; they also affect how we judge the decisions of others. People tend to blame others less if an intermediary carries out a harmful action, rather than if the harmful outcome is done directly (Paharia et al. 2009). For example, imagine a large drug company (called Company X) has two cancer drugs used by patients who really need them. The prices for both drugs go up. But, in one instance, the drug price was raised directly by Company X, whereas in the second case the drug was sold to Company Y and Company Y raised the price (which Company X knew was going to happen). People are generally more lenient on Company X in the second case, where Company Y raised the price, despite equal outcomes in both situations and the fact that Company X sold the drug knowing the price would increase. This case hints that if a pharmaceutical company aims to increase its profits while protecting its reputation, it should license its drug and let someone else raise the price, rather than raise the price itself and make the same profit.

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Conclusion

Traditional approaches to economics assume that people's economic decisions are based on the rule of maximizing utility. In contrast, behavioural ethics neither assumes people are good at utility maximization nor that it is their only goal. Using empirical tools, Behavioural ethics shows people have psychological biases (such as loss aversion), limited cognitive resources, and care about other values (such as fairness), which can weaken their utility maximization behaviour. These lessons have slowly found their way into the business ethics literature. However, bioethics scholars have been slower to adopt Behavioural ethics concepts. Further study is needed on the intersections of bioethics and Behavioural ethics to better understand the implications and impact each field can have on the other.

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SAVING BEHAVIOUR OF COLLEGE STUDENTS IN CHENNAI CITY – A MICRO ANALYSIS[12]

M. MUTHUVIGNESH KUMAR[13] & Dr. A. MARIYAPPAN[14]

Introduction

With the advent of advancement and modern technologies, the spending pattern has undergone a drastic change. The introduction of digital money, attracted towards online shopping, has contributed to the diverse spending patterns and lower savings among the younger generation as well as with people too. Due to lack in financial literacy, the student does not understand the importance of savings in the short run. India is a young country with a large proportion of its population below 35 years of age. According to the UN, India has the world's largest young population of 356 million aged between 10-24 years of age. Being the heavy populated and biggest young generation, the savings aspect of thinking among the people has lesser impact of future advancement.

The study emphasis on the savings behavior of the college students whom are the main focus of analyzing the declining trend in savings of them with their more spending avenues in the market.

Objectives of the study

The present study has framed the following objectives.

1. To examine the savings pattern and kind of the college students in the Chennai city
2. To study the major driven factor of spending among the college students in the Chennai city.

Literature Review

P. Jeevitha & R. Kanya Priya (2019) analyzed in their study entitled *'A Study on Saving and Spending Habits of College Students with reference to Coimbatore City'* found that most of their respondents saved less than they spend but their spending avenues are different in nature. They also found that there is no significant relationship between spending and purpose of savings.

S. Saravanan & V. Devakinandini (2014) analyzed in their study entitled *'A Study on perception of college students about spending of pocket money with reference to students studying in arts& science colleges in Coimbatore'* that the pocket money plays a vital role which has both edges as not sufficient and surplus. There are significant among the age and opinion of the necessity of pocket money among the students.

Mebin John Mathews (2017) has analyzed on *'An Analysis on spending and saving pattern of college students in Idukki district'* that the students found with parents burden for spending while learning and majority of the students are not having any kind of savings habit.

These were all the past studies conducted among the college students with a special intention with savings habit. Through which, the study has explored.

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Methodology of the study

This study relies exclusively on the primary data among students studying in few colleges in Chennai City. The data has been collected using questionnaire in colleges. Due to paucity of time, it has proposed to select 200 respondents limited only to few arts and science college for the study. For this purpose, the researcher used random sampling technique to fulfill the study objective. The current study is both explorative and descriptive in nature.

Limitations

1. This study is confined to the viewpoint of (200 respondents) college students of Chennai city. The results of the study may not be applicable to other places of the country.
2. In depth analysis could not be carried out because of shorter period of time.

In all, there were 94 males and 106 females in this study. Based on an analysis of their father's occupation, it seemed that 47 (23.5%) were lower income earners, 60 (30%) were higher income earners and middle income earners who was the most occupied as 93 (46.5%). The number of respondents from undergraduate level were 143 (71.5%) and those from postgraduate level were 57 (28.5%) only.

Data Analysis

In the study, the savings intensity among the college students are high with 110 (55%) of respondents where they have the purpose to save for future without any diversion of spending activities. In order to plan for their higher studies, the respondents have an inducement in saving and spend for future education is more among the college students. Many of the college students have not working in any part-time jobs too in this study. But, the saving behavior is existed among large level with a notion towards future spending. Interestingly, 50% of the respondents have the monthly saving habit with different modes of saving avenues. Only 13% of the respondents says they were excellent in their financial status where majority of them say 36% thought they were in Neutral in financial status in the rating of their Good Financial Status Scale.

Among the attitude towards the educational loan repayment, the respondents were good enough to worry about their loan repay through their savings. In the payment of their course fees, the majority of the respondents say 80% have chosen by parents where the chance of personal savings playing an additional level also. The savings amount of the respondents varies from 0 to 8000 which also indicates the higher the level of earning, the savings level also higher and lower the earnings, the moderate the savings among the student community. The fact has been drawn from the study conducted is that the younger age group spends higher and lavishly as compared with growing elder group has spends lesser and tends to save for their future without any lavishness in spending across major consumption driven factors.

The study has analyzed the spending per day among the respondents as most of them has spend below 150 to meet their daily expenses whereas only few has spending above 300 from their pocket. Being a behavioural study, the study has checked a confidence level for their expected salary as many of them have chosen confident rather rating very confident in the study. But very few of them have rated not at all confident for their expected salary after graduation which shows their biased situation on the dependency of parents in learning days

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irrespective of expectation amount. In the rating of borrowing level also checked among the attitude of the respondents as 45.5% has disagreed for borrowing money is a good for life.

In the major expenses category, the respondents are ranked as spending on travelling & transport as first and seconded by Spending on education purposes, entertainments, lifestyle and least spending categories are spending on gadgets, games and drugs. The college students community has a major savings on personal hundies and savings bank account itself whereas there are less students are using the channel of Recurring Deposit and savings schemes available for the savings purpose.

Suggestions

Students should cultivate their habit of savings in order to meet out the future needs form their pocket. They should encouraged to invest their savings amount in productive channels like bank, post office. The younger generation students should consult their parents for budgeting their expenses and advised to less spending habit too. They should have been motivated to save a lot and owe pocket expenses without any dependency on parents/ guardians which needed like other countries.

Conclusion

College students are money-spending machines. Savings should be a longer time for the recipient of greater benefits. The study has addressed the saving habits of the college students. There is no doubt that the students are economically active. The respondents held parents responsible for developing saving habits among children. The study has shown that savings can be increased through financial literacy. The awareness should also play a vital role in investing in saving avenues where leads to be a recipient of enough interest rates even in shorter period of time. Among the younger people, the saving habit and saving amount was very low as the economic theories proves earlier. While, the middle age people would have a tendency to save for future is more with greater level of awareness and caution on future spending. On markings, Spending less than the earnings and saving more for the future is a golden path of controlling over the personal budget.

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CONSUMER'S BEHAVIOURAL CHANGES TOWARDS BAN ON PLASTIC BAG IN TAMIL NADU: AN EMPIRICAL STUDY IN SANTHOME, CHENNAI[15]

Dr. Sr. STELLA MARY Fmm[16]

INTRODUCTION

The usage of plastic bags has become a part of life style in the 20th century especially in Chennai. People go empty handed to the shops and return with loads of plastic bags. The concerns of Plastic bags towards the environment are too huge to ignore. It causes environmental hazards as most plastic bags are not bio-degradable. Usage of plastic bag for hot edible items not only causes such inconveniences but it may also cause health hazards of the people. The plastic bags left as a garbage would severely affect the wild life. Stray dogs and cows would eat them along with the food left in them. Marine creatures would mistake them to be jelly fish and consume them. The garbage of plastic bags is the main culprit for blocking the drainage systems in Chennai city. They would just gather at the sewage blocking the flow of water. Plastics are considered as biggest pollutants in Chennai city. According to Atul Thakur, the City of Chennai generates 429 tonnes plastic waste every day. It is reported that Chennai is the second largest plastic producers among the metropolitan cities (August 17, 2019, in Times of India). It is stated by the United Nations Environment programme, as of July 2019, 127 of the 192 countries reviewed have adopted some form of legislation to regulate plastic bags. Further the report states that there are 27 countries have legally imposed taxes on single use plastics or on specific products. Yet the production on plastic goes on every day affecting the life of people, animals, fishes and the environment. This calls for a complete ban arise from the primary concerns associated with plastic shopping bags. The first concern is that plastics create a waste stream that is extremely difficult to eliminate or manage. Hence forth, globally, individuals and groups continue to advocate for the banning of plastics, proposing that they be replaced with reusable biodegradable plastics. However, they are also very cheap, useful and convenient and a complete ban will have a significant negative impact on consumers. The environmental consciousness of the public and consumer has been increasing due to emergence of campaigns through media and public education during the century. Therefore, Tamil Nadu has re-enforced a ban on the use of plastic non-biodegradable carry bags, single-use cups, plates and straws, in January 1, 2019. The Central Pollution Control Board estimates that Tamil Nadu generates plastic waste approximately 79,115 tonnes per annum in the cities like Chennai and Coimbatore. The proposed plastic ban may not be termed novel but 'noble' considering other states have experimented with partial and complete restrictions in one form or the other.

OBJECTIVES OF THE STUDY

- To analyse the factors that influence the behavioural changes towards ban on plastic in Santhome coastal area Chennai.

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- To analyse the consumers' (Respondents) reaction on plastic ban in Tamil Nadu.
- To provide suitable suggestion to reduce use of plastic bags in Santhome area.

METHODOLOGY OF THE STUDY

This study adopts primary and secondary data to collect information on consumers' attitude towards ban on plastic bag in coastal area of Santhome. This present has advocated random sampling method to select 100 respondents for the survey. The selected respondents' age group is between 15 to 65 specially women. The study analyses the behavioural changes of the respondents on plastics ban as well as the environmental impact after the plastics ban enactment by the government. The questionnaire will depict the percentage and pictorial presentation of plastic use by consumer and the seller after the enactment of ban of plastic.

DATA ANALYSIS AND INTERPRETATION

Based on the objectives the primary data have been analysed and interpreted. Information are collected from 100 respondents in coastal area, Santhome.

Table 1: Awareness about dangers of plastic to an environment

	Respondents	**Percentage**
YES	50	50%
NO	40	40%
MAYBE	10	10%
Total	**100**	**100%**

Source – Primary data

Only 50 per cent of respondents are aware about the dangers of plastic use to an environment, which puts a further question into awareness programme and education level too. The awareness will create a greater impact in usages of plastics. As consumer are the one who consuming plastics, ultimately their own heritance will face environmental issues in the future.

Table 2: Consumption of plastic after the ban

	Respondents	**Percentage**
YES	80	80%
NO	20	20%
Total	**100**	**100%**

Source – Primary data

Nearly 80 per cent of respondents said that rate of consumption of plastic after the act of plastic ban has dropped. The reduction of plastic bag consumption is a good sign. This has actually made a great change in consumption pattern of plastic bag. Many consumers and business sector started to produce re-useable or paper bags.

Table 3: Bags used after ban

	Respondents	**Percentage**
Plastic bag	40	40%
Paper/cloth bag	50	50%
Reusable bag	10	10%
Total	**100**	**100%**

Source – Primary data

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From the above table, we can say that the consumption pattern of a consumer, as well as the business sector, of plastic bag has been reduced by 50 per cent after ban. This is great sign for an environment backdrop, but in reality it doesn't work that way. 40 per cent of respondents wish that grocery store should charge between Rs.1 to Rs.5 for each plastic bag they sell. But this will not work, as it becomes cheap and people will tend to buy. They are willingly or not knowingly people are still consuming some plastic in one-way or other way. The packages are done mostly by plastic only; just because of ban of plastic bag alone will not create any great impact in the environment.

Table 4: Consumer Attitudes to the Plastic Bag Ban

Age wise respondents	Always	Most of the time	Sometimes	Never	Total respondents
Under 25	50	0	40	10	**100**
25-30	40	20	28	12	**100**
31-40	50	0	35	15	**100**
41-50	55	0	35	10	**100**
51 -60	60	0	28	12	**100**
61 to 70	0	70	30	0	**100**
71 and over	0	65	35	0	**100**

Source – Primary data

From the table we can draw inferences that age between 25 to 60 agree that they do not always want to use plastics because of the negative impact on health and environment, whereas above 61 to 71 age group say most of the time they do not want to use the plastic in their houses. All age groups are happy with plastic bag ban in India. Nearly 40 per cent of the respondents are sometimes likely to utilise plastic in their daily activities.

The comparison between "Behaviour of Not rejecting plastic bags" group versus "Behaviour of Rejecting plastic bags".

Table 5: Comparison between "Behaviour of Not rejecting plastic bags" versus "Behaviour of Rejecting plastic bags

Number of Respondent	Behavior of Not rejecting plastic bags	Behavior of rejecting plastic bags	Total respondents
Fish vendors	80	20	**100**
Small traders	65	35	**100**
Domestic workers	70	30	**100**
Big Business people	15	85	**100**
Coolie worker	65	35	**100**
Super market	70	30	**100**

Source: Primary Data

The first group respondents are most of the times or often use plastic bags and rarely to reject it. The second group respondents who are very often or always reject plastic bags because of the negative impact on human health, animals, creatures and very bad environmental

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effect. Action and reaction towards plastic bag ban in Santhome area, Tamil Nadu were high because most of the respondents find that it is convenience for them to carry items when buying at supermarket. None of them carry the own bags to supermarket stores to receive the discount because they will feel distinctive with other people because many people ask for plastic bags as a norm. Majority of the respondents admit that charging bag fee can influence to reject plastic consumption but they feel that it will solve problem only short term.

FINDINGS

- 80 per cent of the respondents support to the act of ban of plastic bags in state.
- 50 per cent of people agreed that society has enough information about the dangers of plastic bags.
- Nearly 80 per cent of people said that rate of consumption of plastic bags has been frequently reduced after the ban.
- More than 40 per cent of people wishes that grocery stores should charge between Rs1 to 5 for each plastic bag they sell.
- Nearly 50 per cent of respondents use paper bags, 40 per cent of respondents use plastic bags, and remaining 10 per cent use reusable bags. Here we observe that plastic use reduced more than 50 per cent.
- Action and reaction towards plastic bag ban in Santhome area, Tamil Nadu were high (80%) because most of the respondents find that it is convenience for them to carry items when buying at supermarket.

SUGGESTIONS

- Plastic grocery bags should not be free. The cost of using plastic bags results in higher prices at the checkout counter. Retailers can save on cost if consumers bring their own reusable bags. So it is highly advisable to the government to ban plastic in all the state in the country. A full enforcement of law and penalty for the usages of plastic product by the consumer, as well as the producer. The proper enactment can lead to many changes.
- Plastic bags are made from non-renewable sources, which require petroleum it uses energy and pollute the environment. The next best alternative is using reusable bags and biodegradable bags. There is a wide range of reusable shopping bags available from retailers which are not harmful to environment.

CONCLUSION

Despite the adoption of advanced waste disposal and recycling systems, plastic continues to enter the environment, for example through littering, the illegal dumping of waste, and the use of waste-based fertilisers in farming. Plastic and micro-plastic waste is accumulating in soils and waterbodies around the world. Funded by the Federal Ministry of Education and Research (BMBF), the research consortium "Development of New Plastics for a Clean Environment by Determining Relevant Entry Pathways" (ENSURE) seeks to develop innovative plastics with environmentally optimised degradation characteristics and which degrade rapidly with minimal environmental impact while maintaining current standards of stability. The government’s role in the plastic ban act is great to the well extent. Thereby, the change in consumption pattern of plastic can be an impact only after a strong enforcement from the government, especially in Santhome, Chennai the study area for research.

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CAN BEHAVIORAL ECONOMICS AND CONSUMER PSYCHOLOGY IMPROVE MARKET RESEARCH?[17]

Dr. N. SAVITHA[18] & P. GOKULA KRISHNAN[19]

Introduction

Behavioral economics relies on solving problems through psychological insights based on empirical evidence. It incorporates human psychology to analyze culpable involving an economic outcome such as the consumer buying a product (Camerer, C.F. (2003). It is a staple discipline in human behavior and intensely encourages the incorporation of theoretical, "empirical and applied research that furthers our understanding of real-world economic choices and behavior change" (1). Behavioral economics represents a melding of the disciplines of psychology and economics, rather than a brand new synthesis because fresh thinking about economics could be derived from psychological insights. According to Thaler "unlike the field of classical economics in which decision-making is entirely based on cold-headed logic" and behavioral economics makes allowance for irrational behavior and attempts to understand the origin of irrational choice. Psychological aspects, if applied to individual situations, more broadly may encompass action not only in society and also in trends of financial markets. Thaler, R. H. (1992) "Behaviorally based consumer policy also means an empirical, reflective, sometimes experimental, and always iterative policy approach, including trials and pilot tests of remedies developed cooperatively with suppliers and intermediaries and consumer organizations then evaluating outcomes and feeding the results back into the policy process to improve the policies tested" (2). The present study mainly focuses on the fundamental theories of behavioral economics and its applications in market research.

Prospect Theory

Kahneman and Tversky (1979) stated that "economic rationality influenced other fields in the social sciences from the inside-out, but through Becker and the Chicago school, psychologists found an outside-in reality check to the current economic thinking". Notably, "Amos Tversky and Daniel Kahneman published several papers that appeared to undermine ideas about human nature held by mainstream economics" as a separate discipline. "They are perhaps best known for the development of prospect theory which states that decisions are not always optimal" (5).

In 1979, prospect theory came into existence, which was further developed by the economist Amos in 1992. Amos added expected utility analysis theory in his research and noted that people's decisions are accurate based on their psychological factors. Amos said that "prospect theory assumes that losses and gains are valued differently and thus individuals

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make decisions based on perceived gains instead of perceived losses" respectively. "Prospect theory belongs to the behavioral economics subgroup describing how individuals make a choice between probabilistic alternatives where risk is involved and the probability of different outcomes is unknown" and uncertain (5).

Behavioral Economics in Market Research

Standard economic theory assumes human psychological conditions helps humans to know all information, but in behavioral theory, knowing comes from the mistakes made all over time. If we "recognize these imperfections in the real world and we can figure out where people do not behave correctly and understand how we can adjust and even manipulate people's behavior" as compactable.

Azar, O.H. (2003), "a traditionally trained economist would have us believe that the financial world is driven toward an equilibrium based on logic and rational forces" in view of previous findings. These contexts and theories are "instrumental in helping us understand the mechanisms of markets" but "however the real world is not as logical as economists would lead us to believe" with irrespective of their behaviour. People "make decisions often without full knowledge of alternative products and prices and most probably with a certain amount of bias" as psychological aspects (7). Gordon R. Foxall (2017), "Behavioral economics explores the implications of the limits of rationality". The goal is to make economic theories more plausible while maintaining formal power and accurate prediction in the field of marketing. Under "the generalized preference structures decision-makers care about both the final outcomes as well as changes in outcomes concerning a reference point and they are averse to losses" even to the high income consumers. Most subjective judgments of sensations, however, are sensitive to points of reference. This reference dependence implies that decision-makers may care about changes in outcomes as well as the outcomes themselves (8).

Peter E. Ear, (2018), "Marketers know that delaying payment is a technique that can drastically increase the consumer's willingness to purchase" respectively. The main reason why this technique works is delaying payments makes the value of money less "costly." Behavioral economics endeavors to study the effects "psychological factors have on the economic decision making process of individuals" in its own perspective. The importance of understanding behavioral economics for marketers is immeasurable as it allows for a better understanding of the human mind (2).

Conclusion

The discussion in the paper reveals that economic behavior had a direct relation to market research. This relation is not only significant to an individual psychological assumption but has extended to appropriate institutional behavior and society as a whole. The marketing curriculum changed drastically in the last twenty years due to a change in consumers' psychology. Thaler's nudge theory helped the market to implement a market strategy and internalize the business. Nevertheless, rational choice theory sounds different from Thaler's views. It states that people's choices are their own and does not impact marketing since only a few people have market information. Behavioral economists believe there is hope from the traditional economic theory, which predicts the future behavior of the consumer. Experiments on the path for gaining information in marketing observed that consumer psychology tends to influence market research in different ways (9).

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'NUDGE' IS THE WAY FOREWARD FOR PUBLIC POLICIES[20]

ALLWIN JOSE ABRAHAM[21] & DARSHANAM JUDE LAMA[22]

INTRODUCTION

The concept of Nudge Economics is all about a subtle policy shift that will motivate people to take up decisions that are in their self-interest. It allows people to design choices that motivate people to make up positive, helpful decisions, especially for the wider society.

Traditional policies are direct judgmental legislation enforced. Policymakers across are becoming more aware of the fact that taxation and penalising is not that best way to influence the decision making of masses. They are becoming more conscious of subtle non-judgmental open-ended offers. Barack Obama had Cass Sunstein as an adviser to adopt behavioural economics-based policies. UK government instilled a "Behavioural Insights Team" to adopt policies. Administrators of Denmark, Netherlands, Australia and Canada are showing similar interest in nudge policies.

We could sense nudge diplomacy in the policies of the present central government under Prime Minister Narendra Modi. It is evident in his foreign policies too. With a close watch, one can say, his "neighbourhood first" policies, "unite all world forces to end terrorism" statement on abrogation of Article 370 and "no first use" policy on nuclear weapons all are inspired by the works of nudge economics. Social and economic policies, including Beti Bachao, Beti Padhao (BBBP), Demonetisation, Swachh Bharat Campaign (Clean India) and "Give it up" LPG subsidy campaign have largely nudged people to a behavioural change. Though the real success of Demonetisation is arguable other policies were successful in nudging people to a behavioural change while preserving their liberty to choose.

Objective

To analyse the effectiveness of nudge in social and economic policies in the light of Beti Bachao, Beti Padhao (BBBP), Swachh Bharat Campaign (Clean India) and "Give it up" LPG subsidy campaign.

Beti Bachao, Beti Padhao (BBBP)

Beti Bachao, Beti Padhao, is a program intended to increase the efficiency of welfare services for girls. The declining rate of Child Sex Ratio is an alarming indicator for women disempowerment in the country. It throws light on the social construct of pre-birth discrimination on girl children through sex-selective abortions. BBBP focuses on 100 selected districts that are low in Child Sex Ratio across all states and Union Territories. BBBP lays focus on saving girl child and encouraging their parents to educate them. It promotes gender equality and girl child protection.

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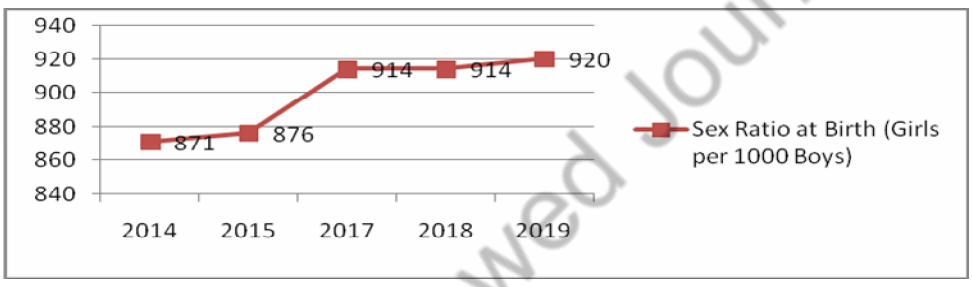
Nudges of Beti Bachao, Beti Padhao

The social media promotion #Selfie With Daughter gained international attention and was a massive success in calling for a positive attitude shift towards the girl child. To decrease the financial burden on the girl child's education or marriage, a savings scheme Sukanya Samriddhi Account has been introduced. It also nudges the parents to save with no tax deduction and a reasonable interest rate (8.5%). There has been no school fee for a girl child to nudge them to go to school. Some private schools also providing discounts to the girl child. This is the technique of loss-aversion making parents not to feel an economic loss on the education of a girl child.

Other nudges include; women been given preference under Mudra Loan Scheme, availing subsidy under "Housing for all" Scheme requires a female member in the family and women are given free LPG connections under Ujjwala Yojana. Even the issues of ration cards are in the name of a woman member in the family. It will eventually use the conforming-following the herd technique making to believe the importance of girl child.

Haryana's Success Story



Source: Civil Registration System Data, Women and Child Development Department, Haryana
Note: Data for 2019 is for December 2018 to August 2019

However, national figures do not seem to be promising. According to health department officials, couples prefer sons to daughters. Beti Bachao, Beti Padhao is not a single nudge policy; there should be a constant nudge to take over this behavioural change of discriminating girl child.

Swachh Bharat Campaign (Clean India)

Swachh Bharat Campaign is devoted to change deep social and cultural habits in India related to toilets and cleanliness. India has the topmost open defecation rates in the globe, a social menace that comes with severe public health problems. The primary intention of the program was to make India open defecation-free by October 2, 2019, through the construction of 12 crore toilets.

Nudges of Swachh Bharat Campaign (Clean India)

Prime Minister Narendra Modi launched the scheme with a television flourish, personally sweeping rubbish near Delhi neighbourhood. He also emphasised the need for separate toilets in schools on the Independence day speech, 'toilets' a word Indians are hesitant to use in an august gathering. In his first "Mann Ki Baat" radio broadcast, he insisted people to "pledge to remove dirt from our lives." He directed bureaucrats to join the campaign by cleaning their workplaces. Celebrities joining the campaign also helped with the broader reach of the campaign.

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Swachh Bharat Campaign uses 'Prospect Theory' in Behavioural Science. Prospects theory professes that people are loss averse; that is, people will avoid perceived losses than perceived benefits. By drawing particular attention to the ill effects of poor sanitation and the number of deaths it causes, the government developed a well-communicating strategy that will impact behavioural changes in society.

Insight on 'present-bias' is also used effectively. Generally, people are less willing to let go of what they have for ascertaining future gains. 'Swachhata Divas' and 'Swachhata Pakhwadas' leveraged a "Fresh Start," persuading people to overcome their behavioural habit.

'Social Proofing' is another behavioural concept put into action. 'Swachh Sarvekshan,' an annual survey conducted, will bring competitive spirits among local bodies. It will also foster social accountability within the local authorities.

Nearly seven lakh 'Swachhagrahis' reaching out to villagers with 'plan making' and 'follow up' to motivate villagers to stop open defecation and build toilets is also a unique approach. Wearing 'Swachhata Badges' and participating in 'Swachhata Pledge' is the first-foot technique, a behavioural tool used to make people agree to a large request by making them agree to an acceptable request first.

The Modi government has constructed 9.2 crore toilets. The government also declared 5.5 lakh villages and 28 out of 36 states and Union territories open-defecation free. However, other studies indicate that an increase in toilets has not influenced many to stop open-defecation.

"Give it up" LPG subsidy campaign

"Give it up" campaign aimed at encouraging LPG users who can pay the market price of LPG cylinders, availing the subsidy to give it up voluntarily. For every subsidy given up, the government promised to offer an LPG connection to a rural household free of cost. Under Pradhan Mantri Ujjwala Yojana scheme government targets to provide 80 million connections in 8 years.

Nudges of "Give it up" LPG subsidy campaign

Prime Minister first used the behavioural technique of 'priming', a manner in which people are softened or hardened before an option is introduced. Through well-structured communication government primed the rich, making them understand the ill-effects of firewood and other fossils on the health of the users and the environment. The concept of 'Present Biases' also nudged towards giving up. Whenever there is a conflict between 'want' and 'should' option, people usually prefer 'want' immediately. Instead of making people give it up quickly, the government extracted a commitment in people to give it up on a future date.

The policy being a one-time nudge policy was a huge success. In April 2016, ten million people gave up their subsidy willingly.

Conclusion

Applying behavioural science to public policies will make the people buy in the policy with meeting the intended objectives. Conservation of energy, promoting cashless transactions, waste management and many other policies can be more productive through systematic behavioural techniques. The government should think of setting up a 'Behavioural Insight Team' to guide the ministries with different policy implementations.

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BEHAVIORAL ECONOMICS OF HIGHER EDUCATION: COGNITIVE SKILLS, PERSONALITY AND ECONOMIC PREFERENCES[23]

Dr. B. YASODHA JAGADEESWARI[24]

INTRODUCTION

"The roots of education are bitter, but the fruit is sweet"

~ Aristotle (384 BC-322 BC)

Education, in its broadest sense, may be defined as a process designed to inculcate the knowledge, skills and attitudes necessary to enable individuals to cope effectively with their environment. Higher education has a longstanding engagement with the national economy. A consensus has emerged that increasing the number of graduates from quality college education programs is critical. India's future economic competitiveness and individuals' economic opportunity depends on it. By now research recognizes cognitive skills (as measured by achievement tests) and soft skills (personality traits not adequately measured by achievement tests) as equally important drivers of later economic outcomes, and skills are seen as multi-dimensional rather than one-dimensional. Explicitly accounting for soft skills often implies departing from the standard economic model by integrating concepts studied in behavioral and experimental economics, such as self-control, willingness to compete, intrinsic motivation, and self-confidence. The focus has now shifted to improving this hard-to-move outcome – figuring out what is cost-effective and designing college policies and programs that are effective. Behavioral economics, and more specifically the emerging practice of behavioral design, has much to contribute to these efforts. Behavioral economics in higher education is grounded in the reality that many objectives and challenges leaders of institutions face are brand-related, including student recruiting and admissions, faculty engagement, community relations, staff culture, and overall student experience. The behaviors and actions of an institution's people significantly influence its reputational capital. Human interactions throughout an academic community either add or detract from the overall student experience as well as the quality education the institution provides, thus impacting the reputational capital that transcends externally to the general market place. Most institutions desire to continually improve the quality of education they are providing to their students. The quality of curricula throughout an institution plays a key role in determining the level of education the students receive; however, so do the interactions students have with faculty inside and outside of the classroom. The student experience is not limited to interactions with faculty, but all interactions students encounter throughout the institution's community.

Overall, the area of education is a fruitful environment in which researchers and policy makers should consider possible deviations from the traditional human capital investment model and how behavioural economics might explain these deviations. This paper synthesizes the recent and growing literature on the behavioral economics of education and, in doing so, encourages others to recognize opportunities for further research. We argue that

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brain development over time and environmental context play an important role in determining educational outcomes and that education itself may affect brain development and, therefore, individuals' preferences. We discuss how policies that make learning opportunities easier, continually remind students of long-term goals, teach strategies to develop self-control, and encourage youth to take pride in their own skill development are promising approaches for helping foster academic achievement.

OBJECTIVES OF THE STUDY

This paper analyses the emerging literature on the behavioral economics of education and how Behavioral economics attempts to integrate insights from psychology, neuroscience, and sociology in order to better predict individual outcomes and develop more effective policy. We measure demographics, personality, cognitive skills, and economic preferences.

RESEARCH METHODOLOGY

The present study is exploratory in nature. Keeping in view the nature of research, the methodology framed out here is essentially based upon the secondary information. The data required for the study is mainly collected from secondary source such as newspapers, magazines, journals, annual reports, periodicals, govt. documents, regulatory publications and related planning documents, websites etc. Overall, this exploratory research explores the behavioral economics of higher education: cognitive skills, personality and economic preferences. This research aims to develop an understanding of the behavioral economics of higher education. By employing a descriptive analytics approach through a qualitative research and procedures have been applied to explore pertinent information for this study.

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MEASURES OF COGNITIVE SKILLS

Cognitive functioning is a term referring to a human's ability to process thoughts that should not deplete on a large scale in healthy individuals. It is defined as "the ability of an individual to perform the various mental activities most closely associated with learning and problem solving. Not all with the condition will experience this side effect, and most will retain their general intellect and the ability.

(a) Measures of knowledge acquisition, organization, and structure;
(b) Measures of depth of problem representation;
(c) Measures of mental models;
(d) Measures of meta cognitive skills;
(e) Measures of the automaticity of performance; and
(f) Measures of efficiency of procedures.

MEASURES OF ECONOMIC PREFERENCES

In economics and other social sciences, preference is the order that a person (an agent) gives to alternatives based on their relative utility, a process which results in an optimal "choice" (whether real or theoretical). Instead of the prices of goods, personal income, or availability of goods, the character of the preferences is determined purely by a person's tastes. However, persons are still expected to act in their best (that is, rational) interest. Using the scientific method, social scientists try to model how people make practical decisions in order to test predictions about human behavior. Although economists are usually not interested in what causes a person to have certain preferences, they are interested in the theory of choice because it gives a background to empirical demand analysis.

COLLEGE ATTAINMENT

Past and recent evidence suggests that there are still large returns to a college degree that are also difficult to reconcile within a school investment model. While benefits vary significantly across all college programs and occupations, college graduates enjoy an earnings premium in all major occupation sectors. The empirical evidence suggests that those at the margin of attending benefit at least as much as those from the more general college population at large. Many researchers believe skill-biased technological change has caused a large growth in demand for college educated workers, especially those with skills that cannot easily be automated. Other empirical research argues that there are likely large non-monetary returns to higher education, including higher job satisfaction and better health outcomes .A possible behavioral explanation for no college experience is lack of encouragement and approval from friends and family. Qualitative research on the college decision-making process suggests that students develop predispositions towards higher education at an early age based in part on parents' experiences and level of encouragement, as well as friends' interests in going, the high school resources available to them, and access to college information. Salient information from these sources – as well as the social implications of a college-going identity – may therefore play an important role in actual attainment. Another behavioral barrier to college has to change routine to get there. College transition costs are typically considered too small to matter in the education investment model. However, there are many transition points from high school to college that require deliberate attention around short and long-term trade-offs. Prospective students must decide where to go, how long to go, how to afford to go, and then actually apply. Upon gaining admission, they must choose courses, set up meetings, fill out forms, and finally show up for class. While many underprivileged students express intent to goon to college, they sometimes fail to complete application requirements. Some student plan to attend college, gets accepted, register for courses, and yet fail to show up when their program begins. Others attend for years only to drop out before graduating despite often only requiring a few more credits. Benefits from college appear more associated with program completion, even for programs lasting 1 or 2 years.

PROGRAM SUITABILITY

College-bound youth must choose where to go and what to study from a wide array of options. Without adequate deliberation, many of them may end up in places not best suited to their abilities or interests. Recent evidence suggests that high-achieving students from low- and middle-income families are less likely to apply to selective institutions to which they would likely be admitted. Moreover, many students may not consider the breadth of program and school opportunities available to them (i.e. vocational programs, relative to General Arts and Sciences programs at a local community college), especially if they are unfamiliar with them. Given that postsecondary completion rates, per-student instructional resources and career advising services vary widely across various institutions and programs, enrolling in schools that do not best match abilities and interests can be very costly for students. Mismatch between student interests and college services may also increase chances of dropout.

POLICIES AND PROGRAMS TO ADDRESS BEHAVIORAL BARRIERS

The growing literature of interventions designed to overcome behavioral barriers in education. we classified barriers into four general categories: 1) some students focus too much on the present, 2) some rely too much on routine, 3) some focus too much on negative

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identities, and 4) mistakes are more likely with many options or with little information. We selected interventions based on their likelihood of helping with at least one of these barriers. Some of them target a specific event, like helping complete an application. Some target a one-time change in school environment, like introducing more regular tests. Other interventions target recurring barriers and thus occur in multiple doses, like reminding students each week to attend tutorials. Whether a one-time or continuous intervention is preferred or warranted depends on a number of factors, especially cost and effectiveness. One-time interventions are not always cheaper. For example, a motivational presentation to think about the future is more expensive than a weekly email linking to motivational videos. With regard to the effectiveness of a behavioral intervention, a key determinant is the timing between it and when the actual decision being targeted needs to be made.

CONCLUSION

With my review of selected theoretical and experimental studies combined with empirical evidence I attempt to illustrate how integrating behavioral economics with educational economics holds great promise for academics and practice. College is an important milestone of life that is believed to develop several aspects of an individual's human capital, broadly defined to include both cognitive and socio-emotional traits. Consequently, there is great emphasis on enrolling in selective colleges that are expected to provide more competitive and able peer environments, more qualified teachers, better role models embodied in their alumni, greater access to extra-curricular activities, and serve as a signal for higher ability. Experiencing an environment such as this for 3-4 years is likely to shape one's broader skill set. While the existing literature on school and college quality has explored mainly academic outcomes and reports positive or insignificant effects of exposure to elite educational institutions. "Transformational change can occur only by capturing the hearts, minds and souls of all those individuals who comprise the academic community. Engagement, ownership, trust, confidence, integrity, passion and well-being are some of the key ingredients to fostering an interconnected, collaborative and efficient institution. By taking into account our frequent difficulty in making short and long-run tradeoffs, behavioral economics has made significant inroads in many different domains. Education represents a relatively new avenue for behavioral economics, one that holds many opportunities. Since executive brain function, which helps focus on the future and control impulses, does not mature fully until an individual's mid-twenties, children and adolescents are even more susceptible than adults to "behavioral barriers" which may lead them to miss out on education opportunities.

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Teaching Economics

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IMPORTANCE OF TEACHING IN ECONOMICS[1]

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INTRODUCTION

Education in general and teaching in particular has assumed greater significance in the contemporary world. With opening up of the global economy services have also begun to play crucial role in shaping up the new economy.

The need of the hour is to adopt unconventional and innovative methodologies, which will help the-student to explore in multidimensional ways to strengthen his/her own capabilities and equip him her to face the challenges that life has store for them. The present paper is divided into four parts. The first one expresses teaching of economics, the second part of this paper shows teachers role in teaching of economics, the third parts of this papers reveals to teaching techniques in economics and the fourth part of this paper offers policy option concerning teachers, students, government etc

Economics is the most useful subject in social science, pure sciences are taught to the students at all levels in more specific and practical way but social sciences and especially economics is taught to the students in most traditional way.

It is equally true that teaching of economic science requires innovative skills of method of teaching. Teaching of economic science requires through changes in content, system or approach of teaching largely due to increasing number of students, increasing number of formal and informal education institutions and increasing number of teachers also in economics.

An attempt is being made to diagnose the exteriorizing standards in all types of education and to prescribe the essentials for a teacher to become relevant for the modem society in the 21st century. Teachers play a crucial role in society and are called national builders.

Good teachers are those who are skillful in developing understanding of world with patience and sincere feelings for others. Good teacher is one who manages his/her popularity. Successful teacher is one who survives until better substitute is available to the management. Effective teacher is above all these, able to serve all the stakeholders in his/her profession. A teacher needs to be self-accountable and must establish his/her credibility through ethics of morality.

There are several methods of teaching which may be used to teach economics. An effective teacher may use different teaching methods to make their effective teaching learning process.

As far as the selection of proper method is concerned the teacher should not be dependent on the particular method. Therefore, the teacher should use the combination of various methods and techniques.

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Innovative teaching contributes to the growth and dissemination of knowledge. Teacher with innovative teaching method shapes and influence the young lives. There is an need of the hour is to adopt unconventional and innovative methodologies, which will help the students to explore in multidimensional ways to strengthen his/her own capabilities and equip him/her to face the challenges that life has store for them.

Economic Science is a subject taught at almost all facilities of higher learning including Arts, Commerce, Engineering, Agriculture, Management, Medical, Pharmacy, etc. Knowledge of economics is useful to students to understand local, national, regional and international level problems. Still there is rising need of economists required in finance, industry, trade and corporate sector as well as at government organization to run and manage economic affairs.

To conclude front the above discussion, constant evaluation is required so as to provide adequate level of teaching and adequate manpower to the economy. Time had came both for students well as teachers of economics to justify their selected subject and profession of teaching respectively.

In the teaching of Economic important issues to be discussed are (i) Syllabus (ii) Medium of Study (iii) Method of teaching (iv) Uniformity in teaching. (iv) Number of Students (v) Role of Teachers.

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SOME REFELECTION ON TEACHING IN ECONOMICS

(vi) Extra-Curricular Facilities to students (vii) Examination and Evaluation (viii) Orientation and Re- fresher Courses.

In economics to-day the first and foremost issue is to make the syllabus up to date and relevant to I with problems which India is facing in the present global world. We also find divergence between courses of study of central universities and state level universities. This divergence leads to different well playing causing differences in the quality of products. Now instead of traditional courses teaching of business Economics, Environmental Economics, Mathematical Economics, Labour Economics and Fiscal Economics are more relevant. The objective of the study should be development oriented. When we think about development, we have to keep in mind the different dimensions of development. What economists call 'development', political Scientists call 'Modernization' Sociologists, ‘role differentiation’ and Anthropologists call 'Culture change'. Certainly Economies is an engine of progress and paves the way for human and social welfare. The syllabus should be re-framed in this light and old and traditional topics be replaced by modern and relevant topics in the context of present global world. The feet of modern Economics in not in politics or philosophy but in the basic foundation of positive science while the head is in the objectives of welfare to society and humanity.

The question of medium of instruction of Economics is a matter of great concern. Many state level universities have started teaching Economics in Hindi or in their state languages. Economics is the subject whose roast are in foreign land. All standard text books are in English. Students either depend on cheap books written in Hindi or in vernacular languages or on the translation of foreign books. It causes difficulties in the clarity or conceptual analysis and in proper understanding of the topic. At the national level in Seminars and conferences we find that both students and teachers of Hindi-speaking states participate but feel shy in expressing their views in English. Virtually they become back bench sitters and suffer from inferiority complex. So, only students having excellence in English language

should be encouraged to study economics. The medium of teaching of Economics also should be English from graduate level itself. This will bring self-confidence among the students and they will comprehend the subject in full originality and entirety. It will reduce the gulf between the urban and rural, national and regional level of teaching as well as reading of Economics.

The teaching of Economics cannot be limited to class room. The students of Economics should get magazines, journals, Internet facilities, good library and opportunity to participate in Seminars and symposium. They should get the facility of excursion to visit places of economic importance and also big factories and business places. The present system of examination and evaluation is traditional, out of date and purposeless. The questions are set on traditional pattern which are easily guessed and students depend upon guess papers for their examinations. They do not study text books. Questions should be such that students should go through whole text book. Moreover, there should be more terminal examinations and some marks should be allotted for terminal examinations also.

A teacher in teaching should not only be a teacher but also play the role of facilitator and counselor as guide and supervisor of research scholars. There should be a linkage between university and industry. University and corporate sector for improving teaching skills through practical knowledge as per need and requirement of papers taught by the teachers in Economics. Economics is having multidisciplinary approach. Therefore Economics students should have knowledge about quantitative techniques. Teaching becomes lively only when are talks of applications of economics, thus, it is very helpful to explain the practical application of economics, in business decision making. Market as well institution must encourage right-type of students in Economics by providing job-assurance and placement as well as by offering scholarships. Continuous dialogue among the teachers of Economics is necessary regarding teaching methodology; curriculum etc. It is also necessary to have an exchange of sharing experiences and experiments in teaching of economics with the country and abroad too. Examination oriented teaching need to enhance knowledge oriented so as to fulfill expectation and aspirations of society and government.

In recent years research in Economics has become popular at college, University and Institute level but the quality of research has deteriorated. Students are enrolled in research without considering their talent and skill to pursue research projects. At university level, there are complaints of manipulative degrees and turning research cell as milky cow for commercial guides and university officials. Every year research scandals are published in the Newspaper in one university or the other. As such it is very essential that a scholar must go to study Methodologies in research in the institute where such type of training courses are organized. With increasing importance of quantitative techniques every student who wants to be registered for research degree, must be given training of fundamentals of quantitative technique. To make the research more fruitful research projects based upon primary sources of data should be promoted. It should always be kept in mind that Ph.D. degree is not the end of research. It is just a stepping-stone for higher study. The Guide must be specialist of the topic. It is a bad convention that scholars of multi-dimensions are registered under the same guide. Every care has to be taken that the degree is not manipulative or pampered. Only then teachers and students of economics can play their vital role in the acceleration of the pale of Economic development of the country.

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Conclusion

To sum of the discussion, Economics is developing social science. So, Constant evaluation is required to provide desired level of teaching; talented and skilled manpower and quality research with innovation and experimentations. Economics has to face the challenges of 21st century in the era of liberalization and globalization. Economics has world to win and establish itself at the top of all other subject showing the ways for amelioration of poverty and unemployment and usher is prosperity of whole mankind.

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TEACHING ECONOMICS IN SCHOOLS PUDUCHERRY: NEED TO IMPROVE THE SCOPE[4]

K. KALAIYARASI[5]

Introduction

The need of the people can be arranged into three classes viz. Mandatory needs, significant needs and extravagance needs. Mandatory needs are the essential prerequisite of the man like nourishment, lodging and garments. Other significant needs are transport, correspondences and ability advancement. Extravagance needs are goldm top notch types of gear and so on. To satisfy these necessities people go for financial exercises like gaining cash, with this earned cash he purchases the merchandise and enterprises which thus goes into creations framework and from generation framework it returns to the customer's crate as far as pay.

Difficulties looked by Educators and Issues of Understudies

Educators challenges: The principle issue for encouraging the financial aspects is lack of financial matters instructors in the schools. Educating is done essentially by other craftsmanship subject educators who are not all around familiar with the subject, in this way are not ready to make enthusiasm for the understudies. A portion of the subjects of financial aspects are not fathomed by the educators themselves. In the arrangement of Puducherry school training framework, just a single speaker is named to show financial matters just as topography. The fundamental issue of geology speaker is to cause understudies to comprehend the subject and relate it to everyday financial exercises. In addition there are around 80-85 understudies in the class which is beyond the realm of imagination to expect to deal with by one single instructor. Once in a while this over troubled class needs to sit outside the study hall where educator can't take the assistance of chalkboard.

Understudies issue: Normally expressions subject is given to feeble understudies that too with enormous class. Understudies are ordinarily not knowledgeable with arithmetic which makes issues to comprehend the rationales in monetary class. In the thriving class they are not ready to see even basic speculations and are not ready to relate it to their day by day monetary exercises. Understudies, in this manner, get substandard buildings when contrasted with science understudies and attempt to bunk classes. They attempt to mug up the course to pass the assessments.

Techniques for instructing

Ordinarily the talks in financial matters are finished by one way correspondence, where talk is conveyed and it is comprehended that understudy comprehends the theme. No endeavor is commonly made to get the input from the understudies on his perception. No conversations occur in the study hall because of the reasons referenced above and additionally

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[4] Paper presented in the **40th Annual Conference of Association of Economists of Tamil Nadu** Organized by Department of Economics, St. Joseph's College (Autonomous), Tiruchirappalli-620 002 on 2nd February, 2020.

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no pragmatic issues are given to understudy to cause him to comprehend the subject. Model citing is typically absent in the talk, consequently, understudies get uninvolved in the subject .

Examination of NCERT course and Puducherry course

In Puducherry course avoidance of smaller scale and full scale financial aspects are excluded as in NCERT, which regularly makes enthusiasm for the understudies and progressively over exceptionally huge themes as referenced before has been incorporated, which removes understudies enthusiasm from the subject. Along these lines, the points should comparable as I comprehend.

Step by step instructions to make the course fascinating

1. Should incorporate graphs and outlines
2. Students should be urged to examine everyday financial exercises, for example, value slants through straightforward diagnostic devices like charts and so on.
3. To reenact markets, banking, ventures and so forth in the homeroom by making understudies functionaries of specific segments.
4. Under task work understudies should visit better places of monetary exercises, for example, banks, enterprises and different spots
5. Should be taken to examine visits, for example, businesses, stock trades and so forth.
6. Enlisting diverse normal assets in pictoral structures
7. Assigning at any rate 40% imprints to handy, venture works and so on
8. Mathematical financial matters ought to be presented as opposed to exhausting hypotheses

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THE ART OF TEACHING AND SCIENCE OF LEARNING ECONOMICS

Dr. V. MOHANASUNDARAM

Preamble

Of theory and of practice; *one without the other is useless and perilous; knowledge that does not generate achievement is a pale and bloodless thing, unworthy of mankind. We strive to learn the forms of things not for the sake of the forms but because by knowing the forms, the laws, we may remake things in the image of our desire.*

- Will Durant, "The Story of Philosophy", Paperback Edition, Sep 2006.

Introduction

The beauty of economics lies in its logically consistent theories with a set (big / small / relatively small) of core assumptions which offer clear, testable, predictions. Notwithstanding this special feature, the growing empirical evidence clearly establishes the fact that it is extremely difficult to reconcile the human behaviour within the framework of economic models. What has been so impressive is the yet another fact that the growing economic theories / models / versions heavily borrow / rely on insights derived from the unexpected quarters i.e. apart from Psychology and Sociology the list includes Anthropology, Neuroscience and evolutionary Biology. However, as argued by **Sanjit Dhami** (2018), yet, these models (neo-classical) maintain a distinct economic identity in terms of their approach, rigor and parsimony.

Statement of purpose

Nevertheless, the two fold challenges lie in finding suitable, appropriate, feasible and convincing answers to the following questions given the Indian context is a real challenge. The challenge is compounded duo to the fact that the complexity of Teachers, Students, Universities and Research Institutes is insurmountable. So an exercise has been taken up in this paper wherein the viewpoints of four foreign papers and the contents of a Handbook prepared by a group of Indian experts are examined and the observations are made on them to evoke a wide discussion rather than concluding or closing of the matter.

1. How and in what framework of mind that one is going to learn, comprehend and understand such a fastest growing subject of economic discipline i.e. from basic to sophisticated mathematical models?
2. How and in what manner the economic ideas learned, understood and classified are going to be transmitted suitably to the students at different levels- undergraduate, advanced undergraduate, postgraduate and research- and to different categories of students i.e. apart from economics to the students of other disciplines like Psychology, Sociology, Commerce, Political Science, Management and Finance?

Objectives

1. To examine the ways and means by which the Teaching of Economics can be made as an art in the given opportunities as well as constraints.
2. To look into the elements of scientific way of Learning Economics within a defined framework.

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Scope

The presentation has been made under seven parts.

Part – I

I am concerned particularly for India and other developing countries whose economic doctrines come to them mainly from England and in English.

*- By **Joan Robinson** (1960)*

Joan Robinson

At first she has categorised the students of Economics into two, pointed out their responses and the level of understanding as given in table 1.

Table 1 Categorisation of Students and their Level of Understanding

Category	Nature of Responses	Level of Understanding
A. Exam Passers	Aim of passing an examination and acquiring a degree	• Learn the trick of saying what is expected • Not ask themselves what – no inquisitive mind
B. Naturally brilliant	Serious. Really want to learn	• Goes deeper –reads some brilliant authors / works • Raises questions – great question (e.g. how far can private – enterprise capitalism be made to serve national ends?)

At this juncture, from the experience of the present author, the teaching of economics should follow the sequence as mentioned in table 2.

Table 2 Categorization of Students and their Level of Understanding: The Current Status

Category	Nature of Response		Level of Understanding
A Exam Passers	▪ Aim of passing an examination and acquiring a degree ▪ Acquiring skills needed but not available in the curriculum	• • • •	Learns the art of writing minimum to secure passing marks Asks more questions outside the syllabus – e.g. GK, and comments upon the current affairs. Tries to relate the variables / events Awakened in the class
B Naturally Brilliant	▪ Serious ▪ Really want to learn ▪ Want to be more competent and competitive.	• • •	Learns the science/structure of presentation. Thanks to the growth in the technology he/she has a ready reckoner Becomes more argumentative. Develops own views and perception on the function of not only the nation state but also of international / global trends.

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Category	Nature of Response		Level of Understanding
		•	Aims to write competitive exams for higher level posts (e.g. UPSC/ TNPSC) and knows pretty well that only then he/ she land in a government service at the lower end or at least get a job in private enterprises at the end of the job ladder (in the beginning)
		•	Conscious not to be behind with others in the class.
		•	Through projects and internship scores a high level of exposure

Hence, category A requires teaching economics with current, updated data and information and have to be motivated with real time examples. The students of category B, on the other hand, demand more i.e. the method and technique of teaching the subject has to be taken to a higher level.

Part-II

David Colander (2003) in his paper, The Art of Teaching Economics has given a different approach to teaching economics: ***Ultimately content, not delivery, determines whether one is or is not a good teacher. On the basis of this a table has been prepared on the old as well as the new paradigms of Teaching.***

At the same time to highlight my objections to both the old paradigm and the new paradigm, (in column 3 of the table 3) I have added a third dimension – what I call the 'common sense' approach – which attempts to combine content and delivery issues, and then briefly discusses the differences in approach.

Table 3 Teaching Paradigms

	Old Paradigm	Common Sense Approach	New Paradigm
Knowledge	Transforming from Faculty to Students	Faculty leads students into a previous constructed knowledge while pointing out that it is not necessarily truth; emphasizes critical thinking	Jointly constructed by students and faculty
Students	Passive Vessel to be Filled by Faculty's Knowledge	Active vessel to be filled by Faculty's knowledge, but still a vessel to be filled	Active Constructor, Discoverer Transformer of the Knowledge
Mode of Learning	Memorizing	A combination of Learning terminology and relating	Relating

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	Old Paradigm	Common Sense Approach	New Paradigm
Faculty Purpose	Classify and Sort Students	Develop student's competencies and talents; inspire, force, connive ways to get them to learn	Develop Student's Competencies Talents
Student Goals	Students strive to complete requirements, achieve certification within a discipline	Students strive to complete requirements and achieve certification and may be become interested in broader learning	Students strive to focus on continual Lifelong learning with in a broader system
Relationships	Impersonal Relationship among Students and between faculty and students	Personal relationship among students and between faculty and students	Personal transactions among students and between faculty and students
Context	Competitive/Individualist	Combination of cooperation and competition	Cooperative learning in classroom and cooperative teams among faculty

In his next paper **Colander** (2004) added another seven dimensions: Climate, Power, Assessment, Ways of knowing, Epistemology, use of technology and teaching assumption. A quick look into them gives an impression that they touch only the periphery and not the core. On the basis of looking into the points and the explanations offered by Colander, the following are a few observations.

By keeping in mind, the nature of Indian class rooms wherein the transaction (between teaching and learning / between the Teacher and Students) takes place in a subdued manner, the following is the re-ranking of Colander's framework.

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Table 4 Ranking of Attributes of Teaching- Learning

Attributes	Rank	Comment
Knowledge	IV	Provision of knowledge not in the form of bits and pieces
Students	VI	Inquisitive learning – already empowered in a few areas and needs to be filled with domain knowledge on the one side and the necessary skills on the other.
Mode of Learning	VII	ICT assisted and focused
Faculty Purpose	V	Do the best with Commitment & Involvement which, in the process, automatically take care of the rest.
Student Goals	III	Mostly short – term (e.g. job / employment) but motivated to become the best professionals in the chosen field.

Attributes	Rank	Comment
Relationship	I	Makes the difference in understanding each other, accepting/ rejecting each other. The rapport and relationship should be in the complete purview of academic pursuits to enhance the utility of Teaching - Learning process.
Context	II	However much it can be said on this, it remains mostly competitive. Building co-operative spirit remains a distant dream to be achieved. Let us strive for it.

Part-III Problem-Based Learning (PBL)

Ricard (2011) in his paper elaborated the use of problem-based learning method with a specific example of Producer Theory and Market Structure in micro economics. In this proposed framework the students are presented with different decision problems. The students are asked to imagine that they are the Managers of a firm and they need to solve a problem in a particular business setting. In this setting, the Teachers' role is to provide guidance and facilitate learning of the content.

To integrate PBL into the Economics Curriculum it is necessary to follow three steps

- Designing problems and /or tasks
- Assessing the response to the problem /tasks
- Designing the PBL environment

As currently we are dealing with teaching the millennials, naturally the challenges galore. By keeping this in mind **Julien Picault** (2019) represents an excellent review of pedagogical innovations which have high potential to supplement or even to replace traditional lectures. The teaching methods covered in this article include

i. Flipped classroom
ii. Student- crafted economic experiments
iii. Use of social media as a medium of instruction
iv. Power point presentation-not as a substitute (for "chalk and talk") but as a complementary tool.

Part - IV
Using Economic Classroom Experiments

'Class room experiments have become 'the most exciting new development in teaching economics'

Charles Holt (1999)

Kaplan (2010) starts with the statement "Economic classroom experiments are an excellent way to increase student interest, but getting started may be difficult".

The modus operandi of this innovative method of teaching economics, which has been pioneered by **Vernon Smith** (Winner of 2002 Nobel) and became popular due to the works of **Daniel Kahneman** (Winner of 2002 Nobel), is found as have more merit in the sense that its potentials are two-fold: the student interest in the material is naturally accelerated and the evaluation part is sure of reaping benefits.

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Part - V
Effective Teaching of Economics

Planning for Effective Teaching of Economics The sequence involved here is, **Organisation of the content, Conceptualisation - concept mapping, Sourcing materials, Unit Plan, Instructional Strategy, Evaluation.**

Table 5 Methods in Classroom Transaction of Economics

S. No.	Method	Components
1	Lectures	● Content need to be clearly spelt out ● Use of contextual examples either from day-to-day life or from media
2	Discussion	● Teacher initiated ● Student initiated ● Small Group
3	Story-Telling	● Teacher initiated ● Student initiated
4	Problem based leaning (PBL)	● Teacher must possess sufficient knowledge in the subject matter of economics ● Teacher should have the ability to manage the students / class to develop focused enquiry
5	Simulation Games	● Purpose – set of objectives ● Rules ● Time bound ● Cooperation ● Competition ● Scoring System
6	Media and Technology	● Beyond Syllabi and academic curriculum – Teacher as facilitator – nurturing student skills and attitudes ● Skills – thinking, problem solving, critical thinking, creative thinking ● Attitudes o Development of interest in the subject. o Development of Research orientation
7	ICT – Internet	● Mathematics in Teaching Economics – Mathematical Tools ● Economic Modelling ● Use of concept making in teaching economics ● Assessment – OBE – Bloom's Taxonomy and Teaching Economics

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Part-VI Science of Learning Economics

There are four steps involved in the science of learning to fine tune the academic performance: Knowledge, Comprehension, Application and Analysis.

Table 6 Steps involved in Science of Learning Economics

Step	Component	Features	Evaluation (% of questions)
1	Knowledge	• The basis of learning • Helps to build up specific facts and definitions • Focuses on the acquisition of material	**15**
2	Comprehension	• Focuses on the grasping the meaning of • material Interpretation • Estimation of trends • Predicting future effects and implications	**30**
3	Application	• Applying economic concepts, principles, laws and theories to the real world situations	**35**
4	Analysis	Identification of parts • Gaining an understanding of the relationship(s) • between parts • Being able to identify the organizational principles and laws involved	**20**

General guidelines of learning apart, to learn economics better requires time, dedication and good study habits. This is common to both the Teachers and Students. Specifically, the Teachers should

- Ask questions instead of providing answers
- Support students instead of judging them
- Facilitate their development instead of dictating what has to be studied or learned

The Students should

- Ask appropriate questions especially on more complex economic theories and applications.
- Read, and after reading (each topic/ chapter) remember terminologies, relate relevant terms to one another and relate each topic/ chapter/ course to other topics/ chapters/ courses.
- Attend all lectures and classes – Economics is such a **demanding course** that one cannot afford to miss a class.
- Master each new concept/ theory by i) Listening ii) Asking questions iii) Responding to questions, and iv) Taking notes.
- Go through newspapers (regularly), journal articles, books and e-books which cover your area(s) of interest.
- Open up to a plethora of materials available in the web including PPT presentation materials on any topic.

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Part- VII Application of Economics

Like all other subjects Economics is also a dynamic one and growing by branching out (like Neuroeconomics, Cryptoeconomics) and embracing several other disciplines posing a very great challenge to both the Teachers and Students in comprehending them. Similarly, methods or strategies of learning Economics are also have been changing very fast and the terms like **"Blended Learning"** and **"Virtual Learning"** are doing rounds now.

As all the concepts or terminologies are derived from the behaviour of consumers, markets, economic institutions and economic laws, which are naturally familiar to all of us, explaining the application of Economics is not at all a difficult one. From simple (like Law of Demand, Consumer Surplus, National Income, Credit Creation, Budget and Balance of Payments) to complex (Market Failure, Shadow Prices, Pareto Optimality, Walrasian Equilibrium) concepts we have hundreds of real time examples to teach and explain the application of economics.

For both UG (Group/ Individual) and PG (individual) project work must be made compulsory. This will give a great amount of exposure to theoretical, empirical and everyday economics. It will help to sharpen the language skills, referencing, presentation techniques of the Teachers, at the first instance. Then it will be ably passed on to the Students.

Now, Institutional Training / Internships have become the order of the day. Industrial visits have immense value. Encouraging students to visit Agri – Expo, Industrial – Expo, Sunday Markets, Consumer goods Exhibition, Commercial Bank – sponsored Programmes / Melas, Uzhavar Santhai and so on will help to personally see and observe the economic activities.

To Sum up

It is better to sum up this small exercise with the point that the art of teaching and science of learning economics are not at all difficult and, in fact, it is much easier if one adopts "from known to unknown" approach coupled with "simple to complex" method. Given the constraints of time, resource and sophisticated ICT facilities, let us start teaching economics through newspapers, research articles and standard books and learn by keen observation of the behaviour and activities of consumers and economic institutions. What is required (for both the teacher and the students) is an alert mind and to be alive to the situation. Let us take up the challenge put forward by **Raghavan** (2003): "In this age of globalization and market economies, the scope of economics has widened, no doubt, but is still given a step – daughterly treatment by both Academicians and students alike. Eventually, the business sector has come to took down upon students doing economics, as if they are bereft of any common sense, let alone analytical skills…….Economics as a social science, not only warrants a better understanding of its components, but also demands expert knowledge in scientific areas. In such a situation, it would do us good to divide the subject matter of economics into different modules, which may make studying economics an easier task. The emphasis of the students must be to learn the fundamentals right, which will eventually lead to greater specialization. Learning such basics, will not only make comprehension easy, but will also pave the way for further research….. Vigilance of mind is the key to the mysteries of life. As economics plays the facilitator role in this world, whose both ends make up a spectrum of living beings, it is a pre requisite that a student of economics possesses the agility of such a vigilant mind…"

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To know that we know what we know, and that we do not know what we do not know, that is true knowledge.

- Confucious

When one man has reduced a fact of the imagination to be a fact to his understanding, I foresee that all men at length establish their lives on that basis.

- Henry David Thoreau

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Tamil Nadu Economy

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AN ECONOMIC ANALYSIS OF SEASON WISE CULTIVATION OF FOOD CROPS IN CHINNAPALI VILLAGE OF DHARMAPURI DISTRICT, TAMIL NADU[1]

Dr. V. MALLIKA[2] & J. MAGESHWARI[3]

Introduction

Agriculture is the main occupation of the Indian peoples. Performance of Indian economy is dependent upon the growth of Agriculture sector. It contributes nearly 14 percentage of India's Gross Domestic Product (GDP) and 13 percentages of total exports. It provides employment to 52 percentage of the country's work force and livelihood security to more than 620 million people. The share of agriculture and allied activities in GDP at factor cost was 14.6 percent in 2009-10. This percentage fell to 66.9 percent in 1991 and to 56.7 percent in 2001. In 2004-05, agriculture provided employment to 52.1 percent of the work force. However, with rapid increase in population the absolute number of people engaged in agriculture has become exceedingly large. Food crops including cereals, millets, pulses, vegetables and fruits are nearly three-fourths of total cropped area. The heavy pressure of population in India, labour surplus economies like India and its rapid increase, the demand for food increases at a fast rate. The existing levels of food consumption in these countries are very low and with a little increase in per capita income, the demand for food rises steeply (in other words ,it can be stated that the income elasticity of demand for food is very high in developing countries). Therefore, unless agriculture is able to continuously increase its marketed surplus of food grains, a crisis is likely to emerge. Many developing countries are passing through this phase and, in a bid to meet the increasing food requirements, have been compelled to import large quantities of food grains. So the researcher need to study the season wise cultivation of food crops in Chinnampalli Village of Dharmapuri District of Tamil Nadu.

Objectives of the study

1. To understand the socio-economic conditions of the respondents in Chinnampalli village of Dharmapuri district of TamilNadu.
2. To analyse the season-wise cultivation of food crops.
3. To evaluate the cost of cultivation and income of the respondents.

Methodology of the study

The present study was based on primary data collected through a field survey carried out in Chinnampalli village of Dharmapuri district of TamilNadu from February 2019 to March 2019 from 50 respondents selected by using simple random sampling method.

Socio-Economic Conditions of the Respondents

The sample consisted of 37 males and 13 females.

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[1] Paper presented in the **40th Annual Conference of Association of Economists of Tamil Nadu** Organized by Department of Economics, St. Joseph's College (Autonomous), Tiruchirappalli-620 002 on 2nd February, 2020.

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Table 1 Age wise classification of the Respondents

Age	Number of Respondents	Percentage
36-45	16	32
46-55	18	36
56-60	13	26
Above 60	3	6
Total	**50**	**100**

Source: Field Survey

From table 1 it is clear that 36 percentage of the respondents belong to the age group of 46-55 years, 6 per centare above 60 years. The reason is youngsters are not willing to work in the field of agriculture. Only those who are above the age of 50 years, mainly depend on agriculture.

Twenty Seven (54%) respondents are BC, 10 from MBC and the remaining 13 from the SC community.

Monthly Household Income

The monthly Household income of the respondents in the study area is given in the table 2.

Table 2 Household Income wise classification of the Respondents

Monthly income	Number of Respondents
5000 to 10000	15(30)
10000 to 15000	19(38)
I5000 to 20000	8(16)
Above 20000	8(16)
Total	50(100)

Source: Field Survey, Brackets indicates the percentage

From the above table it can be inferred that 38 percentage of the respondents monthly income is Rs.10000-15000 and 30 per cent of the respondents monthly income is Rs.5000-10000. Only 8 (16%) respondents reported an income of Rs.20,000 per month.

Land Particulars

Majority of the selected households (36 out of 50) owned dry lands and only 16 farmers found owning irrigated lands.

Cropping System

Table 3 Cropping System wise classification of the Respondents

Cropping System	Number of Respondents
Single Cropping	7(14)
Mixed Cropping	23(46)
Both A and B	20(40)
Total	**50(100)**

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Table 3 shows that 23 farmers cultivated mixed crops and 20 cultivated by both single crop and mixed crop.

Cropping Pattern

Table 4 Cropping pattern wise classification of the Respondents

Cropping pattern (Annual)	Number of Respondents
Single Cropping (Paddy, Turmeric, cotton)	7(14)
Mixed Cropping (Ragi, Thevanaththttu, Minor Millets, Groundnut, pulses, Green leaves, vegetables)	43(86)
Total	**50(100)**

Source: Field Survey, Brackets indicates the percentage

The table depicts that, 86 percentage of the respondent were cultivated crops like Ragi, Minor millets, groundnut, pulses, green leaves and vegetables during the monsoon. Only seven respondents cultivated paddy, turmeric and cotton.

Cost of Cultivation

The cost of cultivation of Pulses, Paddy and Cotton was found as Rs.15,000 per acre and for ragi, minor millets and groundnut it varied from Rs.5,000 to 10,000.

Sources of Credit

Out of 50, 26 farmers borrowed from Commercial banks, 17 from Self Help Groups and others (7) managed from their own funds.

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GROWTH PERFORMANCE OF SMALL SCALE INDUSTRY IN INDIA[4]

Dr. V. KALAISELVI[5]

Introduction

Indian economy since independence is the rapid growth of the small-scale industrial sector. Over the past five decades, successive governments have framed policies to protect the interests of the small-scale industrial sector and facilitate its rapid development. The small scale industries are generally comprised of those industries which manufacture, produce and render services with the help of small machines and less manpower. These enterprises must fall under the guidelines, set by the Government of India.

In pursuance of their policies, Governments have initiated various support measures from time to time, which include reservation, revision of investment ceilings, modernization of technology, marketing assistance, fiscal incentives etc. Small scale industry is assumed to important role in creation of employment, promotion of export and alleviation of poverty along with industrialisation. Because of labour intensive nature adapadpility in local conditions it is considered as vehicles for an employment generation and industrial dispersion. Consequential the government of India has given it as important place while enacting various industrial policy resolutions. Policy has been formulated for SSIs from time to time by both centre and state government to promote industrialization along with regional balanced growth. The growth of informal sector during the 1970s and 1980s displace the view on lack of dedicated entrepreneurship, and it was felt that opportunities encourage initiative.

It was argued that growth from small to large was possible if external obstacles were remove and policy formulated to ensure availability of risk, capital access to technology quality promotion, infrastructure development easy access to raw material and marketing support. During 1990s most economics become more open hitherto – fore and hence the growth prospect of manufacture are now determine by ability to compete against imports are sell international markets. Development in technology and globalisation of capital have thrown open new opportunities and challenges for small scale industries. It is found that the smaller SSIs are growing not only numerically but also in terms of employment, investment and output. SSIs in the factory sector growth in the number of factories and employment, through capital is being accumulated at a fast pace.

The SSI's are the lifeline of the economy, especially in developing countries like India. These industries are generally labour-intensive, and hence they play an important role in the creation of employment. SSI's are a crucial sector of the economy both from a financial and social point of view, as they help with the per capita income and resource utilisation in the economy.

Objective

To study the performance and growth of the Small Scale Industries in India.

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Performance of the Small Scale Industries

Performance of the Small Scale Industries was studied by taking into account Units, Production, Employment, Investment and Exports.

Table 1 Performance of SSIs in India

Year	Total No. of Units (Lakh)	Employment (Lakh persons)	Total Investment (Rs. crore)	Production of current prices (Rs. crore)	Exports (Rs. crore)
1991-1992	70.63 (4.07)	165.99 (4.83)	1,00,351.00 (7.26)	80,615.00 (2.30)	13,883.00 (43.66)
1992-1993	73.51 (4.07)	174.84 (5.33)	1,09,623.00 (9.24)	84,413.00 (4.71)	17,784.00 (28.10)
1993-1994	76.49 (4.07)	182.64 (4.46)	1,15,795.00 (5.63)	98,796.00 (17.04)	25,307.00 (42.30)
1994-1995	79.60 (4.07)	191.40 (4.79)	1,23,790.00 (6.9)	1,22,154.00 (23.64)	29,068.00 14.86)
1995-1996	82.84 (4.07)	197.93 (3.42)	1,25,750.00 (1.58)	1,47,712.00 (20.92)	36,470.00 (25.46)
1996-1997	86.21 (4.07)	205.86 (4.00)	1,30,560.00 (3.82)	1,67.805.00 (13.60)	39,248.00 (7.62)
1997-1998	89.71 (4.07)	213.16 (3.55)	1,33,242.00 (2.05)	1,87,217.00 (11.57)	44,442.00 (13.23)
1998-1999	93.36 (4.07)	220.55 (3.46)	1,35,482.00 (1.68)	2,10,454.00 (12.41)	48,979.00 (10.21)
1999-2000	97.15 (4.07)	229.10 (3.88)	1,39,982.00 (3.32)	2,33,760.00 (11.07)	54,200.00 (10.66)
2000-2001	101.1 (4.07)	238.73 (4.21)	1,46,845.00 (4.90)	2,61,297.00 (11.78)	69,797.00 (28.78)
2001-2002	105.21 (4.07)	249.33 (4.44)	1,54,349.00 (5.11)	2,82,270.00 (8.03)	71,244.00 (2.07)
2002-2003	109.49 (4.07)	260.21 (4.36)	1,62,317.00 (5.16)	3,11,952.00 (10.52)	86,013.00 (20.73)
2003-2004	113.95 (4.07	271.42 (4.31)	1,70,719.00 (4.87)	3,57,733.00 (14.68)	-
2004-2005	118.59 (4.07)	282.57 (4.11)	1,78,699.00 (4.98)	4,18,263.00 (16.92)	-

Source: Office of the Development Commissioner, SSI, Ministry of Industry (Figures in brackets show the percentage growth over the previous year.)

The performance of the small-scale sector, on various parameters, viz., number of units, value of production, and number of persons employed, amount of investment, and exports in the recent years has been impressive. The small-scale sector, which plays a pivotal role in the Indian economy in terms of employment and growth, has recorded a high rate of growth since independence in spite of tough competition from the large sector. It is now one of the fastest growing sectors in the country. It has made steady progress during recent years. The good performance of the small-scale units is evident from their number, production, employment and foreign exchange earnings.

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Number of Units In 1960, there were only 37,000 small-scale industrial units registered with the various state Directors of Industries throughout the country. The number of small-scale industrial units has since steadily increased over the years. This trend can be seen from 1991-92 to 2004-2005 in Table 1. During 2004-2005, the number of small-scale units increased to 118.59 lakh from 70.63 lakh in 1991-1992.

Value of Production The price value of production of goods and services in the small scale sector reached Rs.4, 18,263 (16.92) crore in 2004-2005 (at 2003- 2004 prices). It was higher by the Rs.3, 57,733 (14.66) crore compared with the figures previous for the year. The year-wise details of value of production in the small-scale industrial sector from 1991-92 to 2003-2004 has been given in Table 1.

Number of Persons Employed

The level of employment in small scale industries was 165.99 (4.83) lakh persons in 1991-92. It rose to 282.57 (4.11) lakh persons in 2004-2005.

Investment Value

The value of investment in the small-scale industries stood at Rs.1, 78,699 (4.98) core in 2004-2005 at 1991-1992 value was higher by the Rs.1, 00,351 (7.26) core important with the together of previous years.

Value of Exports

Exports of small-scale industries have continued to be on the rise. During 2002-2003, the exports were higher by Rs.86,013 crore than those in 2001-2002.Rs.71,244 crore. The trend of increase in the value of exports may be assessed from table 1.1at the national level; the performance of the industrial sector, as indicated by the index of industrial performance has been unsatisfactory. The growth rate index of industrial performance has come down from 5.1% in 2000-2001 to 4.7% in 2001-2002. The growth rate index of industrial performance has gone up to 5.3% in 2002-2003.The following Table 1.2 Shown the small scale industrial sector growth rate in India.

Growth Rate of SSI in India

Table 2 Growth Rate of Small Scale Industry in India

Year	Growth rate of SSI Sector (%)	Growth rate of Overall Industrial sector
1993-1994	5.7	6.0
1994-1995	10.0	9.1
1995-1996	11.5	13.0
1996-1997	11.3	6.1
1997-1998	9.2	6.7
1998-1999	7.8	4.1
1999-2000	7.1	6.7
2000-2001	8.0	5.0
2001-2002	6.1	2.7
2002-2003	7.7	5.7
2003-2004	8.6	6.9
2004-2005	9.96	8.4

Source: Ministry of Small Scale Industry in India

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The small-scale sector has particularly emerged as a vibrant and dynamic segment of the economy.

It is a matter of great importance and pride that India has distinct leading position of its own amongst the developing economies particularly in the sphere of small scale sector. India has a vast reservoir of scientific and technical manpower, occupying third position in the world as far as technical manpower is concerned.

Small scale industrial sector received specific focus towards growth and development in the industrial policy measures, announced on August 6, 1991. These policy measures of SSI sector have given considerable focus and attention towards modernisation, technology up gradation, quality and human resources development.

Table 3 Overall Performance of SSI Sector

Years	No of Units (in lakh)	Product on (Rs. crores at current Prices	Employment (Lakh No)	Export at Current Rs. crorse
2001-2002	105.21	2,82,270	249,09	71,244
2002-2003	110.10	211,993	261,38	86,013
2003-2004	115.22	3,48,059	273,97	NA

The small scale industries have shown tremendous growth in their number, production, employment and exports. The total number of small scale units has increased from 105.21 lakhs in 2001-02 to 115.22 Lakhs in 2003-04.The above table clearly depicts that there is some percentage of increase compare to previous years. Similarly the value of Production of Small Scale units has gone up from Rs.2,82,270 cores in 2001-02 to Rest. 2, 48,059 cores in 2003-04.

The number of persons employed in small scale units too, has gone up from 249.09 lakhs in 2001-02 to 273.97 lakhs in 2003-04.Exports from small scale sector account for nearly 35 percent of the gross value of exports from our country. Total value of exports of this sector has increased from Rs.71,244 cores in 2001-02 to Rs. 86,013 cores in 2002-03.

Small scale industry is playing a very important role in the industrial development of our country. The growth in employment in this sector over years has been remarkable. The total value of production of small scale units comes to nearly 40 percent of the total value of industrial output of the country. Over the years a heartening trend in exports has been observed in the shape of increase in exports of non-traditional items from this sector.

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RURAL-URBAN DISPARITIES IN AWARENESS ON SOLID WASTE MANAGEMENT[6]

B. SUMATHI[7] & Dr. R. KARTHIKEYAN[8]

Rationale

The solid wastes have become significant political, social and environmental issues; setting new disposal facilities to manage these wastes have become difficult as the population to grow rapidly. Much of what has come to be considered the "Garbage crisis" in the world is not the product of immediate past practices or present inaction, but a series of chronic problems interrelated in such a way as to defy a clear solution. Solid waste has become one of the major pollution in India in recent years. The waste management in India is the responsibility of local governments, though it has been intended that local government would raise the financial resources required for the provision of basic civil amenities, including waste management, As a result, local authorities are not strongly placed to have a comprehensive set of waste management policies of their own. Instead; they act only as implementing agencies for scheme formulated at the national level. Urbanization and industrialization in general terms, the urban population produced two to three times more of the municipal solid waste than the semi-urban and rural population per capita per year. Solid waste management is a diverse and complex enterprise, which involves organizing, financing, operating and regulating processes.

The management of urban and rural solid waste has problems and constraints, which inhibit the proper and effective disposal of solid waste, these problems and constraints result in operational and maintenance functioning and in inadequate salvaging of resources present in the wastes, These problems need to be highlighted, discussed and overcome through political will, administrative determination, technical skills, reorientation of efforts and overcoming of barriers in decision making at all levels. Some of these problems such as in sufficient funds available with local bodies, lack of established and efficient system of collection, transportation, disposal of wastes, lack of trained and knowledgeable manpower in local bodies, inadequate employees performance monitoring, motivation, discipline to mention a few. Further, too many agencies for operation and maintenance and lack of coordination among themselves.

Across the country, many organization and individuals have found innovative ways to reduce and manage the solid wastes through a coordinated mix of practices. However, the most environmentally sound management of solid waste is achieved when these approaches meets the norms laid down by our municipalities in the implementation of the municipal solid waste (Management and handling rules). Thus, there is a need to understand the implementation issues related to solid waste management with a view to provide Eco-friendly, Sustainable and community-based solutions to waste management problems.

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Problem Statement

It is essential to know the extent of awareness on solid waste management among the public. Hence, a small attempt has been made to study the difference between rural and urban people in the awareness on solid waste management.

Materials and Methods

However, the specific objectives are 1 to analyse and compare the Gender Wise, Educational Status Wise and Income wise extent of awareness on solid waste management among the respondents in the study area; and 2 to suggest possible measures to formulate strategies to improve the knowledge and awareness for effective solid waste management in the study area.

Mayiladuthurai Block of Nagappattinam district has been conveniently chosen as the study area. Then to represent urban area, one representative wards of the Mayiladuthruai Municipality and One revenue village of the Block have been chosen. A total of 60 respondents consisting 30 respondents from urban area and 30 respondents from rural area were conveniently selected.

Analysis and Discussion

Awareness about forms of Solid Wastes

To Know the differences if any in the awareness on solid waste management between male and female, the sex wise extent of awareness about the different forms of waste in the study area has been taken for analysis, to compare the awareness level it has been categorized into three viz., High level, moderate level and low level, it is known that in the urban area, among the male respondents about 37% respondents have low level of awareness, 48% respondents are having moderate level of awareness and 15% of the respondents are having high level of awareness while among the female respondents 43% of the respondents have low level of awareness while 26% are have moderate level and 31% have high level of awareness, about the different sources of wastes, Among the rural male respondents about 42% have low level of awareness, among the female respondents 46% have low level of awareness. Further it is known that among the male respondents 15% have high level awareness while about 23% of female respondents have high level of awareness, from this it could be observed the between male and female are comparatively having more awareness than female in one side and between rural and urban, the urban people are having more awareness that the rural people.

The educational status wise extent of awareness on the different forms of waste in the study area has been taken for analysis, It is observed that in urban area, among the illiterate respondents, about 56% have low level of awareness and the rest are at moderate level, among the primary educated respondents 50% of them are at low level and rest of others except one are having moderate level of awareness about the sources of solid wastes. Whereas, among the higher educated respondents, 82% have higher level awareness and 18% have moderate level of awareness in one hand. On the other hand in the rural area, the level of awareness is directly associated to the level of education since among the primary level educated 41% are having only low level awareness where as among the higher educated, 60% are found with high level awareness and 40% are with moderate level about the different sources of solid wastes.

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With regard to the income wise extent of awareness about the forms of solid wastes among the respondents, in the urban area, the low income group people are comparatively having lesser awareness when compared to the high income people. The analysis facilitates that among the respondents whose income is less than Rs.10000 only 17% are having high level awareness and 50% are having low level awareness whereas among the high income group i.e. people with more than Rs.30000 per month are having more awareness i.e. among them only 23% are having low level awareness while 33% are having high level awareness about the sources of solid wastes. Among the rural respondents, 67% of the low income group people are having only low level awareness in one side and about 61% of the high income group people i.e. monthly income exceeds Rs.30000 have high level awareness about the sources of solid wastes.

Awareness about Sources of Solid Wastes

The sex wise analysis on the awareness on the sources of solid waste reveals that that in the urban area, among the male respondents only 15% respondents have high level of awareness, 48% respondents are having moderate level of awareness and 37% of the respondents have little level of awareness while among the female respondents 38% of the respondents have low level of awareness while 33% are have high level awareness about the different sources of wastes, Among the rural male respondents about 14% have low level of awareness, among the female respondents 21% have low level of awareness. Further it is known that among the male respondents 14% have high level awareness while about 21% of female respondents have high level of awareness, from this it could be observed the between male and female are comparatively having more awareness than female in one side and between rural and urban, the urban people are having more awareness that the rural people.

The educational status wise extent of awareness on the different sources of solid waste in the study area has also been analysed and it id noted that in the urban area, among the illiterate respondents, about 67% have only low level of awareness and the rest are (33%) at moderate level, among the primary educated respondents 47% of them are at low level and rest of others except one are having moderate level of awareness about the sources of solid wastes. Whereas, among the higher educated respondents, 73% have higher level awareness and 27% have moderate level of awareness and no one is unaware. In the rural area also the level of awareness is directly associated to the level of education since among the primary level educated 43% are having only low level awareness and 56% are at moderate level where as among the higher educated, 80% are found with high level awareness and 20% are with moderate level and no one is unaware about the different sources of solid wastes.

The income wise extent of awareness about the sources of solid wastes among the urban respondents, the low income group people are comparatively having lesser awareness when compared to the high income people. Among the respondents whose income is less than Rs.10000 only 13% are having high level awareness and 62% are having low level awareness whereas among the high income group i.e. people with more than Rs.30000 per month are having more awareness i.e. among them only 17% are having low level awareness while 44% are having high level awareness about the sources of solid wastes. Among the rural respondents, more than three fourth i.e. 77% of the low income group people are having only low level awareness in one side and about more than half i.e. 53% of the high income group people i.e. monthly income exceeds Rs.30000 have high level awareness about the of solid wastes.

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Awareness on the Effects of Solid Wastes

It is known from the sex wise analysis on the awareness on the adverse effects of solid waste that in the urban area, among the male respondents only 17% respondents have high level of awareness, 47% respondents are having moderate level of awareness and 36% of the respondents have low level of awareness while among the female respondents 44% of the respondents have low level of awareness while only 20% are have high level awareness about the effects of wastes, Further, among the rural male respondents about 42% have low level of awareness, among the female respondents still 45% have low level of awareness. Further it is known that among the male respondents 16% have high level awareness while about 12% of female respondents have high level of awareness, from this it could be observed the between male and female are comparatively having more awareness than female in one side and between rural and urban, the urban people are having more awareness that the rural people.

The educational status wise extent of awareness on the effects of solid waste in the study area indicates that in the selected urban region, among the illiterate respondents, about 77% have only low level of awareness and the rest are (23%) at moderate level, among the primary educated respondents half of them are at low level and rest of others except four are having moderate level of awareness about the effects of solid wastes. Whereas, among the higher educated respondents, 67% have higher level awareness and one – third (33%) have moderate level of awareness and no one is unaware. In the rural area also the level of awareness is directly associated to the level of education since among the primary level educated 44% are having only low level awareness and 55% are at moderate level where as among the higher educated, 70% are found with high level awareness and 20% are with moderate level and one respondent has low level awareness about the different methods of solid wastes.

The income wise extent of awareness about the effects of solid wastes among the urban respondents infers that the low income group people are comparatively having lesser awareness when compared to the high income people. From the analysis, among the respondents whose income is less than Rs.10000 only one-fourth are having high level awareness and 50% are having low level awareness whereas among the high income group i.e. people with more than Rs.30000 per month are having more awareness i.e. among them only 13% are having low level awareness while 40% are having high level awareness about the effects of solid wastes. Among the rural respondents about 60% of the low income group people are having only low level awareness in one side and about more than half i.e. 57% of the high income group people i.e. monthly income exceeds Rs.30000 have high level awareness about the of solid wastes.

Methods of Solid Wastes Management

The sex wise analysis on the awareness on the different methods of solid waste management revealed that in the urban area, among the male respondents only 14% respondents have high level of awareness, 51% respondents are having moderate level of awareness and 35% of the respondents have low level of awareness while among the female respondents 56% of the respondents have low level of awareness and 38% are have high level awareness about the methods of wastes management, Further, among the rural male respondents about 44% have low level of awareness, among the female respondents still 36% have low level of awareness. It is also known that among the male respondents 14% have high level awareness while double of them i.e. about 28% of female respondents have high level of awareness,

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from this it could be observed the between male and female male are comparatively having more awareness than female in one side and between rural and urban, the urban people are having more awareness that the rural people.

The educational status wise extent of awareness indicates that in the selected urban region, among the illiterate respondents, about 45% have only low level of awareness and the rest are (55%) at moderate level, among the primary educated respondents 42% of them are at low level and rest of others except 2% are having moderate level of awareness about the methods of solid wastes management. Whereas, among the higher educated respondents, 70% have higher level awareness and one-third have moderate level of awareness and no one is unaware. In the rural area also the level of awareness about the methods of management is directly associated to the level of education since among the primary level educated 47% are having only low level awareness and 52% are at moderate level where as among the higher educated, 67% are found with high level awareness and 33% are with moderate level about the different methods of solid wastes.

The income wise extent of awareness in the urban area infers that the low income group people are comparatively having lesser awareness when compared to the high income people. Among the respondents whose income is less than Rs.10000 only 20% are having high level awareness and 68% are having low level awareness whereas among the high income group i.e. people with more than Rs.30000 per month are having more awareness i.e. among them only 18% are having low level awareness while 54% are having high level awareness about the methods of solid wastes management. Among the rural respondents about 63% of the low income group people are having only low level awareness in one side and about 44% of the high income group people i.e. monthly income exceeds Rs.30000 have high level awareness about the different methods of solid wastes management. There is a significant difference registered in the extent of awareness on the causes, consequences and disposal of solid wastes between rural and urban areas. However, the urban respondents are having more awareness than that of rural respondents.

Conclusion

From the micro level analysis, it is observed that there is a significant difference registered in the extent of awareness on the causes, consequences and disposal of solid wastes between rural and urban areas. However, the urban respondents are having more awareness than that of rural respondents. It is suggested that proper measures to be taken to create public awareness and to bring about changes in public behaviour through development of Public awareness programs, such as Promotion of "Reduce, Re-use and Re-cycle (R-R-R)" of Waste Principle; Promotion of Public Participation in SWM Systems; Provision of Information Hot-line; Inculcation of Public Education through Group Education by Group Meetings in the community, Workshops, Exhibitions, Lecture series, Panel Discussions, etc.; Promotion of Mass Education through the Use of Print Media, Use of TV / Cable TV / Radio / Web Site, Use of Cinema Halls, Street Plays, Puppet Shows, etc., Posters, Pamphlets, Use of Public Transport System, Use of School Children, Provision of Primary School Curriculum to cover the subject, Involvement of National Cadet Corps (NCC), National Social Service, Involvement of Religious Leaders, Involvement of Medical Practitioners, Involvement of SHGs, Resident Associations and Voluntary Organizations/NGO involvement.

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CULTIVATION AND MARKETING OFMAIZE IN PERAMBALUR DISTRICT, TAMILNADU[9]

Dr. S. BALRAJ[10]

Introduction

Maize is a one of the most important cereal crop in the world agricultural economy both as food for man and feed for animals. It is a miracle crop having high yield potential. There is no cereal on the earth which has so immense potentiality and that is why it is called 'Queen of Cereals'. Maize is the only cereal which can be grown throughout the year in all three season of kharif, rabi and zaid. Maize crop is utilized in many ways like other grain crop. Over 85% of maize produced in the country consumed as human food. Several food dishes including 'Chapattis' are prepared out of maize flour and grains. Green cobs are roasted and eaten by people with great interest. The special variety called 'Pop corn' the grains of which are converted into the popped form which is the favourite's food for children's in cities. It is also a good source of feed and fodder for cattle, Poultry and piggery. The green fodder can be fed to milch cattle to boost the milk production to a considerable extent; "South African Maize" is a best suited variety for fodder. The crop has to be harvested when the grains are in milky stage, this variety is supposed to have Lactogenic effect hence specially suited for milch cattle. The digestibility of maize fodder is higher than sorghum, bajra and other non-leguminous forage crops. Maize plant does not have any problem of poisoning due to hydrocyanic acid, hence if necessary crop can be harvested and fed to cattle at any stage of its growth. The high carotene content of yellow maize is considered to be very useful in importing yellow colour to egg yok and yellow tinge to the milk. No other concentrate is yet known to substitute maize in this respect.

Objectives

1. To examine the Socio-Economic background of Sample Maize farmers in the study area.
2. To identify the Problems faced by farmers during the Maize Cultivation and Marketing of in the study area.

Methodology

The study is based on primary data collected from 120 farmers who were selected from six villages (Perali, Sithali, Thirumandurai, Sirumathur, Kunnam and Othiyam) spread over in Kunnam block of Perambalur district.

Results and Discussion

Out of the 120 respondents, 93.3 per cent of respondents are belonging to below 30 years age group of cultivator. 3.3 per cent of respondents are belonging to 30-40 years age group. 48.3 per cent of respondents are most backward community. Moreover, 15.0 per cent of respondents belong to Schedule Caste community. 79.23 per cent of respondents are engaged in agriculture and it is their main occupation. 20.8 per cent of respondents are engaged agriculture

[9] Paper presented in the **40th Annual Conference of Association of Economists of Tamil Nadu** Organized by Department of Economics, St. Joseph's College (Autonomous), Tiruchirappalli-620 002 on 2nd February, 2020.

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subsidiary Occupation. 83.4 per cent of respondents are having Nuclear family. 41.7 per cent of respondents are Upper Primary education. 29.2 per cent of respondents are Primary education. 18.2 per cent of respondents are illiterates. 7.5 per cent of respondents are having higher secondary education. 3.3 per cent of respondents are graduates. 48.3 per cent of respondents are belong to income group of up to 1000 and 36.7 per cent of respondents are in the income group of Rs.1000-2000.

Table 1 Socio-Economic Conditions of Sample Cultivator

S. No.	Characteristics	No. Respondents	Percentage
1	**Age of the respondents**		
	I. <30 years	112	93.33
	II. 30-40 years	4	3.33
	III. 40 and above	4	3.33
		120	100%
2	**Community**		
	I. Most Backward Community	58	48.3
	II. Backward Community	44	36.7
	III. Schedule Caste	18	15.0
		120	100%
3	**Occupation**		
	i. Agriculture main Occupation	95	79.2
	ii. Agriculture subsidiary Occupation	25	20.8
		120	100%
4	**Land holding**		
	I. Irrigated	20	16.6
	II. Dry land	100	83.4
		120	100%
5	**Type of family**		
	I. Nuclear family	80	66.6
	II. Joint family	40	33.4
		120	100%
6	**Educational Status**		
	I. Illiterate	22	18.3
	II. Primary	35	29.2
	III. Upper Primary	50	41.7
	IV. HSC	9	7.5
	V. Graduate	4	3.3
		120	100%
7	**Income per month (Rs)**		
	I. Up to 1000	58	48.3
	II. 1000 to 2000	44	36.7
	III. 2000 to 3000	18	15.0
	Total	**120**	**100%**

Source: Primary data

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Table 2 Problems faced by the cotton farmers in the study area

S. No.	Particulars	Number of Farmers	Per cent
1.	Lack of knowledge	31	25.83
2.	Non-availability of Material	25	20.83
3.	High cost seeds	19	15.83
4.	More incidence of Pest and disease problems	15	12.50
5.	Lack of irrigation water	12	10.00
6.	Non-availability of labour	08	06.66
7.	Poor-marketing Facilities	06	05.00
8.	The Govt. Agency not available to procure at Minimum Support Price	04	03.33
	Total	**120**	**100**

Source: Primary Data

From table 2 it could be observed that all the Maize farmers expressed severe problems in the cultivation of maize. Lack of knowledge was also one of the major problems which were expressed by (25.83) the farmers. Non-availability of Material (20.83) per cent and (15.83) per cent of High cost seeds problems were expressed the farmers. The other problems were More incidence of Pest and disease problems of (12.50) per cent, Lack of irrigation water (10.00) per cent. Nearly (5.00) per cent of respondents opined Non-availability of labour. More than (6.66) per cent and (3.33) per cent of the farmers expressed that Poor-Marketing Facilities and the Govt. Agency not available to procure at Minimum Support Price and by were also major marketing problem.

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Conclusion

The Government should provide the Minimum support price, subsidy, quality of Maize seeds, fertilizers and pesticides at a concession rates through the co-operative societies which encourage more farmers to come forward to cultivate Maize.

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A STUDY ON ECONOMICS OF BETEL LEAF CULTIVATION IN MADATHUKULAM BLOCK, IN TIRUPPUR DISTRICT[11]

Dr. C. SELVARAJ[12] & A. MUNUSAMY[13]

Introduction

The historical, The origin of betel leaf is believed to be in Malaysia or in nearby East Asian region and it is said to have been introduce to Sri Lanka and added south Asian countries. This complimentary pair entered India during early Gupta period and merged into our people. Their popularity improved steadily and became a product of common use. Their uses vary from masticator to medical and the duo's presence is notice in all society and religious ceremonies, and as an offering to Gods. Betel leaf and areca nut are regarded as auspicious symbols of hospitality, and denote an ethical, social, and legal commitment.

Betel Leaf Cultivation in India

In India, betel vine is grown as an important cash crop in southern parts, mainly in the states of Andhra Pradesh, Karnataka, Kerala and Tamil Nadu. Betel is also cultivated in Assam, Bihar, Madhya Pradesh, Maharashtra, Orissa, Meghalaya, Tripura, Uttar Pradesh and West Bengal.

The likely place of origin of betel vine is Malaysia, Indonesia, India and Sri Lanka. In India, it's an essential commercial crop of Andhra Pradesh, occupying about 3600 hectares. Betel leaf is cultivated over an area of 50000 hectares in India. In West Bengal prominent districts are –South 24 Paragons, Midnapore, Howrah, Hooghly and Nadia. The betel plant is currently extensively cultivated in India, Bangladesh and Sri Lanka.

Betel Leaf Cultivation in Tamil Nadu

In Tamil Nadu, a variety of betel leaves are cultivated at Madurai, Dindigul, Dharmapuri, Erode, Namakkal, Tirchy, Thanjavur and Tiruppur districts, Anthiyur betel, Kaniyur betel, and Karpoora Kodi, Sirugamani being particularly popular among betel chewers. A large number of farmers and other employees are involved both directly and indirectly cultivated in betel leaf on the state of Tamil Nadu.

Statement of the Problem

Indian economy has been largely based on agriculture and a variety of crops are grown. Among the crops Betel leaf is one of the most promising commercial crops capable of attracting substantial amount of foreign exchange to the country. Betel leaf, being highly perishable commodity, is to be marketed within a short span of time. To promote the cultivation of betel leaf and to develop its productivity this will enable the farmers to reach the maximum benefits. A few steps are required for the Department of Agriculture and the Government of Tamil Nadu. In this connection micro level study of the farm level is felt.

Objective of the Study

1. To analyze cost of cultivation, returns and to identify the factors influencing yield of betel leaf.

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Data and Methodology

The data which were collected through field survey were analyzed and the results and discussions were presented both descriptively and analytically. Madathukulam block was selected purposively as betel leaf cultivation was among the block in Tiruppur district found as pertinent activity in this block. From the list of villages having betel leaf cultivation in Madathukulam block from villages namely Madathukulam, Sholamadevi, Kaniyur, Karthozuvu were selected randomly. By using simple random sampling 40 farmers are selected to conduct the present study.

Name of the Variety

Three varieties of betel leaf are grown in the selected villages namely Karpoora Kodi, Sakkara Kodi and Pachai Kodi.

Table 2 Name of the Variety

Sl. No.	Variety	No. of Respondents	Percentage
1	Karpoora Kodi	16	40
2	Sakkara Kodi	17	42.5
3	Karpoora Kodi and Sakkara Kodi	6	15
4	Karpoora Kodi, Sakkara Kodi and Pachai Kodi	1	2.5
	Total	**40**	**100**

Source: Primary data

It was found that out of 40 respondents, 17 cultivated Sakkara Kodi (42.5%), 16 Karpoora Kodi (40%), and remaining 6 respondents cultivated both Karpoora Kodi and Sakkara Kodi. Only one respondent cultivated all the three varieties.

It was found that average yield per acre came to 14,500 kg per year. The average price of betel leaf per kg was Rs.110. The price varied between Rs.60 to Rs.160. Average gross income per acre came to Rs.15,95,000.

The net income or profit per acre was worked out, after deducting the cost of cultivation, and it came to Rs.7,86,000.

Problems in Betel Leaf Cultivation and Marketing

Madathukulam block betel leaf cultivators are facing lot of problems in cultivation and marketing. They are labour, pest attack, price, commission agents, rainfall, storage, and delay in getting payments.

Table 5 Problems in Betel Leaf Cultivation and Marketing

S. No.	Problems	No. of Respondents	Rank	% Obtained
1	Labour Shortage	22	I	55%
2	Price	17	IV	42.50%
3	Pest attack	12	VII	30%
4	Commission agents	21	II	52.50%
5	Rainfall	16	V	40%
6	Storage	15	VI	37.50%
7	Delay in buyers payment	20	III	50%

Source: Primary data

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All the selected betel leaf cultivators faced problems like labour (55%), commission agent (52.5%), delay in buyer's payment (50%), price (42.5%), rainfall (40%), storage (37.5%), pest attack (30%). This maximum number of selected betel leaf cultivator's problems faced by labour shortage followed by commission agent and delay in getting payment.

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DEVELOPMENT OF TOURISM IN TIRUVANNAMALAI DISTRICT – AN ECONOMIC ANALYSIS[14]

Dr. G. JAYASANKAR[15] & Mrs. M. VANITHA[16]

Introduction

Tourism in Tamilnadu, in India has flourished due to its ancient Indian heritage. A state of South Eastern India, Tamilnadu is the heart of rich Dravidian culture. Many great powers of the past including the Cholas, the Pallavas, the Pandyas and the Vijayanagara empire ruled over parts of Tamilnadu and left behind spectacular temples and monuments which tourists can see on their tours of Tamilnadu tourist places are, Chennai, Kanchipuram, Madurai, Kaniyakumari, Rameswaram, Sivakasi, Tiruchirapalli, Mahabalipuram and Tanjure. Tamilnadu is the place of Dravidian civilization and culture is considered one of the oldest in the world.

History of Tiruvannamalai Town

The names of the holy place are large in numbers. The common and popular name is Tiruvannamalai. There are other names like **'Arunachala, Arunagiri, Arunapuri, Thiruvarunai and Ganga Nagara'**. The town named often Arunachala because the Arunachala hill the town has a high status in our sacred tradition. Tiruvannamalai is an ancient city that exists since 8th century, Ellappa Nayanar the sixteenth century Tamil scholar, recorded extensively about Tiruvannamalai town in his Arunachala Puranam a Tamil literary work. There is a Sanskrit literary work called Arunachala Mahatmyam written in same period. But there is known controversy among Sanskrit and Tamil scholars, in claiming which literature was written first about the history of Tiruvannamalai. Unlike the Sanskrit version, ancient Tamil scholar Ellappa Nayanar has extensively recorded about the Tiruvannamalai from architecture and the legendary stories about king **Vallala Maharaja** of the Hoysala empire.

The king has contributed in spreading the benefit of Grivalam and Arunachala temple. This subsequent helped in the expansion of Tiruvannamalai town. **King Valla** was ruling the entire south India from Decan Plateau with Dwarasamdura as the capital and now called Halebid that lay to the north-west of Mysore. We can still see the richness of Holysala art, architecture and its unique style distinguished by a high density of details and embellishments, among the remains in Halebid.

Top Tourist Places in Tiruvannamalai District

Tiruvannamalai district has great historical as well as religious significance. There are some places of tourist's interest in Tiruvannamalai and its district.

- Arunachalaeswarer Temple
- Ramana Ashram
- Seshadri swamigal Ashram
- Yogi Ram Surathkumar Ashram

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[14] Paper presented in the **40th Annual Conference of Association of Economists of Tamil Nadu** Organized by Department of Economics, St. Joseph's College (Autonomous), Tiruchirappalli-620 002 on 2nd February, 2020.

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- Paruvathamalai at Thenmathimangalam
- Padavedu Sri Renukambal Temple at Padavedu
- Arulmeghu Balasubramaniyar Temple at Melarani
- Vedhapureswarer Temple at Thiruvathipuram in Cheyyar
- Pachieswarer Temple at Thiruvathipuram in Cheyyar
- Saneeswere Temple at Earipudur
- Sathanur Dam
- Beema falls
- Jawadhu Hills
- Mirugandanathi Watershed and
- Kamalamandalanathi Watershed etc.,

Objective of the Study

To study the performance and growth of tourism in Tiruvannamalai district.

Economic Benefits

The average number of tourist arrival from domestic and international are registered in 80233.70 lakhs persons in the period 2008 to 2018. From the period 2008 to 2018 tourist arrival in Tiruvannamalai district is very low in 528600 lakhs persons in the year 2009 and is registered very high in 10,71,086 lakhs persons in the year 2018.

Tourism can provide direct job to the community, such as tour guides or hotel housekeeping. Indirect employment is generated through other industries such as agriculture, food production and retail business. Visitor's expenditure generates income for the local community and can lead to the alleviation of poverty in countries and Tiruvannamalai town.

Social Benefits

Tourism can bring about a real sense of pride and identity to communities. By showcasing distinct characteristics of their ways of life, history and culture, tourism can encourage the preservation of traditions and culture.

Environment Benefits

Tourism provides financial support for the conservation of ecosystem and natural resource management, making the destination more authentic and desirable to visitor's. It also adds more value to the local area Tiruvannamalai tourism business.

Suggestions

Tourism in one of the important means of developing an economy and earning foreign exchange. It brings in new way of living, new culture and prosperity to our area. For many countries these is the major economy contributor to the gross domestic product. A particular around its economy are transformed forever. The development movement will continue to yield positive result.

Tiruvannamalai as rich in history and tradition combined with religion to live harmoniously more steps can be taken to promote this city as religious capital of South India. For thus transport, accommodation and conveniences to pilgrims should be improved. Making the prominent temple locations easily accessible to pilgrims is a major step to be taken for developing religious centre as tourist centres. Good roads, train facilities, lodges, dharma salas for pilgrims to stay in a comfortable way are very essential. Higher income groups, middle and low income groups pilgrim need should be taken care of in this regard.

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ECONOMIC DEVELOPMENT OF TAMIL NADU: AN OVERVIEW[17]

Dr. C. DHANDAPANI[18] & S. SELVA KUMAR[19]

Introduction

Tamil Nadu, being an industrialized and urbanized state, is among the top 3 states with respect to generation of electricity. The total installed capacity of Tamil Nadu stands at around 30200 MW as in September 2018, that derives 11500 MW of power from solar and wind energy. Tamil Nadu has the distinction of being the leader in renewable energy In India by adopting clean sources of energy and having established wind farms as early as 1995. Today it produces more wind power than Denmark and the Netherlands. The Tamil Nadu Energy Development Agency is a Tamil Nadu government promoting renewable energy sources and energy conservation activities.

The agency has largely been responsible for instigating the tremendous growth of Tamil Nadu in the development of wind power. The total installed capacity of windmills in Tamil Nadu totals to around 8700MW. Muppandal wind farm is a renewable energy source, supplying the villagers with electricity for work.

Wind farms were built in Nagercoil and Tuticorin apart from already existing ones around Coimbatore, Pollachi, Dharapuram, Kangeyam and Udumalaipettai. In March 2008, Signet Solar Inc. signed a memorandum of understanding with the State government to build a INR 20 billion thin film silicon photovoltaic module manufacturing plant in the Sriperumbudur Special Economic Zone. In June 2008, Moser Baer inked a MoU with the state government to build INR 20 billion plant for manufacturing of silicon-based photovoltaic thin film modules and allied products in the Oragadam Special Economic Zone which is closer to the Signet Solar's plant in Sriperumbudur.

The Kalpakkam Nuclear Power Plant, Ennore Thermal Plant, Neyveli Lignite Power Plant, Virudhachalam Ceramics and the Narimanam Natural Gas Plants are major sources of Tamil Nadu's electricity. It is presently adding the Koodankulam Nuclear Power Plant to its energy grid. Tamil Nadu sources some of its power needs from renewable sources with wind power contributing over 2000 MW or over 20% of the needs. Tamil Nadu is facing largest power shortage in 2013, the highest in the country, due to industrialization over the last decade. India's leading steel producer SAIL has a steel plant in Salem, Tamil Nadu. Tamil Nadu ranks first nationwide in diesel-based thermal electricity generation with national market share of over 34%.

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Objective

To understand the process of growth of Tamil Nadu economy.

Features

- Providing world-class infrastructure,
- Special emphasis on priority sectors like automobiles, bio-technology, electronic hardware and aerospace

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- Improving the quality of human resources and
- Providing attractive incentives to the investors.

Scope

- Automobile and Auto components Sector
- Renewable Energy Equipment manufacturing Industries.
- Aerospace industry and
- Bio-technology and Pharmaceuticals Sector.
- The Tamil Nadu Skill Development Mission implemented through a society has been reorganized as a Special Purpose Vehicle with participation from private sector under section 25 of the Companies Act, 1956 as a body corporate in the name, Tamil Nadu Skill Development Corporation for providing skill training through different departments.

Importance

- To position Tamil Nadu as the most preferred State for manufacturing, with a reputation for efficiency and competitiveness and to attract incremental investments of over 10% every year in Manufacturing.
- To achieve an annual average growth rate of 14% in the manufacturing sector in Tamil Nadu.
- To raise the investment in infrastructure from the existing 4–5% of the GSDP gradually to 10% by 2015 and further to 11.5% from 2019 as envisaged in the Vision 2023 Tamil Nadu document.
- To make Tamil Nadu the innovation hub and the knowledge capital of India, on the strength of world class institutions in various fields and the best human talent
- To enhance Tamil Nadu's position in high technology industries including aerospace, nano technology etc.,
- To achieve rapid industrialization of the Southern districts of Tamil Nadu
- To achieve inclusive and sustainable industrial development in Tamil Nadu
- To create gainful employment opportunities for an additional 2.0 million persons before.
- To double exports from Tamil Nadu by.

Performance of Tamil Nadu Economy

Tamil Nadu has made rapid strides in the pursuit of economic development. The State is an Information Technology and Knowledge hub with a broad-based manufacturing sector and a leapfrogging service sector. Tamil Nadu has also been in the vanguard of investing in social infrastructure and solidifying quality economic infrastructure. It has the highest credit-deposit ratio in India and it's development record in both rural and urban areas has been inclusive and equitable.

Placing development objectives at the center stage, drawing up a perspective plan for infrastructure development through the Tamil Nadu Vision 2023, pursuing policies that promote inclusive economic development, formulating schemes and programmes for employment generation, poverty reduction and social welfare have been the principal ingredients that have ignited the development process in the State to a great extent.

With the incorporation of data and information for the year 2013-14, this edition of the Tamil Nadu – An Economic Appraisal brings the publication upto date. This edition

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covers 2011-12, 2012-13 and 2013-14 The year 2011-12 was rated as good judged by all economic indicators, whereas in 2012-13 the State's economy was severely affected by drought and the general slowdown caused by global and all India factors. The year 2013-14 was a year of consolidation during which all sectors exhibited a strong revival.

Conclusion

The economic development of Tamil Nadu as activities that expand capacities to realize the potential of individuals, firms or communities who contribute to the advancement of society through the responsible production of goods and services. Economic development addresses the functioning of the microeconomics of the economy. Without economic development, economic growth is limited. The ultimate result of economic development is greater prosperity and higher quality of life; however, these goals can only be realized through sustained innovation, activities that lower transaction costs through responsive regulation, better infrastructure and increased education and opportunities for more fruitful exchange.

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LOCK INDUSTRY AND THE LIVELIHOOD OF LOCKSMITHS: A STUDY IN DINDIGUL, TAMIL NADU[20]

Dr. GUGHAN BABU AZHAGESHAN[21]

Introduction

Dindigul is a city and district headquarters in south Indian state Tamil Nadu. Dindigul has a number of historical moments. The Rock Fort being the prominent. Industries in Dindigul include manufacturing Lock, Iron Safe, and Leather, Textile Spinning, agricultural trading and Machinery, providing a major employment in the city. The district at large has two industrial estates with one of them located in the city for many lock manufacturing units.[i] The simple key-and-pin principle has persevered over the century. Dindigul is also known as "Lock City". The lock manufacturing units provide jobs and livelihood to many families spread all over the district. Handmade Dindigul Locks has reputed brand image and hence it has a huge demand in local and international markets. The Lock manufacturing industry in Dindigul is more than 500 years old and spread over places in the district. They can guarantee aspects like quality, full safety and key facilities, most importantly they are attractive and unique in design.[ii] The popular kinds of locks that are manufactured in Dindigul are Mango lock, Door Lock, Trick Lock, Bell Lock, Drawer Lock, Shutter Lock and Book Shutter Lock.[iii] Dindigul Locks are specifically purchased for Temples. Government institution and business places because of its fool proof Safety. Dindigul lock manufactures claim that the precision lever mechanism in their locks is manually assembled with unique key code and shackles are meticulous in design that gives greater resistance to anyone who tries to break in. Though there are plenty of locks available in the Indian market, yet people give first preference for reputed Traditional Dindigul Locks.

Objectives

1. To highlight issues of Dindigul lock units.
2. To examine the economic instability and unemployment among the locks miths

Database

The study is based on secondary data collected from official records, Ministry of Small Scale and Medium enterprises (MSME), and District Statistical Report. Handicraft Development Commissioners Annual report is also highly helpful.

Study Area

Dindigul is a city situated on the state of Tamil Nadu. It is located between 10° 05' and 10° 09' North Latitude and 77° 30' and 78° 20' East Longitude. This district is bound by Erode, Coimbatore, Karur and Trichy districts on the North, by Sivaganga and Tiruchi District on the East, by Madurai district on the South and by Theni and Coimbatore Districts and Kerala State on the West. It is spread over on area of 6266.64 Sq. Km.

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Indigenous and Ingenious Variety of Locks and Keys

Later day locksmiths were so ingenious that they were able to conjure up models with names like *kolaikaaran poottu* (killer lock) and *saavipudi poottu* (a lock that will not accept a wrong key). The specialty of the *kolaikaaran poottu* was a sharp knife would come out to injure the fingers if a wrong key was inserted. Such a lock was used mainly in safety lockers, cash boxes and almirahs. In the case of the *saavipudi poottu,* the wrong key would get jammed and the lock would be rendered useless. But these locks can now be found only in old mansions of the Chettinadu region, or in museums. There are also 'trick locks' and 'bell locks' that bear the Dindigul stamp. 'Trick locks' use a unique combination of the key's position and the number of keys - a bell embedded in the lock will ring when a key is inserted to lock or unlock it. Apart from the 'special locks', the most famous of Dindigul locks are the *thotti poottu* (cradle lock) and *maanga poottu* (mango lock), which is still available several sizes. The lock-making unit on the Dindigul makes locks for bank lockers. "These locks can be opened only with a combination of six keys and the locker will not open if a wrong sequence of keys is used," Trust was the industry's hallmark. Even now, all temples and many government offices in Tamil Nadu use the Dindigul lock alongside surveillance cameras and burglar alarms. The Navdeep Button Lock Is one of the type of Mango Padlock. The Sugu Button Lock Is one of the type of Mango Padlock. The Raj Round Lock Is one of the type of Mango Padlock. The Nataraj Grand Master Lock is one of the types of Mango Padlock. Padlocks are portable locks with a shackle that may be passed through an opening such as a chain link, and hasp staple to prevent use, theft, vandalism or harm. A locker is a small, usually narrow storage compartment. They are commonly found in dedicated cabinets, very often in large numbers, in various public places such as locker rooms, workplaces, middle and high schools, transport hub and the like. They vary in size, purpose, construction, and security.

Uniqueness of Dindigul Locks

They are usually equipped with a lock, and at least a facility for padlocking. It's usually intended for use in public places, and intended for the short- or long-term private use of individuals for storing clothing and other personal items. Users may rent a locker for a single use or for a period of time for repeated use. Some lockers are offered as a free service to people partaking of certain activities that require the safekeeping of personal items.[iv] Simple Locker locks - The Lockers are simply used for secure our valuable item. Used in Bank Lockers, School Lockers, brief cases and Cupboard, Saishive Temple Locks, Brass and Door Locks: Side Lock, Centre Lock, Shutter Locks Detail: Types Side Lock: The Side Lock models of shutter locks have only one side of rod. This simple difference is separated as two models of shutter lock. Centre Lock: In this model we have two models of rods. Nithra Locks, Description: An ancient design marvel comes with two key holes to confuse burglar, A wrong key inserted gets locked and a release key is required to free the wrong key.[v] Visithra Locks: Description: Highly advanced craftsmanship designed since ages of kings for safe guarding their wealth. Visithra comes with 3 hierarchy keys designed with specific open and lock mechanisms. Bullet Locks: Description: it is a pride lock assembled to the main door of Dindigul rock fort in the year 1605. Exclusively designed for ancient and modern templates. Highly safe and heavily built and robust in design, the Bullet locks are manually assembled for the needs and wants of the customers.[vi]

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Features of the Keys

Varieties of locks - seven and nine levers, One is a simple lock with two keys. Then, there is another for which there are two different sets of keys; another variety has three different sets of keys – one to lock, another to open and a third one that can perform both functions. Then, there is the key-hole plate lock, in which an iron plate is used to cover the key hole. The beauty of this lock, it's the lock can be locked or opened only when the plate is kept in a particular position. Users can change the position of the plate, the keys won't work. Something likes a number-combination lock.[vii] "Those locks came much later. The Dindigul lock makers have a never-ending bag of tricks as they constantly innovate. If anyone tries to open the lock with a duplicate key, the key will get stuck in the keyhole and users will need to use the master key in the second keyhole and only then can the duplicate key be removed. The problem with the wholesale business now, the retailers pay for the locks only when they sell them. Till then, there is no money coming in.

The Customer Profile

The Dindigul locks are bought predominantly by government offices, especially the treasury offices and all the proprietary, family-owned businesses that have godowns and where the family patriarch is still in control of matters.[viii] The bigger locks, especially those weighing around 2.5 kg, are bought by temples, for the huge main doors. Adapting to changing tastes, Dindigul lock-makers also produce door locks made of brass. There are a number of machine-made parts in these locks, even though it is still labour-intensive. The door lock weighing nearly 18 kg, a little over 30 cm high and 36 cm wide, which are used by huge temples.[ix]

The Dindigul Lock Worker's Industrial Co-operative Society Limited

Established in 1957, The Dindigul Lock Worker's Industrial Co-operative Society Ltd. has made a name for itself in the list of top suppliers of Locks in India. The supplier company is located in Dindigul, Tamil Nadu and is one of the leading sellers of listed products. The Dindigul Lock Worker's Industrial Co-operative Society Ltd. is listed in Trade India's list of verified sellers offering supreme quality of Almirah Locks, Trick Locks, and Export Locks. The best quality products and service provided. Some efforts to infuse life into the industry are being attempted. The Dindigul Lock Workers' Industrial Cooperative Society, established in 1959, was renamed the Dindigul Lock, Hardware and Steel Furniture Workers' Industrial Cooperative Society (DICO) in 2013. DICO has made an application for the Geographical Indication (GI) tag for Dindigul locks, which is being processed by the GI Registry. The society, which was formed with 106 workers, has only 13 members in it today, and most of them are past the age of 55.[x]

Numerous Risks in the Lock Industry

Lock-making spread around Dindigul in areas like Nallampatti, Paraipatti, Perumalkovilpatti, Kammalapatti and Nagal Nagar. Around 250 lock-making units in Nallampatti were there. Dindigul locks were in good demand then. Today, there are seven units and only a couple of them employ two or more workers. Breaking a lock was rare when Dindigul locks were used. Thieves used to break the walls instead of locks to gain entry into a house. Now, people have to install surveillance cameras, besides improvised locks," the artisans' works under a thatched roof that lets in rain and sunshine, perhaps symbolic of the state of Dindigul lock industry.[xi] The reasons for the decline in the lock-making tradition of the region are many - the refusal of

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artisans to adopt modern technology; the absence of documentation, research and development; an unorganized workforce paid poor wages with the consequent disinterest among younger workers to learn the craft; the invasion of cheaper and lightweight locks made by machines, especially from China; and the higher cost of handcrafted locks.[xii]

The Impact of GST

The imposition of 18% Goods and Services Tax (GST) has also hiked the price of Dindigul locks. A box lock, which was selling at Rs.4,500 before costs Rs.5,400 now; the mango lock costs Rs.418 instead of the previous Rs.350. It's also easier to get Chinese locks with three keys at half the price. Even as the Dindigul lock-makers are fighting to stay in business against mass-produced machine-made locks, there is another threat to their business – the Goods and Services Tax that came into effect. In 2012, the former Tamil Nadu government exempted hand-made locks from value-added tax. Now, the lock-makers fear they could fall in the 18 per cent tax bracket, which could completely wipe them out of business. They have approached the State government through the Dindigul Chamber of Commerce and hope there will be some action on this front. The enterprises here are concentrated in the tiny and small-scale sector. An expert in making the mango lock. The majorities of the locksmith who remain in Dindigul make levers and only assemble them in readymade boxes, which are nickel coated and sold for 'fancy prices'.[xiii]

A Massive Blow of Lock Industry

It is a buyers' market for the Dindigul lock. Traders refuse to revise prices for lock industry. There used to be an annual price revision but the prices have remained static in the last five years. The 2009 strike for wage revision was a huge blow to the industry. DICO also plans to set up an assembly line to speed up production without compromising on traditional techniques. "Artisans will modernize and simplify the lock-making process to attract youngsters," In the meanwhile, the last generation of Dindigul's lock makers seem to be toiling their way into history.[xiv] Artisans learnt the craft from his father. Their children have moved on to greener pastures though. "A lock is not a perishable commodity, so there is no repeat sale. Handmade locks are costly and bought only by those who realize their value." An artisan earns Rs.300 to Rs.350 a day but feels this is not adequate. Their Wages are better in the construction industry but, they cannot move out of lock-making. Till 15-20 years ago, there were 300-400 workers producing these locks. It is hard, tiring work, with the workers often at their workbench in a thatched shed by as early as 6 o'clock in the morning. Barring short breaks for a cup of tea and a quick lunch, they continue working, ending most days at 7 pm. They had learnt the skill from their forefathers, but their children are not keen on this drudgery. The artisans can make about five locks a day. They learnt this trade quite by chance and they can do no other work now. The craftsman will pass on his skills to his children? They are not interested. It is too much of hard work. Compare with other profession is much easier lifestyle, and they earn more than artisans does and works shorter hours.

Issues of Machine made Locks

It is the same story across Dindigul Lock-making is a dying skill mainly because of the hard manual labour involved and also because machine-made locks – which those making Dindigul locks call "Aligarh locks" – are much cheaper. If a machine-made Aligarh lock costs around Rs.100, a similar sized hand-made Dindigul lock will cost about Rs.200. but it's proud

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of the Dindigul locks firm makes. The Dindugul locks are now coated with nickel and chromium because of popular demand. After a few years, when the plating wears off, the locks will turn to its natural color, black.

Conclusion

The indigenous products and its unique technology is gradually disappeared in this region, the main reason is the using machine made products is not good quality but its cost very cheap include the Chinese made lock products is also dominant and occupied each and every corner in the national and domestic level. At the same time the native locksmith's unemployment issues, their remuneration problems, increasing of raw materials cost, family expenses and other needs also one of the major reasons of decline of this lock industry. Government should promote to development of these products and appreciate to buy their own office utilize, to encourage these products distinctiveness, especially advertise to every state and promote to entire marketplace. To encourage new publicize system and supported decent packages of artisans wages etc. The common people should also give confidence to purchasing these ingenious products. It is definitely will helpful of future development of this lock industry.

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AN ECONOMIC ANALYSIS OF TRIBAL PEOPLE IN NAMBAKKAM VILLAGE INTHIRUVALLUR DISTRICT OF TAMIL NADU[22]

Dr. A. VIJAYAKANTH[23] & Dr. (Mrs). D. SUNDARI[24]

Introduction

Understanding the vulnerable communities, in terms of their economic deprivation and social backwardness within the Indian social structure has been the focus of many scholarly studies with an inter-disciplinary perspective. A closer look at internal economic differentiation and social stratification of a particular vulnerable group assumes significance, primarily from the point of its responsiveness to state welfare measures, as well as of assessing the impact of capitalist incursions into their indigenous economies, which arguably affects different sections differently.

The problems of tribes of India can broadly be classified into the following categories:

1. Socio-Cultural problems,
2. Political-Constitutional problems,
3. Economic problems, and
4. Protection of tribals from exploitation.

Review of Literature

Pramod Kumar (2001), in his study on the levels of living of Kurmba tribes of Nilgiris, he had analysised about the pattern of asset, income, and the extent of inequalities. He had also measured the poverty level of these tribes. The finding reveals that the existence of inequalities was higher, about 56 per cent of the income are received from the farm employment. As such about 32.27 per cent of the kurmba tribes sample households are below the poverty line. It was also found from his study that about 90.20 per cent were indebted.

Nadkarni (2002), presented the relationship between poverty, environment and development. It is quite complex and not amenable to easy generalization. He developed a vicious circle (poverty-environment-degradation- more poverty). In a country like India, the environment is a source of livelihood for many, particularly for the poor. Environmental degradation has tremendous human costs. It hits the poor most and directly too. He concluded that environmental degradation was the main reason for the poverty among tribals.

Statement of the Problem

Earlier days the tribal economy was self-supporting subsistence economy. They were satisfied with their limited wants which were easily by hunting, food-gathering, minor forest produce, primitive cultivation etc. In the course of time with the development the rights of tribes on forest were reduced, the dependency on the forest also became minimal and they were forced to work as wage earners for their livelihood. In some cases they have to work even as bonded labourers. A few in the primitive areas reverted to shifting cultivation while

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some left the forest habitat and migrated to urban areas in search of jobs and became slum-dwellers facing all the miseries and agonies of the urban poor.

Therefore, they were not educated, and the children themselves were not interested to go to school. Because of these social and economic problems the majority of tribes still remain backward and undeveloped.

Objectives of the Study

To study the socio-economic characteristics of tribals in the study area.

Hypothesis

There is no relationship between income and standard of living of the tribal respondents.

Methodology

In order to determine the socio-economic conditions of tribals in Thiruvallur District the primary data are collected from 50 respondents of Nambakkam village in Thiruvallur District.

Scope of the Study

The existence of socio-economic inequalities in underdeveloped countries is abysmal. These inequalities are mainly due to low rate of development, which is influenced by economic as well as non-economic factors. The latter leads to the inequalities in the distribution of asset, income and consumption and hence causes variations in the standard of living of different sections of society. One such section of society is tribal society. The present study aims to work out the extent of relative as well as absolute inequalities among the tribal community in Thiruvallur district of Tamil Nadu. The tribal development programmes were implemented in this area. A new work ethic, development ethos and set of value systems forged to spearhead, energize and mobilize society for management of socio-economic transformation at the grass root level.

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Findings

It was found that majority of the respondents are in the age group of 30-50 years. Most of the respondents are illiterate in the study area. The monthly income of the respondents in the study area ranged between Rs.3000 and Rs.6000. The tribal people in the study area have poor socio-economic background. The most important and urgent requirement of the respondents is road facility and electric power to their houses.

The tribal regions are amongst the least developed regions in the country. It is also highly appropriate that the future development of Indian Agriculture is critically dependent on the development of agriculture in the tribal regions. Many tribes have come to symbolize the most victimized segments of societies. It is a strange paradox that although they inhabit the most resource-rich regions of the world, many of them are in a state of impoverishment. They are the most severely affected victims of induced development, such as the establishment of mega - hydroelectric projects, conservation through parks, sanctuaries and bio-reserves, mining and allied activities, urbanization and industrialization, ecotourism projects and so on.

AN ANALYSIS OF CROP DIVERSIFICATION IN TAMIL NADU[25]

Dr. L. GANESAN[26] & Mrs. S. DHANALAKSHMI[27]

Introduction

Indian agriculture has undergone a radical transition from traditional to high-value agriculture during recent years. The economy has also witnessed shifting of consumption pattern from traditional cereals to a more holistic and nutritious diet of fruit and vegetables, milk, fish, meat and poultry products, and it is due to rapid growth of the economy. Hence, agricultural diversification towards high-value crops has been instituted within Indian agriculture. The agricultural sector in India still contributes to the overall growth of the economy and provides livelihood and food security to a majority of the population. Indian farm planning generally focused on optimal diversification with respect to risk and uncertainties where, the risk-management strategies combined production of crop, marketing of goods, financial and environmental responses of the production of farm firm. A diversified farm is one, which has several production enterprises or sources of income. Agricultural diversification is an important mechanism for economic growth. It depends, however, on there being opportunities for diversification and on farmers' responsiveness to those opportunities. Agricultural diversification can be facilitated by technological breaks-through, by changes in consumer demand or in government policy or in trade arrangements, and by development of irrigation, roads, and other infrastructures. Conversely, it can be impeded by risks in markets and prices and in crop-management practices, by degradation of natural resources, and by conflicting socio-economic requirements - perhaps for employment generation, or for self-sufficiency or foreign-exchange-earning capacity in particular crops or livestock or fishery or forest products.

The Structure of Agriculture Sector in Tamil Nadu

The average size of individually held farms in Tamil Nadu is only 0.91 hectares, with over half the farms smaller than 0.5 hectares. Nearly three-quarters of farms are smaller than 1 hectare, accounting for only 30.2 per cent total cultivable land. In comparison, the average farm size in India is 1.41 hectares, with 62 per cent of farmers holding less than 1 hectare. Tamil Nadu is one of the driest states in India, averaging only 925 milli meters of rainfall a year. The state's dry season lasts five months (January through May) even in good years, and severe droughts occur in 3 of 10 years, severely limiting cultivation of crops between June and September.

Crop Diversification

Crop diversification is a procedure to give a wider choice in the production of variety of crops in a given area so as to expand production related activities on various crops. It is actually a shift from the dominance of one crop to number of crops to meet ever increasing demand of cereals, pulses, horticultural products, oil seeds etc. The present study has tried to

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investigate whether the introduction of different kinds of asset creation work related to agriculture has helped the farmers of Tamil Nadu to take any initiative to move towards crop diversification or not. The marginal and small farmers had played an effective role in crop diversification in Tamil Nadu since 2005 and local infrastructure had supported this diversification.

Statement of the problem

Agriculture sector face major constraints such as growing water scarcity, increasing land degradation, declining farm sizes, and rising costs of labour. Per capita availability of water resources in Tamil Nadu is only 900 cubic meters a year, compared with 2,200 cubic meters for all of India. Irrigation through a combination of canals, wells, and tanks increases the reliability and availability of water for farming and is essential for cultivating crops in much of the state. But the seasonality and scarcity of supply limit cultivation to only one crop per plot for most of the state. The agricultural sector faces increasing competition for water from industry and domestic users and intensifying interstate competition for surface water resources. In many parts of the state, the rate of extraction of groundwater has exceeded recharge rates, contributing to falling water tables. Water quality is also a growing concern. Effluents discharged from industries and heavy use of pesticides and fertilizers have had a major impact on surface water quality, soils, and groundwater. Crop diversification can be regarded as a proper measure of multiple cropping on a specific plot of arable land. Enhancing crop diversification is primarily the decision of the farmer because crop diversification is the solution to several problems associated with agriculture including sustainability of farm income, agricultural employment and management of soil productivity and reduction in fluctuation and uncertainty of farm earning. But it is very much dependent on local infrastructure like 'irrigation facility' and 'road connectivity'. To propel the agriculture sector towards further growth and development, it is imperative to identify the levels of crop diversification after implementation of crop production at the district level for making specific strategies. In this context, the present study will analyse the trends and extent of crop diversification in terms of area and crop production of food grain and non- food grain crops in Tamil Nadu.

Significance of the study

Indian economic conditions for agro-climatic regional planning have documented the zones of maximal opportunity for diversified agriculture on small and marginal farms only. Encouraging farmers to diversify to higher value commodities will be a significant factor for higher agricultural growth, particularly in rain-fed areas where poverty is high. Moreover, considerable potential exists for expanding agro-processing and building competitive value chains from producers to urban centers and export markets. While diversification initiatives should be left to farmers and entrepreneurs, the Government can, first and foremost, liberalize constraints to marketing, transport, export and processing. It can also play a small regulatory role, taking due care that this does not become an impediment. Agricultural diversification has become a significant component for realizing higher output growth, higher farm income, employment generation, sustainability of natural resources and poverty alleviation. Therefore it is significant to study about crop diversification in Tamil Nadu and the study deals with the same.

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Objectives of the study

1. To study the trend in area under cultivation of food grain and non-food grain crops in Tamil Nadu
2. To study the growth of food grain and non-food grain production in Tamil Nadu.
3. To analyze the necessity and constraints for crop diversification in Tamil Nadu.

Methodology

This study is based on secondary data collected from published reports. Growth rate and percentage are used to find out the growth performance of selected crops and its diversification in Tamil Nadu.

Analysis and discussion

Table 1 Area of Food grains and Non Food grains in Tamil Nadu

(000 Hectares)

Year	Rice	Coarse cereal	Pulses	Total Food grains	Growth rate	Oil seeds	Cotton	Sugarcane	Non-Food Grain	Growth rate
1998-99	2274.9	764.1	637.1	3676.1	0.38	995.7	218.6	306.2	1520.5	0.61
1999-00	2163.6	804.4	860.4	3828.4	4.14	998.8	178.3	316.4	1493.5	-1.776
2000-01	2080	732.9	687.9	3500.8	-8.56	839.4	169.9	315.3	1324.6	-11.31
2001-02	2060	706	734.9	3500.9	0.00	781	187.8	321	1289.8	-2.63
2002-03	1516.5	712.5	527.4	2756.4	-21.27	592.5	75.6	261.4	929.5	-27.93
2003-04	1396.6	930.6	537	2864.2	3.91	695	97.8	192.1	984.9	5.96
2004-05	1872.8	823.8	599.3	3295.9	15.07	715.7	129.4	232	1077.1	9.36
2005-06	2050.5	741.1	525.3	3316.9	0.64	709.9	140.5	335.4	1185.8	10.09
2006-07	1931.4	698.2	536.5	3166.1	-4.55	592.4	100.3	391.2	1083.9	-8.59
2007-08	1789.2	698.5	609.8	3097.5	-2.17	659.3	99.3	354.2	1112.8	2.67
2008-09	1931.8	724	536.1	3191.9	3.05	585.4	114.5	308.9	1008.8	-9.35
2009-10	1845.5	652.7	534.8	3032.9	-4.98	494.9	104.1	293.2	892.2	-11.56
2010-11	1905.7	631.3	636.8	3173.9	4.65	449.4	122	316	887.4	0.54
2011-12	1903.8	638	668.5	3210.4	1.15	449.2	133	346.4	928.6	4.64
2012-13	1493.1	624.4	507.6	2625.1	-18.23	388.5	128	347.2	863.7	-6.99
2013-14	1725.7	898	815.8	3439.5	31.02	408.2	152	313.3	873.5	1.13
2014-15	1795	859.3	883.9	3538.1	2.87	415	187	263.1	865.1	-0.96
2015-16	2000.2	867.2	879.7	3747	5.90	407.1	142	252.3	801.4	-7.36
2016-17	1442.8	718	785.1	2945.9	-21.37	323.1	142	218.3	683.4	-14.72

Source: Handbook of Statistics, RBI 2017-18

The above Table 1 shows the Area under cultivation of Food grains and Non Food grains in Tamil Nadu during 1998-99 to 2016-17. In 1998-99 the area under cultivation of food grains like rice, coarse cereals and pulses was 3676.1 thousand hectares and area under cultivation of non food grains like oilseeds, cotton and sugarcane was 1520.5 thousand hectares. Then there has been fluctuations in both food grain and non food grain crops in all the years. Rice was the major food grain and was cultivated in large area among three selected

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crops and oil seed was the major non food grain crop in Tamil Nadu. During the last few years i.e., since 2009-10 there has been decline in area under cultivation of non-food grain crops and it has reduced to around 800 thousand hectares in 2015-17. At the same time the area under cultivation of food grains crops stays around at 3000 hectares and it shows that still food crops holds the dominant position in Tamil Nadu. In 2016-17 there has been fall in both food grain and non food grain crops in the state.

Production of major Food grain and Non-Food grain Crops

Table 2 Production of major Food grain and Non-Food grain Crops in Tamil Nadu (000 tonnes)

Year	Rice	Coarse cereals	Pulses	Food-grains	Oilseeds	Cotton	Sugar Cane	Non-Food grain
1998-99	8141.4	973	304.3	9418.7	1642	406.3	33764.8	35813.1
1999-00	7532.1	1065.9	370.8	8968.8	1476.4	339.5	34285	36100.9
2000-01	7366.3	937.8	312.7	8616.8	1441.7	316.6	33188	34946.3
2001-02	6584	834	313.9	7731.9	1313	326.1	32620	34259.1
2002-03	3577.1	682.8	182.2	4442.1	760	83.5	24165.4	25008.9
2003-04	3222.8	983	200.8	4406.6	963.6	122.7	17656	18742.3
2004-05	5062.2	868	245.6	6175.8	1061.1	194.8	23396	24651.9
2005-06	5220	730.2	177	6127.2	1152.9	213.3	35106.5	36472.7
2006-07	6610.6	1361.9	290.5	8263	1083.5	220.9	41124	42428.4
2007-08	5040.2	1357.1	185	6582.3	1146.7	200.7	38071	39418.4
2008-09	5182.7	1755.1	164.5	7102.3	1043	187.7	32804.4	34035.1
2009-10	5665.2	1642	204.1	7511.3	939.6	225	29745.6	30910.2
2010-11	5792.4	1556.5	246	7594.9	933.1	450	34251.8	35634.9
2011-12	7458.7	2323.8	369.3	10151.8	1113.7	450	38575.7	40139.4
2012-13	4049.9	1333	209.9	5592.8	816.9	500	33919.2	35236.1
2013-14	5349.8	2819.7	613.8	8783.3	964.2	408	32454.1	33826.3
2014-15	5839	2974	647.2	9460.2	961.1	786	24462.8	26209.9
2015-16	7517.1	3406.6	554.8	11478.5	932.2	369	25494.1	26795.3
2016-17	2369.4	1345.2	427.1	4141.6	604.1	359	18987.6	19950.7
2017-18	7277.7	3581.8	549.7	11409.2	1006.4	488	16535.6	18030.0
CAGR				**1.01**				**-3.55**

Source: Ministry of Agriculture & Farmers Welfare, Government of India.

The above Table 2 shows the Production of major Food grain and Non-Food grain Crops in Tamil Nadu during 1998-99 to 2017-18. Among food grains, rice is the major crop in Tamil Nadu with highest production during 1998-99 to 2017-18. It was 8141.4 thousand tones in 1998-99 and was 7277.7 thousand tones in 2017-18. Among non-food grain crops, sugarcane is the major crop in Tamil Nadu with highest production during 1998-99 to 2017-18. It was 33764.8 thousand tones in 1998-99 and was 16535.6 thousand tones in 2017-18. Overall total food grains was 9418.7 thousand tones in 1998-99 increased to 11409.2 tonnes in 2017-18 which was 1.01 per cent of CAGR. Then the non-food grain production was 35813.1 thousand tones in 1998-99 and it decreased to 18030.0 thousand tones in 2017-18 which was

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-3.55 per cent of CAGR. This shows that while there has been increase in food grain production the non-food grain production has shown a decline during the study period.

Need for crop diversification in Tamil Nadu

Diversification of crop has immense potential as an economic driver within the agricultural sector which may prove to be of paramount consequence in meeting the challenges which ensued in the post-green revolution scenario. In view of shrinking agricultural land and operational holdings which are attributable to the expansion of urban areas and, high growth rate of population, along with changes in consumer food habits, the farmers are straining to include or substitute additional high value crops in to the cropping system (Sanjeev Kumar and Sakshi Gupta, 2015). These factors highlight the necessity of crop diversification especially in Tamil Nadu.

- Crop diversification leads to better use of land, labour and of farmer in agriculture sector in Tamil Nadu.
- Through adoption of crop rotations, steady employment of farm and family labour and more profitable use of equipment are obtained in diversified farming in Tamil Nadu.
- The farmer and labour will be engaged all the year round in different activities.
- Crop diversification helps to lessen the risk of crop failure and market price of the production.
- The agricultural diversification helps achieve food security and improved human nutrition and increased rural employment.

Constraints of agricultural diversification in Tamil Nadu

The major constraints in crop diversification are due to the following reasons in India and Tamil Nadu:

Over 60 per cent of the cropped area in the country is completely dependent on rainfall. In Tamil Nadu conditions are not favorable in terms of poor basic infrastructure like rural roads, power, transport, communications etc. Alongside host of diseases and pests affecting most crop plants and decreased investments in the agricultural sector over the years also act as constraint for agricultural diversification in Tamil Nadu. Sub-optimal and over-use of resources like land and water resources, cause a negative impact on the environment and sustainability of agriculture. Also there is inadequate availability of seeds and other inputs for improved cultivation and there is fragmentation of land holding which is less favourable for modernization and mechanization of agriculture.

Given the constraints, diversification into higher value, less water-intensive products, such as fruits, vegetables, spices, and livestock products, may be one of the most promising sources of agricultural growth. Tamil Nadu's agro-climatic conditions are well suited for diversified agriculture. Rapidly increasing incomes and changing patterns of food demand also provide strong impetus for diversification. Increased agricultural diversification and private investments in processing for many of the higher value agricultural commodities are likely to generate new rural non farm employment opportunities and contribute to higher rural incomes.

Conclusion

The kinked growth rate in the second phase of Green Revolution reveals that all the states made a remarkable progress during this period. In this time Tamil Nadu was among the

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best performing states. The cropping pattern in Tamil Nadu is mainly biased towards food grain crops. But a change in cropping pattern is observed in favour of some non-food grain crops especially during the post-reform period. The non-food grain crops in Tamil Nadu experienced an increasing trend of crop diversification. But then again it decreased, showing a fluctuating condition. Considering the agricultural situation in Tamil Nadu, there is a need to increase crop diversification for the betterment of the farming community and agriculture sector.

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A STUDY ON CHANGING PATTERN OF PUBLIC EXPENDITURE IN TAMIL NADU[28]

P. ANBALAGAN[29] & M. LAKSHMIPRIYA[30]

Introduction

Public expenditure literally means expenditure or expenditure that is contributed by the government to increase or benefit the public. In other words, public expenditure is expenditure issued by public authorities - central, state and local - to meet the common needs of citizens or to promote their economic and social welfare, which can encourage growth by financing basic public services such as security, infrastructure, health, transportation, energy and education. Emerging and changing public spending patterns with special emphasis on the state of Tamil Nadu.

Table 1 Growth of Total Public Expenditure of Tamil Nadu (Rs. in lakhs)

Year	Total Public Expenditure	Marginal increases (Rs.)	Annual Growth Rate (%)
1985-86	244975	23942	10.83
1986-87	277570	32595	13.31
1987-88	337482	59912	21.59
1988-89	376304	38822	11.50
1989-90	473079	96775	25.72
Average	253034.5	LGR	34.51
1990-91	564129	91050	19.25
1991-92	867952	303823	53.86
1992-93	854252	-13700	-1.57
1993-94	918716	64464	7.55
1994-95	908353	-10363	-1.13
1995-96	1091057	182704	20.11
1996-97	1306489	215432	19.75
1997-98	1495085	188596	14.44
1998-99	1769740	274655	18.37
1999-2000	2072783	303043	17.12
Average	1184855.6	LGR	29.71
2000-01	2175244	102461	4.94
2001-02	2155697	-19547	-.90
2002-03	2568770	413073	19.16

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Year	Total Public Expenditure	Marginal increases (Rs.)	Annual Growth Rate (%)
2003-04	2527094	-41676	1.62
2004-05	2915487	388393	15.37
2005-06	3200867	285380	9.79
2006-07	3826497	625630	19.55
2015-16	4297501	471004	12.31
2016-17	5540256	1242755	28.92
2017-18	5929528	389272	7.03
2018-19	3513694.1	LGR	19.18

Source: Tamil Nadu Statistical Report

From Table 1, we can easily explore that the public expenditure of Tamilnadu in the second period 1990-91 to 1999-2000, the value of amount Public Expenditure was Rs.564129 lakhs in 1990-91 and it touched the highest value of Rs.2072783 lakhs in 1999-2000. The average value of total public expenditure is Rs.1184855.6 lakhs per year. The annual increases have increased to Rs.303823 lakhs in 1991-92 and then it has decreased to Rs.13700 lakhs in 1992-93 and it has increased to Rs.64464 lakhs in 1993-94. It has goes declined to Rs.10363 lakhs in 1994-95 and annual increases have increased to Rs.303043 lakhs in 1999-2000. The highest annual growth rate is 53.86 per cent in1991-92.

In 2000-01, the value of Total Public Expenditure was Rs.2175244 lakhs and it was decreased in the next year was Rs.2155697 lakhs in 2001-02. It has increased to Rs.2568770 lakhs in 2002-03 and has decreased to Rs.2527094 lakhs. In the next year 2003-04, has increased to Rs.2915487 lakhs and it touched the highest value of Rs.5929528 lakhs in 2009-10. The average value of amount of total Public expenditure is Rs.3513694.1 lakhs per year. The linear growth rate comes about 19.18 per cent. The annual increases has comes up to Rs.1242755 lakhs in 2008-09.

The value of amount of Development Expenditure of Tamil Nadu was Rs.82773 lakhs in 1980-81 and it touched the highest value of Rs.344262 lakhs in 1989-90. The average value of amount of Development Expenditure is Rs.185677.0 lakhs per Year. The linear growth rate comes about 35.10 per cent. The amount of marginal increases was Rs.18567 lakhs in 1981-82 and has decreased in the next year 1982-83 Rs.18068 lakhs. Then it goes up to Rs.22809 lakhs in 1983-84 and it has declined was Rs.21169 lakhs in 1984-85. And it has increases of Expenditure amount was continuously to has decreased Rs.14604 lakhs in 1985-86. Then its value of amount of increases expenditure of Tamil Nadu was Rs.22817, it increased continuously and reached Rs.71071 lakhs in1989-90.

The trend of public expenditure in Tamilnadu state has witnessed that there is a wide fluctuations in the past three decades and it is essential to put more effort on streamlining the investment measures of public investment (expenditure) in order to achieve the sustainable growth in the state. For better understanding the public expenditure of Tamilnadu, the data extracted from the Tamilnadu Statistical report 2009-10, with respect to developmental expenditure and non-developmental expenditure, as shown in Table 2 and Table 3 respectively.

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Table 2 Growth of Development Expenditure of Tamil Nadu (Rs. in lakhs)

Year	Total Public Expenditure	Marginal increases Rs.	Annual Growth Rate (%)
1980-81	82773	-	-
1981-82	101340	18567	22.43
1982-83	119408	18068	17.83
1983-84	142217	22809	19.10
1984-85	163386	21169	14.89
1985-86	177990	14604	8.94
1986-87	200807	22817	12.82
1987-88	251396	50589	25.20
1988-89	273191	21795	8.67
1989-90	344262	71071	26.02
Average	185677.0	LGR	35.10
1990-91	407906	63644	18.49
1991-92	676404	268498	65.82
1992-93	624396	-52008	-7.69
1993-94	622696	-1700	-.27
1994-95	623776	1080	.17
1995-96	728985	105209	16.87
1996-97	863713	134728	18.48
1997-98	944852	81139	9.39
1998-99	1078265	133413	14.12
1999-2000	1195964	117699	10.92
Average	776695.7	LGR	21.47
2000-01	1242022	46058	3.85
2001-02	1191944	-50078	-4.03
2002-03	1423567	231623	19.43
2003-04	1320516	-103051	-7.24
2004-05	1513684	193168	14.63
2005-06	1708891	195207	12.90
2006-07	2082310	373419	21.85
2015-16	2349693	267383	12.84
2016-17	3191564	841871	35.83
2017-18	3233095	41531	1.30
2018-19	1925728.6	112062	17.81

Source: Tamil Nadu Statistical Report

During the second period 1990-91 to 1999-2000, the value of amount of Expenditure of Development Expenditure was Rs.407906 lakhs in 1990-91 and it touched highest value of

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Rs.676404 lakhs in 1991-92. It has goes to declined was Rs.622696 lakhs in 1993-94 and then also increased was Rs.623776 lakhs in 1994-95. It touched the highest value of Rs.1195964 lakhs in 1999-2000. The average value of amount of Development Expenditure is Rs.776695.7 lakhs per year. The linear growth rate works out to 21.47 per cent. The increases of expenditure amount increased to Rs.268498 lakhs in 1991-92. The highest annual growth rate is 65.82 per cent in1991-92.

In 2000-01, the value of amount of expenditure of Development Expenditure was Rs.1242022 lakhs. It has decreased was Rs.1191944 lakhs in 2001-02 and it increased with some fluctuations. It has touched the highest value of Rs.3233095 lakhs in 2009-10. The linear growth rate comes about the 17.81 per cent. The average value of amount expenditure of Development Expenditure is Rs.1925728.6 lakhs per year. The increases amount of expenditure comes up to Rs.2082310 lakhs in 2006-07. The highest annual growth rate is registered in 35.83 per cent in2008-09.

The value of amount of expenditure of Non-Development Expenditure of Tamil Nadu was Rs.32452 lakhs in 1980-81. It continuously increased and touched the highest value of Rs.128817 lakhjs in 1989-90. The average value of amount of expenditure of Non- Development Expenditure is Rs.67357.5 lakhs per year. The linear growth rate comes about 33.00 per cent. The increases amount of expenditure was Rs.2197 lakhs in 1981-82 and it goes with the hike of Rs.10663 lakhs in1983-84.

For the past thirty years the public expenditure in Tamil Nadu has been increasing at decreasing rate. Only around 20 per cent of the state income is spent for the state's activities which indicate that Tamil Nadu is giving less importance to the public expenditure. This may leads to economic crisis in the state. So it is suggested that the state should increase the public expenditure for the promotion of economic development and welfare of the state. After analyzing the developmental expenditure of Tamil Nadu state, it is better to compare with the non-developmental expenditure of Tamil Nadu state.

Table 3 Growth of Non- Developmental Expenditure of Tamil Nadu (Rs. in lakhs)

Year	Total Public Expenditure	Marginal increases Rs.	Annual Growth Rate (%)
1980-81	32452	-	-
1981-82	34649	2197	6.77
1982-83	38200	3551	.10
1983-84	48863	10663	27.91
1984-85	57647	8784	17.98
1985-86	66985	9338	16.20
1986-87	76763	9778	14.60
1987-88	86086	9323	12.15
1988-89	103113	17027	19.78
1989-90	128817	25704	24.93
Average	67357.5	LGR	33.00
1990-91	156223	27406	21.28

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Year	Total Public Expenditure	Marginal increases Rs.	Annual Growth Rate (%)
1991-92	191548	35325	22.61
1992-93	229856	38308	20.00
1993-94	296020	66164	28.79
1994-95	284577	-11443	-3.87
1995-96	362072	77495	27.23
1996-97	442776	80704	22.29
1997-98	550233	107457	24.27
1998-99	691475	141242	25.67
1999-2000	876819	185344	26.80
Average	408159.9	LGR	51.25
2000-01	933222	56403	6.43
2001-02	963753	30531	3.27
2002-03	1145203	181450	18.83
2003-04	1206578	61375	5.36
2004-05	1401803	195225	16.18
2005-06	1491976	90173	.06
2006-07	1744187	252211	16.90
2015-16	1947808	203621	11.67
2016-17	2348693	400885	20.58
2017-18	2696433	347740	14.81
2018-19	1587965.6	LGR	21.00

Source: Tamil Nadu Statistical Report

In the second sub-period, 1990-91 to 1999-2000, the value of amount of expenditure of Non-Development Expenditure was Rs.156223 lakhs in 1990-91 and it touched the highest value of Rs.876819 lakhs in 1999-2000. In 1994-95 amount of expenditure has declined. The average value of amount of expenditure of Non-Development expenditure is Rs.408159.9 lakhs per year. The linear growth rat works out to 51.25 per cent. The increases amount of expenditure has increased to Rs.185344 lakhs in 1999-2000. The highest annual growth rate is m28.79 per cent in 1993-94.

In 2000-01, the value of amount of expenditure of Non-Development Expenditure was Rs.933222 lakhs, and it touched the highest value of Rs.2696433 lakhs in 2009-10. The average value of amount of expenditure of Non-Development Expenditure is Rs.1587965.6 lakhs per year. The linear growth rate comes about 21.00 per cent. The increases of expenditure amount comes upto Rs.400885 lakhs in 2008-09. The highest annual growth registered is 20.58 per cent 2008-09.

The present study shows that the development expenditure is increased during the study period but at a decreasing rate. Economic activity is very important for the economic

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development of the state. Therefore in order to increase the economic development and per capita income or NSDP of the state the development expenditure should be raised in Tamil Nadu. The study results reveals that the non-development expenditure also increasing. In the long run it may leads to slow economic progress. Hence, appropriate measures should be attempted to control the growth rate of non-developmental expenditure.

Conclusion

From this study, it may be concluded that the public expenditure has been rapidly increasing in Tamil Nadu. The development expenditure has increased at a decreased rate and the non-development expenditure has increased at a faster rate during the study period. The per capita expenditure has also increased during the study period. The growing trend of public requirement, the government authorities have enhanced the productive investment, in terms of public expenditure on health, education and other basic aminities. Hence, the increasing growth of public expenditure reflects the economic progress of the state of Tamil Nadu.

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ROLE OF IRRIGATION IN INDIA'S AGRICULTURE REVIVAL[31]

B. RAGUL GANDHI[32] & Dr. S. THEENATHAYALAN[33]

Introduction

Agriculture plays a dominant role in economic development through supplying food for the nation, generating opportunities of employment, and sharing of national GDP as well as providing raw materials for agro-based industries (Johnstone and Mellor, 1961). In India, 60% of people are dependent on agriculture (Paul, 2015) for their livelihood and it also contributes 16% of national GDP. Agriculture is the largest user of water which consumes more than 80 per cent of the country's exploitable water resources. Partial failure or even delayed arrival of the monsoon can cause extensive damage to crops. Conscious efforts are, therefore, being made continuously to supplement rainfall and to mitigate the grave consequences of a dry spell by supplying water artificially to parched land. Irrigation implies maintaining the storage of water in the soil required for plant growth at times and places of deficient water supply.

Irrigation was given the highest priority in first, second and third five year plans. The share of irrigation in the total expenditure was more than 25 per cent during sixth, seventh and eighth five year, on an average, during these plans periods. As a result there is an increase in the irrigated area by 2.4 million ha. per year, on an average, during these plan periods. But still we have lot of potential in irrigation development. The maximum potential is estimated around 140million ha. This is the target for achievement by the year 2025.

Statement of the problem

There is a huge temporal and spatial variation in rainfall and water availability in the country. Most of the water is available during the monsoon, and in a few spells of intense rainfall, resulting in floods in major rivers. While the average annual rainfall of the country is about 1170 mm, average rainfall in the North East Region is as high as 10000 mm per year, but some parts of Western Rajasthan receive annual rainfall of about 100 mm only. Estimates show that whereas the lower rainfall zone (less than 750 mm annual rainfall) accounts for 33 per cent of the net sown area, the medium rainfall zone (750-1125 mm) accounts for 35 per cent of the net sown area, the high rainfall zone (1125 to 2000 mm) covers 24 per cent of the net sown area and the very high rainfall zone (more than 2000 mm) accounts for the remaining 8 per cent of the net sown area. The basin wise availability of water is quite varied — the Ganga - Brahmaputra river basin contributes more than 50 per cent of the total annual water availability, and the Southern and Western basins contribute about 15 per cent each.

Objective

To analyze the contribution of irrigation for agriculture development.

Analysis and Interpretation

India has only 4 per cent of the world's renewable water resources. The average annual precipitation in India is estimated to be 4,000 BCM (billion cubic metre), out of which

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the average precipitation during monsoon (June-September) is estimated at 3,000 BCM. The average annual run off in the rivers is estimated to be 1,869 BCM. Out of the above, the estimated utilizable surface water resource is 690 BCM. Apart from the above, the total utilizable groundwater resource is 431 BCM.As such, the total annual utilizable water resource in the country is estimated to be 1,121 BCM.

A large number of dams, barrages, hydro power structures, canal networks, etc., were built all over the country during the successive Plan periods. A cumulative storage capacity of about 225 BCM from major and medium irrigation projects has made it possible to provide assured irrigation in command areas, extend the supply of drinking water to remote areas and ensure water supply to hydro and thermal power plants and to meet other requirements. Added to this is the minor irrigation potential of about 100 BCM, created through check dams, small structures, ponds, etc. Finally, groundwater potential of about 243 BCM was available. All this has made it possible to irrigate about 66.10 million hectares (2012-13) of the 139.9 million hectares of net sown area.

Table 1 Sector wise GVA in India and Population Engaged (in 2016)

Sector	GVA (%)	Population (%)
Agriculture	17.32	49.7
Industry	29.02	28.7
Service	53.66	21.5

Source: Central Statistics Office, Ministry of Statistics and Programme Implementation, Government of India.

Nearly 50 percent of population is engaged in agriculture sector, 28.7 percent in industrial sector and 21.5 in service sector for their employment. On other side agriculture sector contributes only 17.32 percent of national GVA. But service sector contributes more than 50 percent of national GVA.

Table 2 Land use for agriculture in India (million ha)

Year	1950-1951	2000-2001	2010-2011
The total geographical area	328.7	328.7	328.7
Net sown area	118.7	141.3	141.6
Total cropped area/gross cropped area	131.9	181.3	197.6
Cropping intensity	111.1	131.1	139.6
% Gross irrigated area over gross/total cropped area	17.1	41.1	45.0

Source: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare.

As per table 2, the total geographical area of the country is 328.7 million hectares, of which, 118.7 million hectares, 141.3 million hectares and 141.6 million hectares are reported net sown area and 131.9 million hectares, 181.3 million hectares and 197.6 million hectares are gross cropped area with a cropping intensity of 111.1 million hectares, 131.1 million hectares and 139.6 million hectares in the respective time period of 1950-51, 2000-01 and 2010-11. In the period of 1950-51 to 2010-11 the amount of gross irrigated area has increased 17.1 percentages to 45 percentages.

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Table 3 Irrigation potential created (million ha)

SI	Sector	Potential		
		1951	**2001**	**2011**
1	Major & medium irrigation	9.7	42.35	58.7
2	Minor irrigation	12.9	60.42	81.43
	Total	22.6	102.8	139.9

Source: Water and Related Statistics Report

In 1951 the overall irrigation potential was only 22.6 million ha it increased to about 102.8 million ha and 139.9 million ha in 2001 and 2011.

Suggestions

- ✓ In future, government should implement new agricultural strategy for rural India. The government should take necessary steps for the effective use of water and promote irrigation system and also maintenance of traditional irrigation systems.
- ✓ The government should organize seminars and programs about the importance of irrigation and new technologies of irrigation.
- ✓ The available sources (dams, canals, wells, tanks, ponds, etc) should be maintained properly.

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WOMEN INVESTING IN WOMEN[34]

Dr. S. INDRADEVI[35]

Introduction

Women as investors as well as successful entrepreneurs can support other women entrepreneurs by mentoring them, sharing their experiences and also investing their personal wealth into their businesses. Women promote investment in women-led and women-owned companies, and also provide attractive returns to investors to support the development of successful women entrepreneurs and investors. Tapping into the women's business community, it provides a place for women to learn about private equity.

Springboard Enterprises is one of the earliest pioneers in gender lens investing that identified the opportunity presented by high-potential women entrepreneurs and adopted an integrated approach of access to capital, knowledge sharing, developing leadership pipeline and access to network.

Pipeline Angels is a women angel investor networking platform which runs angel investing boot-camps for aspiring women investors and pitching platforms for entrepreneurs who seek funding.

The Female Focus on Financial Inclusion Initiative by FMO brought together women entrepreneurs, commercial bankers and central bankers in Zambia together for a week long program that offered a combination of business support sessions, leadership workshops and one-on-one coaching. At the end of the program, the female entrepreneurs pitched their business ideas, challenges and needs to all the key players in the financial sectors. Having established the business case to invest in women-led businesses, the banks are now exploring the feasibility to launch credit risk guarantee structures dedicated to the women's market.

Women Investing in Women

The **concept** of '*Women Investing in Women'* is gradually gaining traction with women leaders along the investor-investment advisor-investee continuum, acknowledging the importance of women supporting each other as investors and entrepreneurs.

To identify three common *goals*

- Increasing access to capital for women entrepreneurs,
- Fostering workplace equity,
- Developing products and services that benefit women and girls

Objectives of the Study

1. To bring in broader based changes in the access to capital scenario for women entrepreneurs
2. To innovative demand driven financing approaches and products embedded in such approaches need to be developed.

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[34] Paper presented in the **40th Annual Conference of Association of Economists of Tamil Nadu** Organized by Department of Economics, St. Joseph's College (Autonomous), Tiruchirappalli-620 002 on 2nd February, 2020.

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Demand driven financing products

Given the vastness of India as a country and diversity of women-led businesses in terms of sectors, types and sizes, a number of innovative approaches for delivering access to finance solutions can be explored.

Innovative structuring of gender financing funds: Different types of innovative fund structures need to be designed based on the corresponding financing product required to address the needs of women-led businesses in India. These may include guarantee funds, social or development impact bonds, credit enhanced soft loans and blended debt with grant.

Investing in women exists across the continuum

Grassroots Entrepreneurs & Farmers: Additional yield could reduce number of undernourished people.

Microfinance Companies: Prove that women have better credit risk profiles.

Small & Medium Enterprises (SMEs): Can drive global economic growth by enhancing per capita income.

Venture Backed Companies: Had lower failure rates.

Fortune Companies: 60% on return on invested capital.

Factors that enable or constrain women's economic empowerment

Direct factors

Education, skills development and training, Access to quality, decent paid work , Address unpaid care and work burdens, Access to property, assets and financial services, Collective action and leadership, Social protection.

Underlying factors

Labour market characteristics, Fiscal policy, Legal, Regulatory and policy framework and Gender norms and discriminatory social norms.

Direct factors affecting women's Economic Empowerment

The process of enhancing women's economic empowerment is enabled or constrained by six key factors directly affecting women's individual and collective lived experiences:

- education, skills development and training
- access to quality, decent paid work
- unpaid care and work burdens
- access to property, assets and financial services
- collective action and leadership, and
- social protection.

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SUPPLY CHAIN MANAGEMENT SCHEME: A HOLISTIC APPROACH FOR HORTICULTURAL DEVELOPMENT IN TAMIL NADU[36]

Prof. ALISHA JAMES[37]

"Farming is a profession of hope"- Brian Brett

Introduction

Agriculture plays a vital role in the Indian economy. Over 70% of the rural households depend on agriculture as their principal means of livelihood. The ICAR 2017 report shows that Indian horticulture has been recorded the fastest growth in this sector in the world. India is the second largest producer of fruits and vegetables after China. But annually around 35% to 40 % of fruit and vegetable produce in the country are wasted due to lack of proper harvest practices and poor infrastructure facilities available. "At the all- India level, the proportions of the produce the farmers are unable to sell in the market are 34%, 44.6% and about 40% for fruits, vegetables, and fruits and vegetables combined", finds the committee on Doubling of Farmers' Income. This means, every year, farmers lose around Rs.63,000 crore for not being able to sell their products for which they have already made investments.

Tamil Nadu accounts for nearly 5% of the area under fruits and 2.5% of the area under vegetables in the country. In terms of production, the State's share is nearly 6.5% in fruits and 3.6% in vegetables. In Tamil Nadu, fruits and vegetables has much potential for growth but is constrained by low productivity, lack of post-harvest management and storage facilities and inefficient market linkages. Supply Chain Management Scheme for Fruits, Vegetables and other perishables in 10 districts of Tamil Nadu namely, Dharmapuri, Krishnagiri, Ramanathapuram, Thoothukudi, Tirunelveli, Thiruchirapalli, Dindigul, Theni, Coimbatore and the Nilgiris districts are under implementation to overcome this issue. Proper implementation and accessibility to the post harvest infrastructure have the potential to play an important role in achieving the vision of increasing farmers' income. Thus this study examines the issues and challenges faced by the horticulture farmers and the current status of SCM Scheme in Tamil Nadu with special reference to Krishnagiri district.

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Objectives of the Study

1. To assess the status of post-harvest infrastructure facilities under SCM Scheme in Tamil Nadu.
2. To understand and identify the issues and challenges faced by the horticulture farmers in the state.

Horticultural Status of Tamil Nadu

Tamil Nadu is one among the leading horticultural states in India, contributing to 5.88% towards National Horticultural production and 5.4% in respect of total horticultural crops area at national level. Tamil Nadu accounts for nearly 4.8% of the area under fruits and

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2.5% of the area under vegetables in the country. The share of Tamil Nadu in production is 6.5% in fruits, 3.6% in vegetables and 19% in flowers.

Table 1: Area, Production and Yield of Horticultural Crops in Tamil Nadu, 2017-18

S. No.	Category	Area (Lakh Ha.)	Production (Lakh MT.)	Productivity in MT/Ha
1.	Horticultural crops	12.57	171.95	13.68
2.	Vegetables	2.41	63.96	26.54
3.	Fruits	2.91	56.80	19.51

Source: NHB, Ministry of Agriculture & Farmers Welfare, GOI.

Supply Chain Management in Tamil Nadu

As per the reports of Department of Agricultural Marketing and Agri Business of Tamil Nadu, the state govt. started SCM scheme in 10 districts on a hub and spoke model, wherein terminal market complex will act as a Hub and PPC in major raw clusters will act as spokes. This Project is funded under the Warehouse Infrastructure fund (WIF) of NABARD at a total cost of Rs.482.36 crore for creating state of the Art infrastructure facilities for primary processing and making market linkages to handle the fruits, vegetables and other perishable commodities in these selected 10 districts of Tamil Nadu.

The primary objective is to setup warehouse infrastructure, primary processing centers with advanced machinery for processing of vegetables and fruits like bananas and cold storage units. The project is first of its kind in Tamil Nadu to address the value chain requirement of multiple Horticultural Commodities spread across ten major district of the State. The major objectives of the project are to educate the farmers on the best farm management practices for increasing production and increase the marketable surplus. It aims to integrate the farmer producers with the major market centers, processors and consumers and to provide integrated and complete supply chain management infrastructure and support services for perishable fruits and vegetables. This will helps to reduce post- harvest losses and provide uninterrupted supply of quality produce to the consumers round the year at affordable price and will ensure remunerative prices to the farmers by convert surplus production into value added products.

Supply Chain Management Process

To ensure the creation of an efficient marketing system, the project suggests interventions and infrastructure at four levels namely: farmers, collection points, PPCs and Terminal markets. Each of the layers will have necessary linkages for forward and backward integration of the other layers of value chain system. A well-defined strategy has to be laid out also a robust institutional mechanism to effect coordination between various stakeholders of different layers.

Horticulture crops are highly perishable and require special attention on harvesting, handling, packaging, storage and processing operations. The focus would be on providing pre-harvest tools and development of post-harvest infrastructure facilities like Primary Processing Centers, Pack houses, Cold storages, Refer Vans, Ripening Chambers, etc. The project envisages identification of routes for perishable agriculture and Horticulture commodities in the identified districts, facilitate collection of commodities from cluster of villages at identified locations for aggregation at Primary Processing Centers and then to terminal/regulated markets in the district or to neighboring districts/States. In each of the identified districts,

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primary processing centers with facilities for sorting, grading, washing, auction platforms, cold storage, ripening chambers, etc. are to be established for a cluster of 6-10 villages. Further, existing potential regulated markets are identified for up gradation with suitable infrastructure into terminal markets and the PPCs shall serve as feeder units to these markets.

Issues and Challenges

To study the farmers' accessibility to the infrastructure facilities, data were collected from 153 farmers in Krishnagiri district. The major findings and observations are

The farmers sell their products to different parties. Sometimes, they may sell it to the local middleman. This would make their post-harvest activities easier as they don't have to search for a buyer for their products. But it has its own limitations too. Uzhavarsanthai and nearby markets are also places of their sale. But the dominance of some large farmers restricts the entry of small and marginal farmers into the market. In Hosur area, farmers sell their produce to companies like Reliance Fresh. The location of Hosur stands favourable in this situation. Farmers mostly sell their produce to more than one source at a time to earn maximum returns from their field. For the agro products produced, the farmers are not getting the payments on time.

Majority (63%) responded that there is no specified time mechanism exists for due payments. If they are selling it to the local traders, they make the payment during the next cropping season. Out of the farmers surveyed, 28% of the total respondents are only aware about the TNSCM scheme. This 28% are either large farmers or member of Board of Directors under different FPOs. All the farmers are willing to use the infrastructure facilities which are coming under the SCM scheme. But the lack of awareness can act as a hurdle of preventing them from using these facilities.

- Tamil Nadu Supply Chain Management Scheme (TNSCM) is being implemented in the following districts of Tamil Nadu (project cost in brackets): Dharmapuri (Rs.32.42 crore); Krishnagiri (Rs.97 crore); Ramanathapuram (Rs.27.28 crore); Thoothukudi (Rs.35.36 crore); Tirunelveli (Rs.35.56 crore); Tiruchirapilli (Rs.28.66 crore), Dindigul (Rs.26.30 crore); Theni (Rs.32.67 crore); Coimbatore (Rs.64.94 crore) and the Nilgiris (Rs.14.93 crore). The major infrastructures developing under TNSCM are Primary Processing Centres (PPCs), Cold storages, Irradiation Unit, Individual Quick Frozen (IQF) Centres. 2024 villages are covered under the scheme which will benefit around 80, 960 farmers. This will create an additional 9.32 lakhs man days employment opportunity.
- There are numerous factors which act as the roadblocks for the efficient supply chain of fruits and vegetables in Tamil Nadu. They are
  - Integration: In supply chain of F&V sector in Tamil Nadu, there is a lack of forward and backward integration between the farmers and the other stakeholders.
  - Infrastructure: Proper and adequate infrastructure helps farmers and agri businessman to run their business successfully and helps to deliver the goods in the right time with right condition. In the state, lack of needed infrastructure acts as the main impediment in the supply chain of agricultural products which further leads to high amount of losses.
  - Farmers' awareness: Without proper knowledge and awareness level of the farmer the supply chain of F&V cannot be efficient, because farmers are the main source of the fresh agro produce.

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  - Post-harvest losses: Post-harvest losses are the major problem in the supply chain of Fruits and Vegetables sector in India. Crop worth approximately US$19.4 mn is wasted in India on a daily basis only due to rejection at the farm gate and delays in the distribution process.
  - Financial issues: Farmers income is very low in India as compared to other nations. They don't get proper income for their agricultural produce and maximum amount of share eat up by the intermediaries. Due to this dilemma, the farmer realizes a very small amount of the consumer price share, i.e., around 25% of the total price share.
  - Technological issues: Farmers in India are not at all technologically advanced. Along with this, they are still using obsolete and inefficient technologies.
- Improper market information, Lack of government support, Lack of proper transportation facilities, Lack of price awareness, Very limited credit facilities, Role of middleman, Dominance of traders in the market, Lack of technical training, Financial liabilities with the traders in the market, Huge expenditure on value addition of agro-products are the major hurdles on farmers' accessibility to post-harvest infrastructure facilities.

Recommendations

- Sensitization of farmers: Farmers should be made aware about the services available to them. Information system for better coordination among different stakeholders from farmers to consumers is the need of the hour. The internet and mobile communication can also be used to enable information and financial transfer between the stakeholders.
- Strengthening of FPOs: Farmer Producer Organisationss should be strengthened to become a support system for the farmers To overcome the financial liabilities of the farmers, FPOs should be made aware and responsible to improve the credit rating of its members. FPOs are also an essential actor in mobilizing farmers and make them aware about the facilities and services.
- Online Markets, Digital Monitoring: Making use of the digital prowess available in the current times, establishment of online markets for farmer produces could be attempted as project in Krishnagiri. Online markets integrated with the support of storage and processing infrastructure can be profitable for the farmers.

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A STUDY ON SOCIO ECONOMIC CONDITIONS OF TRIBAL FARMERS IN SOLAGAR DODDI VILLAGE OF ERODE DISTRICT OF TAMIL NADU[38]

Dr. N. MANI[39] & M. ROJA[40]

Introduction

Tribal peoples constitute 8.6 percent of India's total population, about 104 million people according to the 2011 census (68 million people according to the 1991 census). This is the largest population of the tribal people in the world. One concentration lives in a belt along the Himalayas stretching through Jammu and Kashmir, Himachal Pradesh, and Uttar Pradesh in the west, to Assam, Meghalaya, Tripura, Arunachal Pradesh, Mizoram, Manipur, and Nagaland in the northeast. Another concentration lives in the hilly areas of central India (Madhya Pradesh, Orissa, and, to a lesser extent, Andhra Pradesh); in this belt, which is bounded by the Narmada River to the north and the Godavari River to the southeast, tribal peoples occupy the slopes of the region's mountains. Other tribals, the Santals, live in Bihar and West Bengal. There are smaller numbers of tribal people in Karnataka, Tamil Nadu, and Kerala, in western India in Gujarat and Rajasthan, and in the union territories of Lakshadweep and the Andaman and Nicobar Islands.

The extent to which a state's population is tribal varies considerably. In the northeastern states of Arunachal Pradesh, Meghalaya, Mizoram, and Nagaland, upward of 90 percent of the population is tribal. However, in the remaining northeast states of Assam, Manipur, Sikkim, and Tripura, tribal peoples form between 20 and 30 percent of the population. The largest tribes are found in central India, although the tribal population there accounts for only around 10 percent of the region's total population. Major concentrations of tribal people live in Maharashtra, Orissa, and West Bengal. In the south, about 1 percent of the populations of Kerala and Tamil Nadu are tribal, whereas about 6 percent in Andhra Pradesh and Karnataka are members of tribes.

Tribal people in India are called adivasi. Adivasi is an umbrella term for a heterogeneous set of ethnic and tribal groups considered the aboriginal population of India. Although terms such as atavika, vanavasi ("forest dwellers"), or girijan ("hill people") are also used for the tribes of India, adivasi carries the specific meaning of being the original and autochthonous inhabitants of a given region and was specifically coined for that purpose in the 1930s. Over time, unlike the terms "aborigines" or "tribes", the word "adivasi" has developed a connotation of past autonomy which was disrupted during the British colonial period in India and has not been restored. They generally live outside the mainstream of Indian Hindu and Muslim society. Most ordinary Indians known little about them.

There are some 573 communities recognized by the government as Scheduled Tribes and therefore eligible to receive special benefits and to compete for reserved seats in

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legislatures and schools. They range in size from the Gonds (roughly 7.4 million) and the Santals (approximately 4.2 million) to only eighteen Chaimals in the Andaman Islands. Central Indian states have the country's largest tribes, and, taken as a whole, roughly 75 percent of the total tribal population live there.

Objectives of the study

1. To understand socio economic conditions of Solagar doddi Tribal farmers.
2. To analyse cost of cultivation of crops in Solagar doddi village.
3. To analyse the problems faced by the Solagar doddi Tribal farmers and to suggest possible measures to reduce them.

Methodology of the study

The primary data were collected from 40 Tribal farmers in Solagar Doddi village in Erode district of Tamil Nadu. The study was undertaken for the period from December 2018 to March 2019.

Education

Education is very important factor to uplift human beings. It helps to live with happiness and prosperity. Education empowers minds that will be able to understand the problems easily. Hence, the following table is indicated the education status of tribals.

Table 1 Education wise classification of the Respondents

Particulars	No .of Respondents	Percentage
Illiterate	33	82.5
Primary School	7	17.5
Total	**40**	**100**

Around 83 per cent of the respondents are Illiterates revealing a very lower rate of literacy (17%).

Nature of Employment

The nature of Employment is one of the main factor to understand the socio economic condition of the farmer. In this junction the following table explained the nature of employment of this study Area.

Table 2 Employment wise classification of the Respondents

Employment	No .of Respondents	Percentage
Daily wages	23	57.5
Weekly wage	5	12.5
Monthly wage	12	30
Total	**40**	**100**

It was found that 57.5 percent of the respondents are getting daily wages, 30 percent getting monthly wage and remaining employed for weekly wages.

Monthly Income

The monthly income-wise classification of the respondents in the study area is given in table 3.

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Table 3 Income wise classification of the Respondents

Monthly Income	No. of Respondents	Percentage
< 2501	5	12.5
2501-5001	29	72.5
5001-7000	6	15.0
Total	**40**	**100**

From the above table it can be inferred that most of the respondents belong to the income group of Rs.2501-5001.

Details of the Land holding

The following table indicates the size of the land holding of the respondents.

Table 4 Size of Land holding of the Respondents

Land(Own land)	No .of Respondents	Percent
<2.5 acres	3	7.5
2.5-5 acres	25	62.5
5-7 acres	7	17.5
(Lease land)		87.5%
<2.5 acres	2	5
2.5-5 acres	3	7.5
5-7 acres	-	-
Total	**40**	**12.5%**

From the above table it can be inferred that 87.5 percentages of the respondents are having own land. And 12.5 percentages of the respondents are lease land. Among the own land holder 62.5 percentage of the respondents belong to the category of 2.5-5 acre group. Only 5 percentage of the respondents are belongs to the category of less than 2.5 acres holder.

Cropping pattern

The Cropping pattern is determined by rainfall, climate, temperature and soil type. The following table explains the cropping pattern in the study area.

Table 5 Cropping Pattern of the Respondents

Crop	Percent
Ragi	25
Maize	30
Rage Maize & Horse gram	45
Total	**100**

It can be observed that, 45 percent of the respondents cultivated ragi, maize and horse-gram, 30 percent cultivated maize and 25 percent cultivated ragi only.

Problems faced by the Farmers

There are many problems that the tribal farmers faced during the cultivation of crops. Insufficient water, drought, low yield and crop diseases are the main problems faced by the tribal farmers.

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Cost of cultivation

In this village, the cultivation cost of Ragi per acre came to Rs.7000, maize Rs.20,000 and pulses Rs.3000.

Suggestions

- Almost two third of the sample respondents are borrowing loans from money lenders from 24 percent of interest rate to 60 percent interest. This is highly exploitative. Majority of the income of the poor tribal agricultural labourers are swallowed by money lenders. This should be stopped through alternative institutional financial credit facilities. Central and state government may extent loan and advances through agricultural credit societies and other suitable financial institutions.
- Majority of the respondents are illiterates, literacy and awareness is the precondition human liberation from all kinds illness, including poverty and misery. Hence, adult education programme (Shakshaar Bharath) should intensified in this areas.
- Water scarcity is the important problem for them. Hence, government has to spend on rain water harvesting recharge of existing ponds and check dams.

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CONTRIBUTION OF AGRICULTURE TO GDP IN INDIA[41]

Dr. S. PALANI[42] & M. SIVANYA[43]

Introduction

Agriculture constitutes the foremost significant a part of Indian Economy. This also led to technological improvements in agricultural techniques. Now, Agriculture with its allied sectors is certainly the most important livelihood provider in India, more so within the vast country. It also contributes a significant figure to GDP. Most of the industries also depend upon agriculture sector for his or her raw materials. The planned approach to development has helped the country to succeed in a stage where the country is self-sufficient in food grains and features a comfortable buffer stock. These achievements have been possible mainly through the favorable policy framework. The policy of Indian Agriculture was to realize food security by providing incentive for growth alongside equitable access to food. As a result terrible famines became events of the past and therefore the agricultural production doesn't show large variation even within the event of adverse climatic condition. It has undergone rapid transformation in the past two decades; the policies of globalization and liberalization have opened up new avenues for agricultural this has led to not only commercialization and diversification, but also triggered various technological and institutional innovations due to investments in sector. Agriculture is that the most vital occupation for many of the Indian families. Over 58% of the agricultural households depend upon agriculture as their principal means of livelihood. Agriculture, alongside fisheries and forestry, is one among the most important contributors to the Gross Domestic Product (GDP). In India, agriculture contributes about sixteen percent (16%) of total GDP and one-tenth (10%) of total exports. Over hour of India's acreage is arable making it the second largest country in terms of total arable land? Indian agriculture has registered impressive growth over previous couple of decades.

Objectives of the study

1. To estimate the growth rate of agriculture Production in India.
2. To calculate the annual growth rate of Agricultural GDP in India.

Significance of agriculture

Around 70% of the people in India reside in rural areas, agriculture is the main occupation of the people in rural areas. In these areas, people are mainly residing in remote and backward regions, they are backward in terms of literacy and reside in the conditions of poverty. Higher priority given to the agricultural sector will contribute to achieving the goals and objectives of causing a reduction in poverty and malnutrition. Attaining an eight to nine percent rate of growth in the overall gross domestic product may not distribute much in terms of poverty lessening without the agricultural growth increases at a rapid rate. All these factors point to just one thing, that agriculture has to be kept at the center of any reorganization

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program or planning process, in order to make a substantial impression on poverty and malnutrition and to make sure the achievement of long-term food security for the people.

Result and Analysis

Table 1 Annual Growth rate of Agricultural Production in India 2002-2018

Year	Agriculture Production (AGR)
2002-03	1.41
2003-04	-7.83
2004-05	7.76
2005-06	-2.8
2006-07	1.25
2007-08	1.7
2008-09	0.28
2009-10	-1
2010-11	-1.23
2011-12	4.21
2012-13	-1.53
2013-14	-3.29
2014-15	3.41
2015-16	-0.6
2016-17	-0.87
2017-18	4.65

The agricultural production in 2003-04 has shown a negative annual growth rate -7.83 per cent and the direct opposite of 2004 positive annual growth rate is 7.76 per cent. The annual growth rate of agriculture production positively increased during 2011, 2014, 2017 in 4.21, 3.41 and 4.65 per cent respectively.

Table 2 Annual Growth Rate of Agricultural GDP in India from 2005-2018

Year	Annual Growth Rate of GDP
2005-06	14
2006-07	17.1
2007-08	15.1
2008-09	12.6
2009-10	15.5
2010-11	19.9
2011-12	14.4
2012-13	13.8
2013-14	13
2014-15	11
2015-16	10.4
2016-17	10.8
2017-18	10

Source: RBI Data Handbook

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Agricultural production will be negatively decrease continuously in this periods it means insufficient of rainfall is the big reasons for reducing the agriculture production. So agricultural GDP rate is reducing in this year. Since the state and central Governments should take responsibilities to provide irrigation facilities through river connection or otherwise cannot protect the Indian farmers from its destructions.

Conclusion

India's agricultural sector remains vital to the Indian economy, although its share of the economy has decreased over the past 50 years. India has made significant advances in agricultural production in recent decades, including the introduction of high-yield seed varieties, increased use of fertilizers and improved water management systems. Reforms to land distribution, water management and food distribution systems will further enhance productivity and help India meet its growing demand for food. Crop diversification may be a procedure to offer a wider choice within the production of a spread of crops during a given area so on expand production-related activities on various crops. It is actually a shift from the dominance of one crop to a number of crops to meet ever-increasing demand of cereals, pulses, wheat, and rice, etc. India is an agricultural country.

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UZHAVAR SANTHAI IN MADURAI CITY: A SWOT ANALYSIS[44]

Dr. A. KUMUDHA[45]

Introduction

India lives in its villages and the economy of villages depends on the prosperity of agriculture. A state like Tamil Nadu also has 70 per cent of its population in rural area which depends on agriculture and other allied activities. Regulation of agricultural markets has contributed substantially towards increasing the returns to the farmers for his produce, also in systematic development of market and other marketing activities. To avoid a total loss and to minimize their loss, farmers prefer to sell their produce to wholesale dealers who offer them a very low price and charge them with commission etc., which deprive the farmers benefits for their hard work. The wholesale dealers sell their produce to retailers with profit; the retailers add the profit to the price and charge from the public. The net result, farmers get very low price; public pay more; the only beneficiaries are middleman, the wholesalers and retailers.

To bridge the gap between farmers and consumers by removing the curtain between them "Farmers market" scheme has been introduced by the Government of Tamil Nadu. The Madurai Uzhavar Sandhai was inaugurated on 14th Nov. 1999.

Mode of Operation

The market place is establishing in important centres to help the farmers living in and around that centre. Every market has 80 to 100 small shops or sheds. Each farmer is allotted a shop to sell his produce. The State Government appoints the Marketing Committee to regulate the marketing centre. The committee will also have farmers as its representative. This Committee identifies the farmers and gives them a permit card. Such farmers alone are being allotted the shops to market their produce. The farmers need not pay any rent or commission for selling their goods at the market. Farmers can transport their produce to the marketing centers free of cost using State Transport Corporation Buses.

The market is open to the public from 6.00 a.m. to 1.00 p.m. daily. As and when the farmers bring their produce to the market, the committee will fix the prices for the same. The same prices will be ruling for that particular commodity for the whole day. The prices are fixed for different commodities on the basis of previous day price of that commodity in the wholesale market.

Statement of the Problem

For a long period of time Indian agriculture was mostly in the nature and subsistence's farming. Soon after the harvest the farmers were forced to sell their produce just to meet their requirements. There is an inadequate storage facilities and middlemen problem drive the poor farmers to sell their produce of low prices. The regulated market is not functioning properly. By way of improving the standards of living of the poor farmers, Uzhavar Sandhai introduced to the farmers. Therefore, a study of Uzhavar Sandhai will help to the know the significant contribution of this government intervention in the field of

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agricultural marketing. Further it will focus and pave a way for assessing the present status of the farmers market and for developing suitable strategies towards its effective functioning.

Objective of the Study

To study the Strength, weaknesses, opportunities and threats (SWOT) of 'Uzhavar Sandhai'.

Survey Research Design

Selection of Uzhavar Sandhai and farmers, method of data collection, method of data analysis and period of study are outlined here.

Madurai city is purposively selected as it has three Uzhavar Sandhais out of the seven in Madurai District namely, Anna Nagar, Chokkikulam, Palanganatham, Usilampatti, Thirumangalam, Melur and Anaiyur. All the three Uzhavar Sandha is located in the city (Anna Nagar, Chokkikulam, Palanganatham) are selected on the basis of turnover, number of farmers and number of consumers involved in them. From each of them 40 farmers are selected as sample by adopting convenience sampling method and the total came to 120 farmers regularly visiting the Uzhavar Sandhai. By adopting personal interview method and canvassing a detailed questionnaire the required information were collected. The visits were made during June 2019 to December 2019.

Data Analysis and Interpretation

The present study is to assess the strength, weakness, opportunities and threat aspects in the functioning of 'Uzhavar Sandhai' in Madurai city and to examine whether the objective of eliminating middlemen is achieved and in the process enabled farmers to directly realize the fair price for their produce.

Strength of Uzhavar Sandhai

On the basis of literature 10 strengths of Uzavar Sandhai were identified. These 10 items were ranked by selected farmers on priority based on its comparative advantage over traditional market.

Table 1 Ranking Scores on Strengths Uzhavar Sandhai

S. No.	Statements	Rank Score										RBQ value
		1	2	3	4	5	6	7	8	9	10	
1	No entry fee	28	40	20	7	3	12	6	4	-	-	80.3%
2	Remunerative prices	62	38	20	-	-	-	-	-		-	68.9%
3	Fresh produces	10	-	12	50	18	10	20	-	-	-	65.3%
4	Absence of middlemen	10	20	10	10	30	10	-	10	20	-	60.8%
5	No delay in money transaction	-	-	10	-	-	20	10	30	30	20	46.8%
6	Free transport	-	-	28	-	20	22	-	-	30	20	43.7%
7	Good sanitation facilities	-	-	20	20	-	8	20	-	20	32	41.0%
8	Transparency in functioning	-	-	15	-	10	20	10	22	15	28	37.0%
9	Hygienic market environment	-	-	-	-	38	-	-	20	30	32	31.7%
10	Easy access to market	40	10	-	-	22	8	8	-	12	20	31.5%

Source: Primary data

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Uzhavar Sandhai farmers had expressed the no entry fee as major strength of the 'Uzhavar Sandhai' and hence ranked first with an RBQ value of 80.3% Madurai Market Committee did not charge entry fee to the farmers. They had expressed the remunerative prices for their produce as second major strength of the 'Uzhavar Sandhai' and hence ranked second with an RBQ value of 68.9%. The traditional markets were also not having storage facility and hence it was assigned 65.3% RBQ value by the respondents. Easy access to the market was considered as one of the strength, despite it scored the last rank among the strengths as per the low RBQ value of 31.5%.

Weaknesses of Uzhavar Sandhai

From the responses of the selected farmers eight weaknesses of Uzhavar Sandhais were identified and ranked by them.

Table 2 Ranking Scores on Weaknesses of Uzhavar Sandhai

S. No.	Statements	Rank								RBQ value
		1	2	3	4	5	6	7	8	
1	Lack of cold storage facilities	40	10	40	10	-	-	10	10	73.9%
2	No standard grading procedure	40	15	5	10	20	10	10	10	67.2%
3	Functioning in morning session alone	25	13	27	20	10	-	20	5	66.5%
4	Functioning in morning session alone	40	10	-	20	20	10	-	20	64.55
5	Lack availability of fruits	30	10	-	22	28	15	15	-	63.2%
6	Insufficient stall facilities	10	20	22	18	15	30	-	5	62.2%
7	Insufficient number of stalls/space to the farmers	30	20	5	5	15	15	10	20	60.4%
8	Sudden temporary price cuts by private commission agents causes fluctuation of price which affects market functioning	10	-	-	10	20	20	30	30	37.5%

Source: Primary data

Farmers ranked lack of storage facility as the first weakness with the RBQ value at 73.9%. Lack of standard grading procedure is ranked as the second weakness. A section of farmers preferred the functioning both in the morning and evening hours. They considered this as a weakness. During rainy season the consumers have to run here and there in search of a shelter as they could not keep away themselves from the unforeseen rain. The Sandhai had 1100 registered farmers but the number of stalls were only 161.

Opportunities of Uzhavar Sandhai

The opportunities perceived by selected farmers are grouped into eight statements which would help for developing Uzhavar Sandhai in future.

Table 3 Ranking Scores on Opportunities of Uzhavar Sandhai

S. No.	Statements	Rank								RBQ value
		1	2	3	4	5	6	7	8	
1	Market operated in two sessions	70	40	-	-	5	5	-	-	91.14%
2	Developing as unit for preparation of value added products	85	10	5	-	-	-	-	-	81.3%

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S. No.	Statements	Rank								RBQ value
		1	2	3	4	5	6	7	8	
3	Establishment of an information center	75	15	5	5	-	-	-	-	79.2%
4	Cold storage facilities	68	-	12	-	10	-	10	20	72.5%
5	Installation of electronic price display system	55	10	5	-	-	20	10	20	66.7%
6	Possibility of sales of agricultural inputs	50	-	15	-	10	5	20	20	63.02%
7	Sales promotions of products of self-help groups	40	-	-	20	10	25	15	10	59.9%
8	Banking facilities	20	-	10	-	18	22	30	20	45.6%

Source: Primary data

The farmers need the opening of market in two sessions and thus assigned RBQ value (91.14%) for bringing this facility. Value added products will get a natural welcome for trade. This had made farmers to, think of developing a unit for value added products within the premises of the 'Sandhai' by assigning an RBQ (81.3%) value. Farmers have placed third rank for information center by giving RBQ value 79.2%. Farmers expressed the need for cold storage facility in the 'Sandhai' and assigned RBQ value (72.5%) for this new facility. The bank did not give credit to farmers, which is very much needed by them, and hence they place the banking facilities as a last option by assigning a low RBQ value of 45.6%.

Threats of Uzhar Sandhai

The threats of Uzhavar Sandhai are depicted in the following table.

Table 4 Ranking Scores on Threats of Uzhavar Sandhai

S. No.	Statements	Rank							RBQ value
		1	2	3	4	5	6	7	
1	The change in political leadership will affect market functioning	85	15	20	-	-	-	-	93.5%
2	Privatization of extension services	60	20	15	25	-	-	-	87.5%
3	Farmers will be bothered only quantity of produce rather than qualities	45	15	20	10	10	-	-	85.1%
4	Purchase by retailers in bulk quantity	40	30	20	30	-	-	-	80.9%
5	City planning	35	15	28	12	10	-	-	74.2%
6	Political interference	50	15	10	20	-	25	-	73.8%
7	Free import of agriculture product	15	20	-	-	25	10	30	45.2%

Source: Primary data

Change in Political leadership emerged as a major threats to the functioning of the 'Sandhai' and they assigned the highest RBQ value 93.5%. Uzhavar Sandhai farmers considered the privatization of extension as a second major threat towards its functioning. The section of Uzhavar Sandhai farmers concentrates on the quantity of produce rather than its

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quality. This had made farmers to feel it as a threat. Farmers were selling their produce in bulk to retailers for quickly finishing the business transactions. They considered assigned the RBQ value of 80.9%. Uzhavar sandhai farmers were not aware of the agreement of world trade organization (WTO), which allows free import of 714 agricultural items into the Indian domestic market. Farming community had regarded this as a minor threat (29.08 RBQ value).

Conclusion

The farmers involved in the uzhavar sandhai in Madurai district find it convenient in selling their produce. The concept of uzhavar sandhai has dual objectives; for the farmers to sell their produce at profitable prices and for the general public, especially poor income stratum , to get fresh vegetables and fruits at genuine price fixed by the authorities. In spite of the fact that uzhavar sandhai has been a place where the farmers and buyers meet together with the intervention of the intermediaries, the number of farmers using the uzhavar sandhai is less. The farmers of this district can be aware and motivated to make use of all facilities provided by the Government for their bright future. The efforts must be earnest in making uzhavar sandhai a flourishing one.

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INDUSTRY AND ECONOMIC DEVELOPMENT: A STATUS REPORT OF MANUFACTURING SECTOR IN TAMIL NADU[46]

Dr. A. SHANPAREETH[47] & G. EZHILARASAN[48]

Introduction

Indian industry broadly consists of four categories namely Large/ heavy industries, medium scale industries, small scale industries and the cottage industries. For analytical purposes they are divided into registered sector and unorganized sector as per the classification of Central Statistical Organization which conducts periodical surveys popularly known as National sample Survey through (NSS). In Tamil Nadu also these categories are present but their performance may differ. This has been due to the policies of both the central government and the state government. It has been stated that Tamil Nadu ranks third among the Indian states in terms of industrial output, value addition in the manufacturing sector and foreign direct investments. Further, the state has the highest number of factories and employs the largest number of workers in the economy.

Role of Industry in Economic Development

Industrialization is the process of manufacturing consumer goods and capital goods and of creating social overhead capital in order to provide goods and services to both individuals and businesses, and such it plays a major role in the economic development. Theoretically, for development, the share of the industrial sector should rise and that of the agricultural sector decline. This is only possible through a policy of deliberate industrialization. In developing countries like India there is overcrowding on the land, holdings are subdivided and fragmented, and farmers practice traditional agriculture. For rapid development, LDCs cannot afford to wait for changes in farm practices to take place. Therefore, LDCs must begin with industrial development to supply fertilizers, farm machinery and other inputs so as to increase efficiency on the farm and they can be transferred from agriculture to industry with little or no loss in agricultural output. Since the marginal product of labour is higher in industry than in agriculture, transferring such workers to the industrial sector will raise aggregate output. Industrialization is also essential in LDCs because it brings increasing returns and economies of scale while agriculture does not. Since industrialization brings urbanization, it is superior to the stimulation of agriculture.

According to Sivasubramaniyan (2017) the balanced growth theory is an economic theory that hypothesis that the government of any developing country needs to make large investments in different economic sectors simultaneously. **Hayami** and **Godo** (2005) and **Cypher** and **Dietz** (2008) advocated this line of thinking and it implies that all sectors of the economy should be developed simultaneously. No sector should be discriminated in the matter of development. This will enlarge the market size, increase productivity, and provide

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an incentive for the private sector to invest as well as inclusive growth. If government takes the decisions to develop all sectors, it will create a balanced regional development.

Romer's model of Endogenous Technical Change cites the example of Japan which has very few natural resources but it was open to new western ideas and technology. It imported machines from the United States during the Meiji era, dismantled them to see how they worked and manufactured their better prototypes. Therefore, ideas are essential for the growth of an economy. These ideas relate to improved designs for the production of producer durable goods for final production.

Statement of the Problem

The sector wise contribution to the national product of a country reflects its stage of economic development. Over the period, the industrial sector (secondary sector) dominated the scene and however, the post-liberalization scenario changed the pattern of industrial growth as well as the emergence of the service sector. However, the manufacturing sector alone will facilitate the growth of employment opportunities and output. In this regard there is a need for analyzing the contribution of manufacturing sector to the state so as to get a fair idea about the trends in industrial development and its role in state domestic product.

Objectives

1. To examine the contribution of manufacturing sector to the State Domestic Product of Tamil Nadu.
2. To analyze the Performance of manufacturing sector in Tamil Nadu in terms of selected parameters.

Methodology

Source of Data

The study is based on secondary data collected from the publications of Department of Economics and Statistics, Chennai, NSSO, and Annual Survey Industries (ASI).

Period of Study

The study covered a period of ten years i.e. 2009-10 to 2018-19.

Method of Data Analysis

The data were analyzed by using percentage, Annual Growth Rate (AGR), and Compound Growth Rate (CGR).

Results and discussion

Tamil Nadu has a diversified manufacturing sector and dominates the scene in several industries like automobiles and auto components, engineering, pharmaceuticals, garments, textile products, leather products, chemicals and plastics. It ranks first among the states in terms of number of factories and industrial workers. In this context, the contribution of manufacturing sector to Gross State Domestic Product of Tamil Nadu has been presented first.

GSDP of Tamil Nadu

The growth rate of GSDP of Tamil Nadu has been found as varied between 9.68% (2015-16) and 21.92% (2010-11). The decline in percentage compared to 2009-2012 (two years) with 2015-18 (three year period) is really revealing: it became half i.e. from 20.7% to 10.8% implying the fast decline in its growth rate.

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Table 1 GSDP of Tamil Nadu

Year	GSDP (Rs. in Crores)	Annual growth Rate
2009-10	4797336	19.53
2010-11	584896	21.92
2011-12	667202	14.07
2012-13	744859	11.64
2013-14	854238	14.68
2014-15	1072679	10.75
2015-16	1176500	9.68
2016-17	1802639	10.72
2017-18	1461841	12.22
2018-19	1664159	13.84

Source: Directorate of Economics Statistics, Chennai.

Sector-wise contribution to GSDP of Tamil Nadu

The contribution of Industrial Sector to the GSDP of Tamil Nadu during 2009-10 to 2018-19 gives an interesting reading: it declined from 30.44% in 2009-10 to 28% in 2018-19. At the same time, the contribution of services sector increased from 60.36% to 64% during the same period. At the extreme, the contribution of primary sector (Agriculture) has declined from 9.20% to 8% and for two years (2012-2014) went below this percentage. From the reported data it has been observed that within the industrial sector the manufacturing sector contributed to the tune of 80% revealing its importance.

Table 2 Sector-Wise Contribution to GSDP of Tamil Nadu (Shares in %)

Year	Agriculture	Industry	Service
2009-10	9.20	30.44	60.36
2010-11	9.20	30.44	60.36
2011-12	8.72	31.09	60.19
2012-13	7.3	31.7	61.1
2013-14	7.4	30.3	62.3
2014-15	7.76	28.54	63.70
2015-16	11.55	26.15	62.3
2016-17	10.41	27.30	62.84
2018-19	8	28	64

Source: Planning Commission, Government of India.
http://statisticstimes.com/economy/sectorwise-gap-of-indian-states.php

Number of Registered Manufacturing Factories

As per Annual Survey Industries (ASI) data, the number of factories has gradually increased in Tamil Nadu during 2009-10 to 2016-17, but it declined marginally thereafter. That is, from 16.86 lakhs in 2009-10 to 18.53 lakhs in 2013-14 but declined to 17.19 lakhs in 2016-17.

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Years	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
No. of Factories (lakhs)	16.86	17.41	17.01	18.23	18.53	18.03	17.89	17.19

Source: Annual survey of Industries, CSO, New Delhi.

Output of Manufacturing Sector

The value of output of manufacturing sector in Tamil Nadu has been given in table 3.

For the absolute values annual growth rate and compound growth rate were calculated. The gross value of output has increased from Rs.375784 in 2009-10 to Rs.827543 in 2018-19. The fluctuations in the value of output were reflected in the annual growth rates. The value of CGAR came to 0.08 revealing a very poor performance of the manufacturing sector.

Computed by Author

S. No.	Year	Gross value of Output (Rs. Crore)	AGR
1	**2009-10**	375784	-----
2	**2010-11**	472122	25.6
3	**2011-12**	609635	29.1
4	**2012-13**	619525	1.6
5	**2013-14**	676957	9.3
6	**2014-15**	700381	3.4
7	**2015-16**	684928	-2.2
8	**2016-17**	694818	1.4
9	**2017-18**	752250	8.2
10	**2018-19**	827543	10.0
	CARG	0.08	

Source: Annual survey of Industries, CSO, New Delhi.

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Contribution to Employment

As per Annual Survey of Industries (ASI) data, the contribution of manufacturing sector to the employment continuously increased during the period 2009-2019. In 2009-10, 16.03 lakhs of employees were engaged and this has increased to 17 lakhs in 2018-19, of course with fluctuations.

Table 4 Employment in Manufacturing Sector in Tamil Nadu

Years	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Number of personal employed (in lakhs)	16.03	15.31	14.45	14.81	16.20	16.90	17.25	18.50	17.56	17.02

Source: Annual survey of Industries, CSO, New Delhi.

Conclusion

The National Manufacturing Policy, 2011 and the 12th Five Year Plan (2012-17) acknowledge the urgency to attain more 'breadth' and depth' in manufacturing, implying not only improvement in the production of similar goods but also diversifying into more complex products and moving up the manufacturing value chain. The data analyzed for a decade revealed that there is a scope for an improved performance of manufacturing sector in Tamil Nadu.

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CLOVE PRODUCTION IN INDIA[49]

Dr. S. KARTHIKEYAN[50] & I. RAMAKRISHNAN[51]

Introduction

Clove is an aromatic dried flower bud in Indonesia is said to be the evergreen tree Indonesia is said to be the native of clove. The Clove has been used as Spicesin India; clove is an evergreen tree which grows humid tropical climates. In India, clove can be grown in all the area of the country except in the coastal. But hilly tracts of the Western Ghats and the red soils of Kerala are most and best suitable for clove cultivation**.** It has very good demand in local as well as in the international markets due to its health benefits some of the clove health benefits are listed production.

Tamil Nadu produced the largest volume of cloves in India in fiscal year 2018. This was an estimated 970 metric tons over an area of 990 hectares. Karnataka followed by Kerala ranking third. The country produced over 1.2 thousand metric tons of cloves that year. Indonesia leads the world in clove production. Virtually 80% of the clove of the world is produced by Indonesia follow by Madagascar and Tanzania. Indonesia is the biggest producer of cloves, followed by Madagascar, Zanzibar, India and Sri Lanka, country.

The clove tree is for the most part often grown from seed. Plant clove seeds in well drained and fertile loam and water, and then feed them frequently. The soil you should use for planting clove should be similar to what you would use for into larger production cloves.

Clove has the following medicinal and health value

- Cloves improve digestion
- The infections of clove relieve respiratory
- Used in treating bruises and scrapes

Climate and soil

Clove grows well in rich loamy soils of the humid tropics and can be grown effectively in the red soils of Kerala as well as in the hilly terrain of Western Ghats at higher elevations in Tamil Nadu and Karnataka. A cool climate with well distributed rainfall is ideal for flowering. The site selected for cultivation of clove needs good drainage since the crop cannot withstand water logged conditions. It thrives well in areas reception an annual rainfall of 150-300 cm. In India, clove grows from sea level up to 1500 m above sea levels.

The Clove Plants

The clove trees to the desired height in a commercial plantation so as to manage the plantation more than effectively. The clove plants are coppiced during June to July to a height of about 15 centimetres from the stump. Afterward, couple of side shoots in production and consequently the clove plants assume the shape of a low bush of about 2-meter height and a

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bunch of canes appropriate for peeling crop up in a period of four years. Regular peeling operations could be carried from 4th & 5th year, in case of seedling bushes, depending upon the extent of development of peeler shoots. Usually, the coppicing method is practiced in alternate years.

Uses of Cloves

Clove has also several non-culinary uses. The type of bioactive chemicals in clove also finds a significant place in traditional medicine in India and China. The cloves are said to help relieve toothaches and are associated with improved digestive health. Cloves are used as a carminative, and an anodyne. The spices are also to naturally use.

Production of Cloves

The cloves tree, still leads the world in clove production. Indonesia produced 109,600 tons of cloves. More than a few African countries also produce cloves and rank high in clove production. The climate of these countries favours clove production. Madagascar ranks second in the production of this spice, producing 10,986 tons of cloves. The other leading clove production in Africa. India, Pakistan, and Sri Lanka in South Asia are also important clove production.

Table 1 World Clove Production (2017)

Country	Production (tons)
Indonesia	**109,600**
Madagascar	10,986
United Republic of Tanzania	6,850
Sir Lanka	3,920
Comoros	2,420
Kenya	1,800
Chin Mainland	1,200
India	1,047
Malaysia	219
Grenad	**33**

Source: Spies Statistical, 2020

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Indonesia holds the first position with the total production of 109,600 tons followed by Madagascar with 10986 tons. Kenya produces 1800 tonnes, India produced about 1047 tons. It is noted that Sri Lanka and Tanzania also produced the clove significantly.

Marketing

Indonesia is the leading producer and supplier of clove to the world. India is producing only1200 tons but the demand for clove is about 20000 ton. Therefore India needs to import clove from world marketing, especially from Indonesia. The states like Tamil Nadu, Kerala and Karnataka are the producing states of India. Still India has the scope of increasing the producing due to ever increasing demand for it.

Problems in clove production

One of the major problems in clove cultivation is termed Sumatra disease. This disease affect the leane of the clove tree and the leaves become yellow and dropping. Hence

the disease affect the tree, the because die in next three years. Another problems is form ours based, this caused the world in the tree, leads to the economic loss. Also it affected by the insect.

Conclusion

Clove is one of the important spices and occupies an important place in Indian lair chon, with medicinal value. Clove even used more in ayruveda treatment also uses as fain relied. Through India as one of the producing country of clove, her production is not meet out even the home demand. Therefore, Government of India has to take a serious measure to produce more. Which will increase foreign exchange reserve.

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AN ECONOMIC STUDY ON TOURISM IN TAMILNADU[52]

Dr. S. KARTHIKEYAN[53] & P. MOHAMMED HITHER ALI[54]

Introduction

Tamil Nadu Tourism is one of the most popular destinations for those seeking a rich cultural legacy, as well as natural beauty. religious encounter Tamil Nadu, with its breath-taking hill stations and vast stretches of sun-drenched beaches, caters to visitors who come not only to immerse themselves in the culture, but also to relax and unwind for a time. Tamil Nadu's coastline is 910 kilometres (600 miles) long, making it the country's third longest. There were a lot of foreign guests. Tamil Nadu's government is presently conducting peaceful promotional efforts and emphasising the importance of tourism. To support the state's existing tourism, Tamil Nadu must advertise itself as an appealing tourist destination on a global scale. Tourists can expect world-class services from the state of Tamil Nadu. Tamil Nadu is the state that attracts the most foreign tourists and the third most domestic tourists. To overcome all of the foregoing advantages for development, Tamil Nadu Tourism should become an exclusive product. Tamil Nadu is known for its enigmatic beauty and allure, and it will undoubtedly grab your gentleness. Foreign and domestic travellers can readily find a variety of suitable lodging options in Tamil Nadu, including boarding houses, tourist accommodations, seven-star hotels, five-star hotels, three-star hotels, budget hotels, and resorts. Tourists prefer to stay in Tamil Nadu accommodations, according to reports. In Chennai, Ooty, Coimbatore, Karaikudi, Trichy, Kanyakumari, Madurai, Tanjore, Dindigul, Rameshwaram, Kodaikanal, and Yercaud, tourists can find exquisite lodgings. Tamil Nadu has sixteen tourist information centres located at airports and railway stations throughout the state that provide information on tourism potential and services. Tamil Nadu Tourism refreshes the mind, instils contentment, moderation, and enjoyment in visitors. Tamil Nadu is seizing numerous opportunities to grow its tourism business.

Tourism in India

For a long time, tourism in India was considered merely a service industry. Due to its numerous advantages, it has recently been designated as an export industry. Though tourism came late to the party, it has developed at a breakneck pace, increasing its share of international tourist arrivals and foreign exchange revenues. With a contribution of 6.23 percent to the national GDP and 8.78 percent of total employment in India, it is now one of the largest service industries in the country. India will be a tourism hotspot from 2009 to 2018, according to the World Travel and Tourism Council, with the highest ten-year growth potential. In the 2007 Travel and Tourism Competitiveness Report, India was placed sixth in terms of pricing.

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Tourism – the scenario in Tamil Nadu: Tourism has risen to the top of the State's priority list in recent years. This is evidenced in increased budget allocations, growing public-private partnership activities, increased tourist arrivals, dynamic and strong promotion efforts, and so on. Tourism is being promoted as a popular movement and a key driver of entrepreneurship, poverty alleviation, and economic development. Tamil Nadu is India's Asian gateway, ideally located on Asia's growth axis. Providing well-connected, world-class infrastructure and amenities at tourism destinations will continue to be a priority in the next year.

Tamil Nadu is pleased to have achieved the number one position in the usage of information technology in tourism promotion. On 2-7-2004, the Hon'ble Chief Minister established an online reservation system with a payment gateway for TTDC's package tours and hotels. The TTDC is the first State Tourism Corporation to implement such a programme.

Objective

To study the potential and sustainability of tourism in Tamil Nadu.

Methodology

This study is based on secondary data collected from published sources.

Sustainability of Tamil Nadu Tourism

The Tamil Nadu Tourism Department is focusing on the development of sustainable tourism, and all future plans will be based on this model. The sustainable development technique entails that the natural, cultural, and other resources of Tamil Nadu Tourism are preserved. In the next days, all tourist simulations in Tamil Nadu will be built on eco-tourism, heritage tourism, pilgrimage tourism, and educational tourism models. Tourism is currently one of Tamil Nadu's most important industries, with more foreign tourists arriving each year. The Tamil Nadu Tourism Department also emphasised the importance of local media, stating that local media is very active in Tamil Nadu Tourism and has consistently highlighted various local issues. This strategy is crucial since the most important aspects of tourist development are the attractions and activities related to the natural environment, important history, and cultural patterns of the locations. It's encouraging to see that, when compared to other states, Tamil Nadu Tourism has a very high level of activities and participation from local media. Tamil Nadu is a sustainable tourist destination with towering temples, pristine beaches, churches, mosques, and scenic mountains and fauna. Another key aspect of long-term progress is the emphasis on pilgrimage-based tourism and quality tourism. This approach to tourism focuses on the process of predicting and development.

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Tamil Nadu Tourism in a Futuristic perspective

Three Range of Years

- Vision 2022
- Vision 2030
- Vision 2037

a. Vision Tamil Nadu Tourism 2022

Water & Sanitation, Dynamism, Transportation, Connectivity, Irrigation, Education, and Healthcare will all benefit from the expansion of Tamil Nadu tourism. Tamil Nadu Tourism will be one of Asia's most popular investment locations, as well as one of India's most well-organized and competitive. Tamil Nadu Tourism will be known as a modernization

hub thanks to the presence of world-class organisations in a variety of fields and the best human resources. Tamil Nadu Tourism will be a safe haven for all citizens and trade, encouraging free movement of ideas, people, businesses, and individuals from all over the world.

b. Vision Tamil Nadu Tourism 2030

According to the Tamil Nadu Tourism Development Plan "Vision 2030," surrounding villages should be established for the area's development. According to the vision paper, around Rs.18,940 crore should be invested in the development of high-tech tourism zones. The Tourism Department of Tamil Nadu plans to invest in improving government accommodations, star hotels, resorts, and budget hotels. To attract more foreign visitors, the state will open new parks, a bullet train, and a new international airport.

c. Vision Tamil Nadu Tourism 2037

The Tamil Nadu government's Vision 2037 manifesto emphasises that the natural resources state can be altered by future investment in "creative economy." The Tamil Nadu Tourism Administration is drafting a vision 2037 document for future growth, which is a highway map for future development, with vision 2037 in mind.

Conclusion

Tourism is a stress reliever that radically transforms a person's mentality. It aims to highlight the various aspects of Tamil Nadu in order to meet the needs of people of various ages. This has been made possible by a number of ground-breaking projects and activities. Many countries, including the Maldives, Sri Lanka, Thailand, Japan, Portugal, Switzerland, Argentina, Mauritius, Malaysia, and Oman, rely heavily on tourism due to the large inflow of money for businesses selling their goods and services, as well as the opportunity for employment in tourism-related service industries. Transportation services, such as airlines, cruise ships, and taxicabs, hospitality services, such as hotels and resorts, and entertainment venues, such as amusement parks, casinos, shopping malls, music venues, and theatres, are among these service businesses. India is a large country with a lot of natural beauty. As a result, tourism is quite vital in our country's major regions.

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A DESCRIPTIVE ANALYSIS OF SANITATION CONDITION IN TAMIL NADU[55]

Mr. K. NIRMALKUMAR[56] & Dr. V. SIVASANKAR[57]

Background

The health benefits are usually thought to be the most important effects of sanitation, but there are other factors to consider (Joanna Pearson 2008). Open defecation is the "riskiest sanitation practice of all," according to the World Health Organization. Almost 2.5 billion people around the world do not have access to a clean toilet. India accounts for 60% of the "global total" of people without access to toilets, forcing them to defecate in the open. Sixty percent equals 626 million people in real terms. As a result, India is the world's leading country in terms of open defecation. Indonesia, with a population of 63 million people, is a distant second. The vast majority of people who practise open defecation live in rural areas, with 949 million doing so in 2010. Despite the fact that the number of rural people practising open defecation has decreased by 234 million since 1990, "those who continue to do so tend to be concentrated in a few countries, including India," according to UNICEF and the World Health Organization's 2012 update report. Water and sanitation are two of the most basic human needs, as well as a critical component of development. It is an important source of food and economic growth. All of the earth's ecosystems require water and sanitation to function properly (Emomali 2003). The right to water and sanitation has a long history in international human rights treaties and political commitments, appearing implicitly or explicitly in a number of instruments as a precondition or necessary condition of other human rights (Scanlon et al 2004; Cullet 2013). Access to basic amenities such as safe drinking water and sanitation is not only a key indicator of a household's socioeconomic status, but also a critical component of people's health. The latter is inextricably linked to access to safe drinking water and adequate sanitation. Inadequate and poor-quality drinking water causes not only severe morbidity and large-scale mortality, but it also raises health-care costs, lowers worker productivity, and lowers school enrollment rates (Haq et al 2007). As a result of the prevalence of waterborne diseases, an estimated 180 million person–workdays are lost each year (Chaplin 2011). Diarrhoea is one of the most common and serious causes of child mortality and morbidity in low-income countries around the world (UNDP 2014). According to the World Health Organization (WHO), diarrhoea kills about eight lakh children under the age of five every year, mostly in developing countries (WHO 2007). Approximately 88 percent of this occurrence is linked to a contaminated water supply, poor sanitation, and/or poor hygiene (WHO 2004). Over the last two decades, many developing countries have invested in sanitation, water, and education infrastructure to reduce diarrhoea incidence. However, they have been ineffective, as the disease continues to kill 2,195 children every day, more than HIV, malaria, and measles combined (Liu et al 2012).

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Objective

To examine the sanitation condition and toilet facilities in Tamil Nadu.

Data

The study is based on secondary data taken from Census Reports.

Result

The district wise data on percentage of households not having toilet facility in 2001 and 2011 census are given in table 1. This table compares to 2001 and 2011 census data. In 2001 census report 64.8 percent of household not having toilet facility in Tamil Nadu, it was 51.7 percent in 2011 census around 13.1 percent it reduce in Tamil Nadu. In rural Tamil Nadu 2001 census 85.6 percent of household not have toilet facility. It was 2011 census 76.8 percent. Urban Tamil Nadu 2001 census report 35.7 percent of household not have toilet facility, it was 2011 census 24.9 percent approximately 10 percentage it reduced. Ariyalur district had the highest percent of household not having toilet facility. Chennai district is the lowest percent of households not having toilet facility.

Overall, 48.3 percentage households have toilet facilities available within premises (Table 2. It divided 14.4 percentage piped sewer system, 25.7 percent septic tank system, 1.1 percent other system, 5.7 percent pit latrine with slab, 0.3 percent pit latrine without slap, 0.8 percent night soil disposed into open drain, 0.1 percent night soil removed by human and 0.2 percent night soil serviced by animal. Overall Tamil Nadu 51.7 percent of household have toilet facility not available within premises. It divided 6 percent of household used public toilet and 45.7 percent of household used open defecation. Kanniyakumari district is a highest percent of household have toilet facility available within premises almost 87.5 percent. Ariyalur is a highest percent of household not have toilet facility within premises almost 81.9 percent.

Conclusion

When global figures are recalculated each year, India is home to a growing percentage of the world's remaining people who defecate in the open. 49.8 percent of Indian and 45.7 percent of Tamil Nadu population defecate in open in 2011. Putting up with open defecation kills hundreds of thousands of babies and stunts the development and lives of those who survive, as well as the Indian economy as a whole. Few households build affordable latrines, and many people who own latrines still defecate in the open; people in households with government-provided latrines are especially likely to do so. The health and human capital costs of open defecation rise as population density rises: germs spread more easily in high-density environments. Construction of latrines is insufficient to significantly reduce open defecation in Tamil Nadu, where it is most prevalent. The government's responsibility is not absolved by the government’s inability to construct latrines. A large-scale campaign is needed in and Tamil Nadu to change sanitation preferences and promote the use of latrines (Coffey Diane 2014).

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Table 1 District wise Percentage of Households Not Having Toilet Facility in 2001 and in 2011

India/ Tamil Nadu District	Number of Households		Rural		Urban		Total	
	2001	2011	2001	2011	2001	2011	2001	2011
India	**19,19,63,935**	**24,66,92,667**	**78.1**	**69.3**	**26.3**	**18.6**	**63.6**	**53.1**
Tamil Nadu	**1,41,73,626**	**1,84,93,003**	**85.6**	**76.8**	**35.7**	**24.9**	**64.8**	**51.7**
Thiruvallur	6,05,866	9,38,822	81.4	71.7	20.3	11.2	48.5	32.1
Chennai	8,27,811	11,06,567	0	0	10.2	4.4	10.2	4.4
Kancheepuram	6,18,170	9,93,809	85.2	70.7	25.6	14.4	53.8	34.5
Vellore	7,26,594	9,27,318	86.9	80.8	33	28.8	68.4	58.9
Thiruvannamalai	4,82,397	5,93,264	91	87.5	45.6	34.9	83.5	77.2
Viluppuram	6,32,884	8,04,343	91.1	86.8	47.3	34.4	83.3	78.9
Selam	7,18,556	9,18,899	89.9	85.4	51.6	45.1	73	65
Namakkal	3,87,488	4,77,757	84.6	68.8	56.5	45.4	74.9	59.3
Erode	5,30,591	6,58,734	79.1	66.3	49.7	36.2	65.3	51
The Nilgiris	1,78,702	1,98,922	67.8	57.7	50.1	41.1	57.8	48.1
Dindugal	4,55,447	5,63,172	87	81.1	53.2	42.6	75.7	66.7
Karur	2,32,854	2,87,848	88.6	77	48.8	32.9	75	58.8
Thirchirappali	5,51,471	7,00,852	86.2	76	34.2	25.8	63.2	51.5
Perambur	1,18,361	1,49,401	92.3	84.4	63.8	44.8	88.1	77.8
Ariyalur	1,65,214	1,98,106	92.7	85.8	61.6	48.7	89.6	81.9
Coddalor	5,03,057	6,37,422	87.9	80.1	42.2	31.4	73.9	63.9
Nagapattinam	3,37,514	4,12,656	82.2	68.8	42.7	30.3	74.4	60.5
Thiruvarur	2,70,898	3,27,971	81.7	68.5	39.9	27.2	74.3	60.3
Thanjavur	4,79,459	6,05,074	82.9	71.2	34.5	25.2	67.6	54.9
Pudukkottai	3,14,708	3,90,628	89.1	82.3	36.4	30.7	80.4	72
Sivaganga	2,80,607	3,41,960	88.1	76.1	34.7	21.5	74.2	59.3
Madurai	5,97,300	7,97,939	85.7	79.3	23.3	15.2	53.4	40.8
Theni	2,62,150	3,40,965	86.5	75.2	60.3	48	73	60.7
Virudunager	4,41,037	5,40,132	89.3	85.4	62.1	53.1	77.4	69.1
Ramanathapuram	2,70,147	3,28,955	87	77.5	41.7	29.4	76.9	63.4
Thoothukkodi	3,92,127	4,64,324	82.9	71.8	39.3	26.9	65.4	50
Thirunalveli	6,44,369	8,20,327	84.4	66.8	50.9	37.1	69.1	52.4
Kanniyakumari	3,71,200	4,89,201	39.6	16.9	32.2	11.6	34.8	12.5
Dharmapuri	2,95,980	3,80,924	90.9	89.3	52.2	41	85.6	81
Krishnagri	3,35,446	4,50,062	86.5	80.8	30	21.7	77.4	67
Coimbattor	6,74,712	9,45,943	84	66.7	31.9	22.1	48.6	33.3
Tiruppur	4,70,509	7,00,706	84.5	69.1	44.5	25	66.2	42.8

Source: 2001 and 2011 Census

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Table 2 District Wise Availability of Toilet Facility in Tamil Nadu (2011)

Tamil Nadu District	Improved	Un improved	Public Toilet	Open Defecation
India	44.1	2.8	**3.2**	**49.8**
Tamil Nadu	46.9	1.4	**6**	**45.7**
Thiruvallur	66.2	1.6	2.2	29.9
Chennai	95	1.2	1.9	1.9
Kancheepuram	64.3	1.2	1.9	32.5
Vellore	37.8	3.4	2.4	56.5
Thiruvannamalai	22	0.8	1.4	75.8
Viluppuram	20.5	0.5	1.6	77.2
Selam	31	4	11.2	53.9
Namakkal	39.9	1	15.5	43.8
Erode	48.1	0.9	9.1	41.9
The Nilgiris	49.4	2.5	11.4	36.7
Dindugal	32.2	1	8	58.7
Karur	40.3	1	5.5	53.2
Thirchirappali	46.2	2.2	8.3	43.1
Perambur	21.3	0.8	4.3	73.5
Ariyalur	17.7	0.4	1.8	80.1
Coddalor	35.5	0.7	2.1	61.8
Nagapattinam	38.8	0.7	2.6	57.8
Thiruvarur	39.2	0.6	3.5	56.8
Thanjavur	43.2	2	4.1	50.9
Pudukkottai	26.8	1.2	2.3	69.7
Sivaganga	39.9	0.9	3.7	55.6
Madurai	58	1.2	5.3	35.5
Theni	38.7	0.7	20.5	40.1
Virudunager	28.5	2.4	16.6	52.4
Ramanathapuram	35	1.5	3.3	60
Thoothukkodi	49.1	0.7	3.9	46.1
Thirunalveli	46.3	1.4	9.2	43.1
Kanniyakumari	86.1	1.2	5.4	7.1
Dharmapuri	18.5	0.6	2	79
Krishnagri	32	1	2.7	64.3
Coimbatore	65.8	0.8	11.1	22.2
Tiruppur	56.3	0.8	7.4	35.4

Source: 2011 Census

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RURAL DEVELOPMENT: A NOTE[58]

Dr. S. MEENAKSHI[59]

Introduction

India lives in villages. This adage which emphasizes the agrarian character of the Indian economy continues to be true to this day in spite of industrial development that has taken place in the last six and half decades since independence. The 2011 census estimates about 69% of the country's total population continues to live in rural India that neither have adequate land holdings nor alternate service opportunities to produce or procure essential commodities. In the absence of adequate employment opportunities, the rural people are unable to generate enough wages to sustain their livelihood. As a result, 40% families, who earn less than Rs.11,000 per annum are classified as poor even though government. Estimates are only 22%. Apart from lower income, rural people also suffer from shortage of clean drinking water, poor health care and illiteracy which adversely affect the quality of life. Presently, about 25% of the villages do not have assured source of drinking water for about 4-5 months during the year and about 70-75% of the water does not meet the standard prescribed by WHO. Poor quality drinking water is adversely affecting the health and diarrhea is an important cause of infant mortality.

Objective of the Study

To analyse the challenges of rural economy and to suggest possible ways to mitigate these problems.

Challenges of Rural India

- **Population:** Increasing population which causes severe pressure on natural resources and the environment.
- **Natural Resources:** Depleting natural resources, resulting in insecurity of food and employment, compelling about 40% of the rural population to live in poverty.
- **Pollution:** Pollution of the environment and climate change, are causing shortage of clean drinking water and creating adverse impact on agricultural production.
- **Education:** Poor access to education, resulting in low literacy and unemployment of the youth. While the average literacy rate in rural areas is around 50-65%, it is as low as 20-25% among women in backward areas. Education of girls was felt to be unnecessary in the past and this has seriously affected their quality of life. Illiteracy has also hindered their development due to lack of communication with the outside world. They are slow in adopting new practices, which are essential with the changing times Low literacy rate, particularly among women having adverse effect on their skills development, employment productivity, family welfare and education of their children.

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- **Health:** Poor health status due to lack of clean drinking water, hygiene, sanitation and drainage facilities; inadequate health care facilities, leading to high child mortality and morbidity; loss of labour productivity, economic loss, indebtedness and poor quality of life; The rate of infant mortality in rural India is marginally higher than in the cities on account of poorer access to safe drinking water, sanitation and health care support. Urban India has 15 times the number of beds and four times the number of doctors per capita compared to rural India. Not only is there an acute shortage of medical personnel, but doctors and medical workers are absent 40 per cent of the time in rural public health facilities.
- **Infrastructure:** Poor infrastructure for receiving timely information on development opportunities, market demand and prices for agricultural commodities, new technologies, forward and backward linkages, credit facilities and development policies of the government.
- **Globalization:** Liberalized trade regimes as well as more integrated and consumer driven agricultural and food markets are golbalising rapidly and driving innovations, forcing farmers to adapt or lose out. Poor farmers do not have the capacity face the cut throat competition and hence they are bound to perish.
- **Problems of Livelihood:** In India, although the contribution of agriculture to the Gross Domestic Product (GDP) is around 19%, in the absence of employment opportunities in industrial and service sectors, over 85% of the rural income is generated from agriculture, who spend about 75%-80% of their earnings on food. Agriculture is the major source of livelihood but most of the illiterate farmers have not been successful in cultivating their land economically. They have been treating agriculture as a family tradition. Over 12-15% of the rural families are landless and among the land holders, 69% are marginal farmers with less than 1 ha holding (17% of the total land) and about 21% are small farmers with 1-2 ha holdings (34% of the land). Thus about 90% families own less than 51% lands, with a per capita holding of 0.19 ha. Out of the 147 million ha agricultural lands, about 60 million ha are located in arid zones, which are mostly owned by the poor families. As the chances of crop failure on these lands is very high, the farmers generally do not invest in external inputs like improved seeds, fertilisers and plant protection measures and end up with poor crop yields, even during normal years.

Way Out

There are no universally accepted approaches to rural development. It is a choice influenced by time, space and culture. The term rural development connotes overall development of rural areas to improve the quality of life of rural people. In this sense, it is a comprehensive and multidimensional concept, and encompasses the development of agriculture and allied activities, village and cottage industries and crafts, socio-economic infrastructure, community services and facilities and, above all, human resources in rural areas. As a phenomenon rural development is the end-result of interactions between various physical, technological, economic, social, cultural and institutional factors. As a strategy, it is designed to improve the economic and social well-being of a specific group of people – the rural poor. As a discipline, it is multi-disciplinary in nature, representing an intersection of agriculture, social, behavioural, engineering and management sciences. Some of the strategies that are suggested are as follows:

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Assured Livelihood: While promoting various development programmes, the main objectives should be is to help the target family to come out of poverty, with in a shortest period. The dairy development programme has a gestation period of 3-4 years, till the newly born calf comes into milk production. In land based development programmes the gestation period may vary from 2 to 6 years, depending on the type of farming systems practiced by the farmers. In case of arable crop production, the gestation period is short due to short rotation crops while the fruit and tree crops take 5-6 years to generate income. While promoting this income generation activities there are two critical factors which affect the success of the programmes. Firstly the programme should be well planned to generate substantial income to enable the participating families to come out of poverty. Generally small farmers having poor quality land and livestock may not be able to earn substantial income with only one intervention. Hence multi-disciplinary programmes have the advantage. Similarly, small interventions such as kitchen garden, vermi-composting, homestead horticulture in isolation will not help the poor. These interventions can be helpful as a part of an integrated programme.

The other important aspect is to provide support during the gestation period. Many of the poor who do not have any resources even to procure their daily ration, are likely to neglect their development work, if no support is available in the form of assistance or wages to ensure their food security. Hence different short term income generation activities need to be designed till the income starts generating from the major interventions.

Women Empowerment: Involvement of women in all the development programmes right from the stage of project planning is essential. Although women represent 50% of the population, they also have the major responsibility of grooming children and procuring the basic needs required for food, fuel and fodder securities. Active participation of women in development programmes will help to identify their problems and reduce their drudgery.

Environmental Protection: In all the development programmes conservation of the natural resources and protection of the environment are essential, as these are critical for sustainable development. This is particularly important, while dealing with the poor as their primary objective is to earn their livelihood and the development organizations have the obligation to carefully design the programme to ensure environmental protection with income generation activities.

Blending Development with Research and Training: For effective implementation of various development programmes, the development programmes should be supported by applied research and training activities. The development programme without research back up is outdated and any research programme without development and extension outlets is academic. Training of the field functionaries and farmers is essential for effective transferring of technologies from laboratories to the field.

Water Resource Development: Development of water resources and wastelands are other important activities, having good potential for supporting the livelihood. However, with watershed development alone particularly the small farmers owning poor quality land cannot take advantage as they do not have the capacity to invest in land development and critical agricultural inputs. Hence they do not take active part in such programmes. Therefore the strategy should be to combine watershed management with development of low productive agricultural lands and wastelands owned by the weaker sections of the society.

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In all the watershed development programmes, involvement of the community right from the stage of planning will be a critical factor, for the success. Mobilising the community through entry point activities and establishing effective communication through SHGs and village level planning committees, participation of the community in resource identification and development should be the important elements of the programme. With watershed development, introduction of the improved agricultural practices such as use of certified seeds, promotion of timely tillage operations, integrated pest management, supply of micro-credit to procure inputs, setting up of grain bank to meet the emergency needs of the poor etc. can play a very significant role in building the confidence of the community and sustain their interest.

Infrastructure Development: Development of physical as well as social infrastructure plays an important in the overall advance of the rural economy by directly contributing to employment generation and asset creation. Improved network of physical infrastructure facilities such as well-built roads, irrigation, rail links, power and telecommunications, information technology, food storage, cold chains, market-growth centres, processing of produce and social infrastructure support, viz., health and education, water and sanitation, and veterinary services and co-operatives are essential for the development of the rural economy, especially in the era of liberalization, privatization and globalization (LPG).

Indigenization of Social Research: Most of our learning in the higher institutes is based upon hypotheses, concepts and theories evolved by western scholars including rural sociologists, which has limited application to our rural development. In the context of rural development, indigenization of concepts and theories are essential for understanding and resolving the issues that confront state governments, Panchayati Raj Institutions and stakeholders. This calls for Indigenization of social science research, particularly relating to rural areas. Such an approach, if adopted in social science research, is likely to provide solutions to problems of bringing about rural transformation at a faster pace.

Corporatization of the Rural Economy: Corporatization of the rural economy becomes more relevant in the changed globalized system, where market requirements of quality produce have to be met. The entry of the corporate sector will also help the farmers to diversify crops from wheat and rice to other crops. This can be done by providing awareness about quality inputs and their judicious use, ensuring their crop procurement, refrigeration, carrier, grading, cleaning, packing, branding and also helping in research and extension. The recent field experience of CRRID (Centre of Research and Rural Industrial Development) with Mahindra Subh Labh Services Limited (MSSL), Mumbai, showed that the farmers of the state are showing a keen interest to grow crops according to the requirements of the corporate sector, provided it protects the existing minimum returns and assures marketing of the produce.

Formation of a Globalized or Model Village: A model village is perceived as a village having all modern physical and social infrastructure facilities. A model village will facilitate human resource development through better education, health and training and generate employment avenues both in secondary and tertiary sectors. Initially funds for infrastructure building will have to be mobilized from government as well as non-government sources, such as non-government organizations, international funding agencies, non-resident Indians (NRIs), religious Institutions and other sources besides the village's income from its own sources.

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Consequently, for the maintenance and sustainability of public services, user's charges could be levied according to the social and economic position of the households. According to the concept of a globalized village, each village will be connected with modern information technology for better dissemination of information. This type of a village will have the potential of producing human resources catering to national as well as international requirements.

Role of NGOs and SHGs

Voluntary social services have been an integral part of the socio-cultural and religious ethos of our society from ancient times. The objective has been to increase human capacities by promoting non-economic factors such as education, health and nutrition, which in turn would speed up the process of economic development. The role of NGOs is both co-operative and complementary to the state. The existence of NGOs assumes importance in the context of rural settings, as living conditions have deteriorated. State-NGO partnership alone cannot resolve all the socio-economic problems, hence it has to be in co-ordination with all agents of social change, i.e., the state, local self governments, the corporate sector, academics and civil society groups.

NGOs can play a significant role in strengthening local self-government by facilitating interaction and co-operation with state departments and also acting as catalysts to effectively implement various departmental schemes. The role of voluntary agencies in the development of rural areas can be to supplement efforts of government for the upliftment of the poor and needy disseminate information about development schemes and programmes of the government to rural people; make people aware of the consequences of female foeticides and imbalance in sex ratio; mobilize financial resources from the community; help in upgradation of skills of rural youths for self-employment opportunities; facilitate the formation of self-help groups and micro-finance; ensure protection of women and children's rights and abolish ills of child labour; and, make available technologies in a simpler form to the rural poor.

SHGs: When individuals, on their own initiative, act in a conglomeration to meet their individual and common needs with the primary focus on self-reliance, it can be called a Self Help Group (SHG). The benefits of self-help groups are based on cooperation rather than competition. They provide benefits of economies of scale, cost effective alternatives for different financial services, collective learning, democratic and participatory culture and a firm base and platform for dialogue and co-operation. SHGs develop from a common binding force, common need, interest and concern, especially for the rural poor. It is this common binding force, which makes SHGs function more efficiently. The effectiveness of SHGs would be considerably enhanced if a symbiosis could be worked out between them and Panchayati Raj Institutions (PRIs). The key to this is the integration of SHGs with the democratically elected and empowered panchayats.

There is urgent need to work out a mechanism that will allow the SHGs and the PRIs to work in coordination and establish a system of supporting each other's work.

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PRODUCTION AND MARKETING OF MILLETS IN TAMIL NADU: AN ECONOMIC ANALYSIS[60]

A. SHANMUGAM[61]

Introduction

Millets are generally consumed by the people of low socio economic status. The reasons for limited utilization of millets are poor grain quality characteristics, such as rough texture, high fibre content, lack of gluten and typical flavour. The rather strong taste of millets is not generally preferred by persons with access to blander grains. Millets being small seeded contain large proportions of husk and bran requires dehusking and debraning prior to consumption. Despite, their nutritional superiority utilization of millets is restricted due to non-availability of refined and processed millets in ready to eat form. Hence, millets are confined to traditional consumers and to the people of lower strata. Millets some times are mixed with rice and fermented to make beer. A majority of the millet production (80%) although is used for human food, it is also used for feeding cage birds. The term millet is used for several small seeded annual grasses that are of minor importance in developed countries but a staple in the diets of African and Asian people. Minor millets are fair sources of protein and are limiting in lysine. In India, millets are used in many forms. Millet flour can be replaced for rice flour in the preparation of kali, dosa and idli. Millets are commonly used in the preparation of malt in many special ethnic foods. Millets may also be used to substitute other cereals in breakfast food, convenience foods, snack foods and also in various food preparations. The nutritive value of millets is comparable to other cereals with regard to protein, fat and mineral content but their utilization is limited due to the presence of various anti nutrients, poor digestibility of proteins and carbohydrates, low palatability, colour pigments, characteristic astringent flavour and poor keeping quality of processed products. Pearling or deranging of millets overcomes some of their constraints and improve its nutritional quality as well as consumer acceptability.

The minor millets includes finger millet (ragi, Eleusine coracana), foxtail millet (navane, Italian millet, Etaria italica), Little millet (Savi / Samai / Kutki panicum miliare), Barnyard millet (Oodahe / Banti, Echinocloa frumantacea), Proso millet (Baragu / Cheena French millet, Panivum miliacium) and Khodomillet (Haraka, Varagu, Paspalum scrobiculatum). Presently, small millets are cultivated in areas where they produce a more dependable harvest compared to any other crop. This has been largely responsible for their continued presence and cultivation in many parts of the world. These crops provide good nutrition and compare very well with rice or wheat. Further, small millets are superior in protective nutrients such as vitamins, minerals, dietary fiber, and essential amino acids and photochemical. In recognition of this, these grains are now considered as nutritious grains. Millet is often considered to be a **"poor man's cereal".** Millets will continue to be major food crops in several countries, especially in Africa and India. These grains will be used for traditional as well as novel foods.

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However, there is a need to look into the possibilities of alternative uses. Value addition to food has assumed critical importance in the last decade due to socio economic and industrial factors. Millets are amazing in their nutrient content.

Objectives of the Study

1) To study the growth in area, production and productivity of selected millets in Tamil Nadu and in Karur District.
2) To study the instability in the production of millets.
3) To work out the costs and returns associated with millets.
4) To analyze the resource use efficiency of various factors involved in millets.
5) To trace out the different marketing channels followed in the marketing of millets and find out the problems in marketing.

Trends in Area, Production and Productivity

It can be seen from table 1 that among the small millets, there is considerable presence of finger millet, followed by little millet. The presence of other small millets is meager. While there has been a decline in area of all the millets, there is significant increase in area under maize. This is mainly due to the strong industrial demand and the consequent stable attractive prices. The decline in area was not compensated by increase in productivity among the millets. Here, too, maize is an exception. No adequate comparative figures are available for small millets other than finger millet, but considering the enormous decrease in their production, a steep fall in consumption can be presumed.

Table 1 Trends in Area, Production and Productivity of Millets in Tamil Nadu

Name of the Crop	2009-10			2016-17			Change over one decade		
	Area in lakh ha	Prdn in lakh MT	Prdy in kg/Ha	Area in lakh ha	Prdn in lakh MT	Prdy in kg/Ha	Area in lakh ha	Prdn in lakh MT	Prdty in kg/Ha
Sorghum	3.172	2.748	866	2.385	2.22	931	-0.79	- 0.53	64.49
Pearl millet	1.25	1.529	1223	0.544	0.827	1520	-0.71	-0.70	297.02
Maize	0.729	1.184	1624	2.442	11.381	4661	1.71	10.20	3036.38
Finger millet	1.249	2.353	1884	0.823	1.609	1955	0.43	0.74	71.14
Foxtail millet	1411	652	462	1074	517	481	-337	-135	-19
Kodo millet	11345	16330	1439	5930	8805	1485	-5415	-7525	45
Little millet	48076	33060	688	22292	19682	883	-25784	-13378	195

Source: Department of Agriculture, Tamil Nadu

The overall fall in demand is often attributed to factors like changing food habits, growing urbanization, increased incomes, competition from other crops, millets being

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culturally stigmatized as 'poor man's crop', the time-consuming and back breaking dehulling process, especially for five small millets and the lack of 'modern' millet-based foods in the market. Furthermore, with only rice and wheat being supplied through the Pubic Distribution System (PDS), the imperative and economic rationale of including millets into the food basket is impaired.

It is not uncommon for millets to constitute 50% of total grain consumption with annual intakes of around 60 kg per capita. Parallel to the falling consumer demand for millets in their traditional form, new kinds of demands are rising, particularly in the baked products sector (biscuits, snacks etc.) and as niche health foods. For sorghum and pearmillet new demands are also coming from poultry and cattle feed producers and the potable alcohol industry.

Marketing Problems

The opinion on problems in marketing of finger millet revealed that nearly three fourth (73.33%) of respondents faced the problem of inadequacy in transport facility in the study area. The availability of market information was not a problem as for most of the farmers (80%) market information available was satisfactory. Payment for the produce was timely for 65 percent of farmers and it was regular for 35 percent of the farmers. All the sample farmers complained about violent price fluctuations for their produce in the market. Facility of processing was not available in the study area as reported by 80 percent of the respondents and only 10 percent and 8.33 percent of the respondents expressed that processing units availability was adequate and in adequate, respectively. Commission charges prevailing in the market were high as reported by sizeable proportion of the respondents (78%). The availability of storage facility was not a problem for 70 percent of farmers as this crop was not grown on large area and also the produce is not bulky in nature.

In another problem of storage indicated that non-availability of processing units was the very serious impediment in the study area as reported by 93.33percent of the farmers. The availability of storage and transport facility was inadequate for one-forth and two-third of respondents, respectively. Thus there is a need to improve the storage and transport facility in the vicinity of the farmers, as only ten percent and 33.35 percent of respondents were satisfied with available storage and transport facility. About two-third respondents were of the opinion that storage facility was not available. As for as market information is concerned, only one-third farmers have access to adequate market information, while it was inadequate as reported by 66.67 percent of respondents. This calls for the rigorous efforts on part of extension service by the State Department of Agriculture and the State Agricultural Universities to educate the farmers about how to access, use and take benefit out of the available market information. Farmers were getting payments for their produce in time as opined by 66.67percent of farmers and were also regular as opined by 33.33percent of farmers. Market prices of little millet crop were highly fluctuating as opined by two-third sample farmers, however only negligible proportion (8.33percent) of the farmers opined that prices were stable and one-fourth farmers were of the opinion that little millet prices showed little fluctuation. Commission charges paid were high as felt by the 35 of farmers and rest of the farmers opined that commission charges paid by them were moderate. The channel selected by them must account for minimum marketing cost and ensure higher share of consumer rupee. The selection of marketing channel depends upon quantity of marketable surplus

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available with the farmer, with holding capacity of the farmer, price structure, availability of infrastructural facilities etc.

Village trader, wholesale merchants and commission agents were the major agencies for farmers to sell their produce at the regulated market. Wholesale merchants (61.67percent) were the major agencies through which farmers routed their produce. Commission agents at the regulated market were the next important intermediaries for 21.67 percent of farmers for disposing their produce and remaining 16.67 percent farmers sold their produce to village traders. Better price, immediate cash payment and correct weighment were the strong reasons for selling their produce to this particular agency as opined by all the respondents who preferred wholesale merchants. In addition to this, spot payment method was responsible for selling their produce to these agencies as opined by 67.6 percent of the farmers. Lower marketing cost and previous agreement with these agencies were also responsible for selling their produce to this particular agency as reported by one-third of the sample farmers.

Finger millet producing sample farmers sold their produce to village traders, wholesale merchants and commission agents. The small quantity of produce for sale was the main reason for selling to village traders followed by immediate cash payment (85%), lower market cost (80%), social ties with intermediary (75%), absence of middlemen (40%) and correctness in weighment (30%). Better price (100%), immediate cash payment (100%) and correct weight (100%) were the main reasons for preferring wholesale merchant by another20-finger millet growing farmers. Three-fourth of the respondents opined that spot payment was also one of the important reasons for selling to wholesale traders and only one-fourth of the respondents preferred wholesale traders just because of their previous agreement. The opinions of the farmers about the reasons for selecting commission agents at the regulated market revealed that immediate cash payment was the most important reason as reported by all the respondents opted for this agency to dispose their produce. Availability of good transport facility and spot payment for the produce were the other important reasons for preferring commission agents as opined by 80percent of respondents. Correctness in weigment and better price were the other reasons for opting commission agent to sell produce by more than fifty percent of the respondents who marketed their produce through this agency.

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A SURVEY ON ATTITUDE TOWARDS POST OFFICE SAVING SCHEME IN PALANI TALUK[62]

Dr. P. GNANA SOUNDHARI[63] & C. NAVAMANI[64]

Introduction

Saving and investment are key requirements for growth and development of an economy. However, lack of savings and investments are common in developing countries. The issue of low levels of domestic savings is a major problem in developing economy because of high unemployment, low wages, engagement of a large proportion of the population in the informal sector and poor performance of the economy.

Methodology

This study is mainly empirical in nature based on primary data collected with the help of questionnaire. Pilot study was to test the quality of questions and confirm the feasibility of the study. After those suggestions from the pre-test were taken into account, the restructured questionnaire was prepared and used for collecting primary data.

Sample design

The research took 50 depositors of post office saving scheme randomly selected from Thamaraikulam village of Palani taluk in Dindigul district.

Objective of the Study

To know the attitude and satisfaction of depositors towards postal schemes.

Table 1 Socio-Economic Background and attitude of the Respondents

Variables		Respondents	Percentage
Age	Below 30	11	22
	30-45	22	44
	45-60	14	28
	Above 60	3	6
Gender	Male	36	72
	Female	14	28
Residence	Rural	49	98
	Semi urban	1	2
Marital status	Married	42	84
	Unmarried	8	16

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Variables		Respondents	Percentage
Educational Qualification	Illiterate	10	20
	High school	29	58
	High secondary	4	8
	Collegiate education	7	14
Occupation	Agriculture	15	30
	Business	8	16
	Government Employee	5	10
	House wife	8	16
	Others	14	28
Monthly Income	Rs.1000- Rs.5000	25	50
	Rs.5000 – Rs.10000	17	34
	Rs.10000- Rs.15000	5	10
	Rs.15000- Rs.20000	3	6
Type of house	Owned	47	94
	Rented	3	6
Family status	Nuclear	39	78
	Joint	11	22
Earning members of the Family	One	19	38
	Two	25	50
	Three	6	12
Surplus of Savings	Yes	49	98
	No	1	2
Purpose of saving	Safety	14	28
	House construction	3	6
	Child's welfare	26	52
	To meet elderly needs	6	12
	Other's	1	2
Sources of income	Salary income	2	4
	Business income	4	8
	Agricultural income	18	36
	Children's income	2	4
	Parent's income	8	16
	Spouse income	7	14
	Other's	9	18

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Variables		Respondents	Percentage
Savings per month	Below Rs.1000	42	84
	Rs.1000- Rs.2000	7	14
	Rs.2000- Rs.3000	1	2
Duration of savings	Below 1 year	3	6
	1-3 years	10	20
	3-5 years	17	34
	Above 5 years	20	40
Sources of information of savings	Friends / Relatives	17	34
	Advertisement	4	8
	Agents	2	4
	Post office employees	21	42
	Parents	5	10
	Others	1	2
Preferred schemes	Post office savings account	10	20
	Recurring deposit accounts	32	64
	Postal insurance	5	10
	Sukanya Sumirithi accounts	3	6
Utilization of matured amount	No reinvestment	37	74
	Investment in other scheme	3	6
	Invest in other investment	5	10
	Re deposit in same scheme	5	10

Source: Computed data

Table 2 Satisfaction of respondents in Post Office Saving Scheme

S. No.	Aspects	Strongly agree	Agree	Disagree
1	Procedure is easy to follow	1 (2)	45 (90)	04 (8)
2	Various schemes available	-	42 (84)	08 (16)
3	Interest rate of high	-	29 (58)	21 (42)
4	Maturity period is accepted	-	42 (84)	08 (16)
5	Available loan against deposit	-	43 (86)	07 (14)
6	Terms &conditions are accepted	-	45 (90)	05 (10)
7	Prompt encashment after maturity	-	41 (82)	09 (18)
8	No hidden cost	-	39 (78)	11 (22)
9	Switch over facility available	-	41 (82)	09 (18)

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S. No.	Aspects	Strongly agree	Agree	Disagree
10	Security guaranteed	6 (12)	43 (86)	01 (2)
11	Agent's service is good	3 (6)	43 (86)	04 (8)
12	Tax benefits is available	1 (2)	45 (90)	04 (8)
13	Beneficial to school children	1 (2)	47 (94)	02 (4)
14	Locking period is reasonable	-	42 (84)	08 (16)

Source: Computed data, Figures in parenthesis are percentages

Major Findings

- Almost all the respondents (98%) are found having surplus income which can be saved.
- Around 52% told that they save for the welfare of their children.
- Majority (84%) of respondents saved below Rs.1000 per month. The average savings per month came to Rs.680.
- Majority of respondents stated that location, adequate counters and queue system in Post Office are good. At the same time, parking, seating and drinking water facilities should be enhanced in the premises of post office.
- Around 40% of the respondents deposited in post office saving scheme for above 5 years. Mostly they got information about post office saving scheme through the employees of post office.
- Majority (64%) of the respondents preferred recurring deposit account.
- 90 percent of respondents agreed to the procedure of post office saving scheme is easy to follow, tax benefits are available and accept terms and conditions of post office saving schemes.
- Nearly 84 percent of respondents revealed that the length of maturity period is acceptable.
- Majority (86%) of respondents agreed that there is availability of loan against deposit, security is guaranteed and agent service is good.
- More than 80 percent of the respondents found as satisfied with prompt encashment of saved amount after maturity.
- Almost all the respondents (94%) utilized the maturity amount of post office saving schemes for education of their children and marriage of their wards.

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Conclusion

Today postal department has to equip by improving its service and saving schemes to satisfy the customers. In the light of changing environment, it has to constantly upgrade its knowledge of the internal and external environment to understand the customer relationship properly. Savings is important for human life as savings gives life security. One of the main motives of the department of post is to uplift the savings of the people. Savings not only help the people, but also help for the economic development. The post offices are the only public organizations which are more intimately bonded with human relations than any other government department. It is universally recognized as a facilitator of communication.

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A STUDY ON RURAL DEVELOPMENT IN TAMILNADU[65]

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Introduction

Tamil Nadu is a country basically with the agricultural economy. The large proportion of population depends on the agriculture for their livelihood and they contribute to the state's economy. To increase productivity and employment generation in the sector, there is a need to bring about structural changes, primarily based on the land reforms, as support prices and provision of cheap credit do not help beyond a point. Experience has shown that providing the poor with access to land is not anti-growth (Somers 1999). In the rural growth strategy, the dynamism of small family farms plays an important rule (Somnath Chatterjee 2016).

Tamil Nadu is an agricultural economy. Agriculture is the backbone of the development of the Tamil Nadu economy. The role of agriculture in shaping the economy could be reflected from the large proportion of population that depends on agriculture for their livelihood and the significant contribution of agriculture to the state income (Dhas, Albert Christopher 2012).

Rural areas play traditionally important role for the Indian economy and maintaining social stability. (Meenakshi et al. 2014) The development of most of them is entirely dependent on natural resources in the area, so that the economy of the rural areas is specialized in a limited number of industries - agriculture, livestock, forestry, fisheries, mining, rural tourism. The rural society of India is very much backward. It's backwardness is very much due to the several problems that haunt the society. This paper aims at finding out the problems in rural society, need for the rural development and solutions to solve the rural problems. In Tamilnadu the cities has grown immensely in the last 20 years whereas the rural areas have not seen that kind of development (Chakraborty and Seth 2015). This study discusses about the rural development, need for the development of rural areas, scope of development, problems in rural areas, solution to solve those problems, central schemes implemented in Tamilnadu, state schemes introduced are discussed.

The study deals with development of the rural areas also deals with rural development schemes implementation is to improve the standard of living of people living rural areas.

Rural Development in India

Rural development is a topic that is pretty easy to understand but hard to implement. It focuses upon the upliftment and development of the sections of rural economies, that experience grave poverty issues and effectively aims at developing their productivity. It also emphasizes the need to address various pressing issues of village economies that hinder growth and improve these areas. Some areas that need urgent attention for Rural Development in India are:

- Public health and sanitation
- Literacy

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- Female empowerment
- Enforcement of law and order
- Land reforms
- Infrastructure development like irrigation, electricity, etc.
- Availability of credit
- Eradication of poverty

Need for Rural Development in India

The rural economy is an example of an agrarian economy. Although farming and agriculture are one of the most important primary activities, the problem lies in the fact that they share in the GDP of the agriculture sector is on a constant decline. At the same time, about two-thirds of India's population depends on agriculture. As a result, the productivity is not up to the mark, with conditions only getting worse.

Moreover, public investment declined since 1991 coupled with a lack of adequate infrastructure, credit, transport, employment, etc. Henceforth the agricultural output has grown at only 3.2% during 2007-2011. All these factors have been denting the process of development. Therefore there is a need to focus on rural development and not just urban development.

Implementation of Rural Development Schemes

The Ministry of Rural Development, inter alia, is implementing Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), Deendayal Antyodaya Yojana – National Rural Livelihoods Mission (DAY-NRLM), Deen Dayal Upadhyay – Gramin Kaushalya Yojana (DDU-GKY), Pradhan Mantri Awaas Yojana – Gramin (PMAY-G), Pradhan Mantri Gram Sadak Yojana (PMGSY) and National Social Assistance Programme (NSAP) through State Governments/ UT Administrations to bring about overall improvement in the quality of life of the people in rural areas. Implementation of these programmes generates direct or indirect employment opportunities, make rural youths employable in the open market through skill development and enable them undertake self-employment enterprises. Under MGNREGA, 235.15 crore, 235.64 crore and 234.27 crore person days of unskilled employment were generated during 2015-16, 2016-17 and 2017-18, respectively. During 2018-19, 85.61 crore (as on 27.07.2018) person days of unskilled employment has been generated.

Keeping in view the importance of rural development programmes, the budget for rural development schemes has been enhanced substantially from Rs.58,623.08 crore during 2013-14 to Rs.1,12,403.92 crore during 2018-19. Accordingly, allocations to States have also increased. The allocation to States/UTs is made on the basis of the Annual Action Plan prepared by them and approved by the Empowered Committee. Rural development programmes have direct and indirect bearing on poverty alleviation which further intensifies with the increased budgetary allocation. The expenditures made on the major rural development programmes during last three years and current year are given as under.

Scope and Importance of Rural Development

Rural development is a dynamic process, which is mainly concerned with the rural areas. These include agricultural growth, putting up of economic and social infrastructure, fair wages as also housing and house sites br the landless, village planning, public health, education and functional literacy, communication etc.

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Rural development is a national necessity and has considerable importance in India because of the following reasons.

About three-fourth of India, population live in rural areas... rural development is needed to develop nation as whole.

Nearly half of the country's national income is derived from agriculture, which is major occupation of rural India.

Around seventy per cent of Indian population gets employment through agriculture.

Bulks of raw materials for industries come from agriculture and rural sector.

Increase in industrial population can he justified only in rural population, motivation and increasing the purchasing power to buy industrial goods.

Growing disparity between the urban elite and the rural poor can lead to political instability. The main objective of the rural development programme is to raise the economic and social level of the rural people.

Discussion

Welfare of a considerable part of the State depends of development of rural areas. The country has fertile soils and favourable climatic conditions for growing different crops which on suitable farming practices can produce higher yields. Much of the Tamilnadu's nature is preserved and allows the development of alternative and rural tourism. These natural resources are found as option for appropriate measures by the state and initiative by the people living in rural areas to achieve the desired social and economic development. The modernisation of agriculture will be the best suggestion to improve the rural areas in Tamilnadu (Meenakshi et al., 2014). By improving the agriculture the farmers will develop intern will lead to the development of rural economy.

Conclusion

The rural economy is an example of an agrarian economy. Although farming and agriculture are one of the most important primary activities, the problem lies in the fact that the share in GDP of agriculture sector is on a constant decline. At the same time, about two thirds of India's population depends on agriculture. As a result, the productivity is not up to the mark, with conditions only getting worse. So in order to develop the rural areas the agriculture sector must be improved. Rural development is the process of qualitative and quantitative changes to improve the conditions in rural regions. To develop a stronger economy the rural areas must grow. Rural areas are still bound by many problems such as the nourishment, illiteracy, unemployment and lack of basic infrastructure like schools, colleges, hospitals, sanitation and etc. This has led to youth moving out of villages to work in cities. Our villages need to grow equally as cities and standard of life has to improve for inclusive growth to happen. If rural areas are poor, India will be poor. So to bring out the rural areas and develop them, the rural development is the need.

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RESURGENCE OF AGRICULTURE WITH REFERENCE TO MANGO CULTIVATION, MADURAI DISTRICT, TAMIL NADU[1]

Dr. V. SRIMAN NARAYANAN[2] & V. SAMINATHAN[3]

Introduction

Mango (Mangiferaindica L.) having a place with Family Anacardiaceae is the most essential monetarily developed natural product yield of the nation. It is known as the ruler of organic products. India has the most extravagant accumulation of mango cultivars. Development of mango is accepted to have begun in South East Asia. Mango is being developed in southern Asia for almost six thousand years.

International Scenario

The aggregate worldwide region under mango is 43.69 lakh ha and the worldwide creation is to the tune of 312.51 lakh ton. India positions first among world's mango delivering nations representing about 46% of the worldwide region and 40% of the worldwide creation. Other significant mango delivering nations with their rate share in the worldwide creation incorporate China (11.8%), Thailand (5.8%), Mexico (5.4%), Pakistan (5.1%), Indonesia (4.5%), Brazil (4.3%), Philippines (3.2%), Nigeria (2.6%) and Egypt (1.2%). Overall creation is for the most part moved in Asia, representing 75% of the worldwide generation. The world exchange mango comprises of a fare of 9.29 lakh ton esteemed at 6189.17 lakh US$ and imports to the tune of 7.93 lakh ton evaluated at 7592.35 lakh US$.

National Scenario

India's offer is around 40% of world creation of mangoes i.e. 12.5 million ton as against world's generation of 31 million ton (2006). The state shrewd region, creation and efficiency of mango is given in Table 1. Statewise Area, Production and Productivity of mango in India.

Table -1

Statewise Area, Production and Productivity of mango in India

Name of the state	Are (000'ha)	Production (000' t)	Productivity (t/ha)
Andhra Pradesh	399.3	3194.3	8.00
Uttar Pradesh	251.5	2673.3	10.60
Karnataka	124.5	1236.8	9.90
Bihar	140.2	1222.7	8.70
Gujarat	96	772.1	8.00
Maharashtra	444.5	638.6	1.40

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Name of the state	Are (000'ha)	Production (000' t)	Productivity (t/ha)
Tamil Nadu	125.1	537.8	4.30
West Bengal	70.1	513.3	7.30
Kerala	88	511.1	5.80
Orissa	125.3	428.8	3.40
Others	156.2	809.1	5.20
Total	2020.7	12537.9	----

Source: ***NHB - 2012-13***

State Scenario

In Tamil Nadu, Mango is developed in around 125104 ha with generation of around 537780 tonnes with normal profitability of 4.30 t/ha. Significant mango developing locale are Dharmapuri, Krishnagiri, Vellore, Dindigul, Thiruvallur, Theni and Madurai.

Review of Literature

Biswas and Lalithkumar in their article uncovered that conventional planting technique, bother the board of the mango development are advance plant supplements. Inappropriate land readiness and water system watches out for the low yield of mango generation.

Objectives

1. To examine the natural strategies for mango development in Madurai region.
2. To offer ailment the board practices to the mango development.

Natural Farming

Natural cultivation is a harvest creation technique which empowers reasonable agribusiness by upgrading the organic cycles in nature. It is focused at creating sound, nutritive, contamination free sustenance augmenting the utilization of on ranch assets and limiting the utilization of off-cultivate assets. It tries to maintain a strategic distance from the utilization of synthetic supplements and pesticides. There is no distributed information accessible for region under Organic mango. Natural mango is being rehearsed by individual business people and NGOs in disengaged pockets of Theni, Kancheepuram, the Nilgiris, Dindigul and Madurai areas.

Land Preparation

The land is set up by normal furrowing, frightening and leveling. A delicate slant is given to encourage legitimate water system and incite seepage to keep away from the unsafe impacts of water stagnation. In the wake of stamping of the focuses for the plants, pits of 90X90X90 cm are burrowed amid summer months. This task is finished by using a planting board with the goal that exact area of the plants amidst the pit stays undisturbed. While burrowing of pits, it is basic to keep the topsoil and subsoil independently in two stores close to each pit for two to about a month. This aides in uncovering the hurtful soil life forms to enduring offices, giving better air circulation to the root zone and in making arrangement for dietary prerequisites for solid improvement of the dirt.

Separating

Separating fluctuates from 7 m to 10 m in any case. These much of space is essential for high yield of mangoes.

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Planting Material

Mango is proliferated by inarching and facade uniting, yet recently, epicotyl and softwood joining supplanting these two strategies. As respects, choice of root stock, explore trails demonstrate that polyembroyonic cultivar Vellaikolambam altogether diminishes the covering size significantly without decreasing creation. Planting material is secured from nurseries, which spread the planting material either by natural or concoction implies. Be that as it may, it is desirable over acquire planting material from natural sources.

Planting

It is finished with the coming of storm. The planting season could be July to December, contingent on the rainstorm and accessibility of water system offices.

Water Management

The water necessities for the most part rely upon the age, soil type and atmosphere. In any case, youthful plants upto 2 years ought to be watered frequently. The recently planted unions require around 25-30 liters of water each day. Inundating the adult trees after organic product set at 10-days interim expands their yield. Mango producers generally practice dribble water system in order to power over watering and furthermore to flood a bigger zone with better administration rehearses.

Weeding

It is desirable over select a site, which is free from genuine weed issues. Mulching with straw amid the initial couple of long stretches of foundation might be valuable in controlling weeds. In more seasoned mango plantations, weed the executives is less hazardous because of shading and leaf litter.

Pruning

Pruning mango tree is imperative for tree estimate control and to enhance the natural product shading. Basically, tree pruning and covering the executives is same for natural or regular creation. Pruning is done to open up the structure to permit great wind stream and satisfactory inner light. It additionally limits illness hazard and aids great natural product colouration. Inner pruning to expel dead wood can be vital to help decrease the occurrence of sickness like stem end decay.

Mannuring

The fundamental rule of natural yield creation is that "sound harvests develop from solid soil". All around adjusted, organically improved soil frames the premise of natural generation. Subsequently manufactured composts and substance pesticides and herbicides are not allowed and can be inconvenient to naturally dynamic solid soil. The primary contrast from customary framework is that inputs are utilized keeping in view the organic way to deal with deal with the dirt richness.

Management

The imperative sicknesses of mango are Powdery buildup, Anthracnose, Stem-end spoil, and Sooty form. Proposed measures are as per the following:

Fine Mildew

It is a contagious illness caused by Oidiummangiferae and can obliterate the product. Its rate is supported by high dampness joined by shady climate and low night temperatures

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amid the period between panicle advancement and organic product set. It is described by the presence of grayish white fine sprout on the blossom buds and organic products. Need based showering of Horsetail/Casuarina extricate helps in controlling the sickness.

Anthracnose

It is a contagious sickness and happens particularly in damp and high precipitation zones. The trademark side effect is the presence of dark necrotic territories on the influenced parts. Great shelter the board and tree sustenance/soil the executives, close checking and utilization of copper hydroxide and potassium bicarbonate showers help in controlling the sickness.

Anthracnose Stem End Rot

Evacuating dead wood, great covering the board and tree sustenance/soil the executives helps in controlling the infection. It is accounted for that utilization of calcium to the dirt as gypsum at low rates, 2-4 kg for every tree before blooming lessens the seriousness of inward organic product issue altogether. Agriculturists are additionally applying some industrially accessible bio-pesticides.

1. Two splashes of Cow Horn Silica (BD-501) at blooming and organic product advancement arrange.
2. Biodynamic tree glue/bovine compost glue for control of gummosis and bite the dust back.
3. Spraying of Horse tail (Equisetumarvensis)/Casuarina leaves remove for control of contagious sicknesses in climbing moon period.

It is accounted for that in Uttar Pradesh, utilization of bovine waste glue has nearly supplanted the shower of Copper Oxychloride for the control of bite the dust back in revived old mango plantations. It is likewise successful in controlling anthracnose and control of stem borer.

POST HARVEST TREATMENT

Dunk the natural products in 520C heated water following harvest for 5 minutes pursued by 8% plant wax to decrease anthracnose sickness in mango amid capacity. When all is said in done organic product requiring just momentary capacity before retail deal are probably not going to experience the ill effects of parasitic separate and post reap fungicides may not be fundamental. For longer stockpiling of mangoes a fungicide treatment is normally required. Be that as it may, compelling natural treatment for post-gather parasitic breakdown is yet to be built up. The vital pre and post-reap rehearses are:

1. Produce from a solid tree in a very much overseen plantation with great cleanliness
2. Grow with sufficient calcium and different components
3. Do not expose to over the top N amid natural product improvement and maturing
4. Pick at the right phase of readiness

Conclusion

Organic farming promotes more yield and sustainable production in mango cultivation. Organic and disease management are main factors to the mango production. Traditional methods and varieties are mostly encourages the output of mango yield organic manures provide more nutrient to the plant.

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AN ECONOMIC ANALYSIS OF ONION CULTIVATION AT VELLALAPATTI VILLAGE IN MUSIRITALUK OF TIRUCHIRAPPLLI DISTRICT[4]

Dr. K. PRAKASAM[5]

INTRODUCTION

India needs 6500 tonnes of onion seeds annually for covering 8 lakh hectares area. Organized sector contribute around 54% of the total seed requirement, produced by maintaining proper isolation distance and rest is met by farmers own seeds, often produced without meeting isolation requirement. Therefore, it becomes important to increase the supply of quality seed through the efficient use of the technology. Improved seed contributes substantially to enhance crop yield as high as 30%. Keeping the above in view, the present experiment was envisaged to work out the most profitable bulb size and planting time for economically successful onion seed production. This paper is focused on An Economic analysis of onion cultivation at Vellalapatti village in Musiri Taluk of Trichirapalli District.

OBJECTIVES OF THE STUDY

1. To study about the area, production and productivity of small onion from 2000-01 to 2016-17 in India.
2. To analyses the cost and benefit of small onion cultivators at Vellalapatti Village in Musiri Taluk of Tiruchirapplli District.
3. To find out per acre's net return for small onion cultivators in the study area.

The following hypotheses have been framed below based on the above objectives.

HYPOTHESES

1. There is no significant differences between area, production and productivity of small onion in growth rate in India.
2. There is no significant differences in cost and benefit ratio among small onion cultivators.
3. There is no significant differences for per acre's profitability among small onion cultivators.

STATEMENT OF PROBLEM

Onion is a cash crop so it has importance in the life of farmers. Tiruchirappalli District has been most suitable for onion crop. The natural condition of Tiruchirappalli District is also onion support so many farmers talk this crop. Agricultural produce market committees in the distract look after the interest of onion producing farmers. This crop has multisided effects. It gives benefit to farmers, it provides employment to landless labours and also to farmers of small holding in the District. Many other people get employed as merchants and traders of onion. Not only this but many other people get employment by providing many commercial and other allied services in the market.

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METHODOLOGY

This study is based on both primary and secondary data. The former was collected from the fifty respondents at random as a sample size at Vellalapatti village in Musiri taluk. The latter was collected from the journal and magazine and website in which thirteen years data have been referred and taken i.e. (From 2000-2013). The statistical and mathematical tools have been work out namely. Benefit cost ratio, trend line (least square method) and average growth rate and correlation. In addition the Bar and Pie charts and other figures relating to growth rate have been drawn.

RESULT AND DISCUSSION

Table No. 1

Classification of farmers on the basis of size of land holding in the study area

S. No.	Classification of Farmers	Frequency	Size of land holding in acres	Percentage of Farmer	Acreages of onion cultivation per farmer
1	Marginal farmers (0-1 acres)	37	34	74	0.92
2	Small farmers (1-2.5 acres)	8	17	16	2.13
3	Medium farmers (2.5-5 acres)	3	11	06	3.67
4	Large farmers (above 5 acres)	2	13	04	6.5
	Total	**50**	**74**	**100**	

Source: compiled from primary data

The above table no. 1 depicts that the classification of farmers on the base of size of land holding and acreage of onion cultivation for per farmer at Vellalapatti village in Musiri Taluk of Tiruchirapalli District. According to it, 37 farmers out of 50 are marginal farmers who are possessing 34 acres of land which constituted to 74% but their acreage for cultivation of onion per farmer is in 0.92 acre and the rest of them are small farmers, medium farmers and large farmers who are possessing 17 acres land, 11 acres of land and 13 acres of land which constituted to 16%, 06% and 04% respectively. But these farmers' acreage have differed among them viz., 2.13 acreage for small farmers, 3.67 acreage for medium and 6.5 acreage for big farmers.

Table No. 2

The Onion Production from 2000-01 to 2017-18 in India

Year	Production (million tones)	X-x	X^2	XY	YC (y – yc = 0) Additive method
2000-01	4.72	-6	36	-28.32	2.4
2001-02	5.25	-5	25	-26.25	3.7
2002-03	4.21	-4	16	-16.84	5.0
2003-04	6.26	-3	09	-18.81	6.3
2004-05	7.76	-2	04	-15.52	7.6
2005-06	9.43	-1	01	-09.43	8.90

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Year	Production (million tones)	X-x	X^2	XY	YC (y – yc = 0) Additive method
2006-07	10.85	0	00	0	10.20
2007-08	13.90	1	01	13.90	11.50
2008-09	13.57	2	04	27.14	12.80
2009-10	12.16	3	09	36.48	14.10
2010-11	13.37	4	16	53.48	15.40
2011-12	14.39	5	25	71.95	16.70
2012-13	16.81	6	36	100.86	18.00
2013-14*	19.30	7	49	-	19.30
2014-15*	20.6	8	64	-	20.6
2015-16*	21.90	9	81	-	21.90
2016-17*	23.20	10	100	-	23.20
2017-18*	24.50	11	121	-	24.50
N=13	∑y=132.69	∑x=0	$\sum x^2$=182	∑xy=236.18	∑yc=132.6

Source: (nhrdf.org)

Note: * indicates estimated production compiled from secondary data

YC = 10.20 + 1.30x

Estimated production of onion for the year of 2020-2021 will be 28.40 million tones.

The above table 2 very clearly depicts that the time series analysis for the small onion production in India. According to it the production of small onion is slightly volatility in India in the year 2002-2003 and between 2008-2010 which can be shown with help of least square method and trend analysis figure. The remaining years the production of small onion is slightly raised i.e. 2003-2007 and 2010-2013 periods. The prediction of small onion from 2014-2015 to 2020-2021the period also will be slightly raised i.e. yc = 28.40 million tonnes. The following reasons the small onion production volatility: (i) Due to monsoon failures and varied production among the states in India. (ii) The small onion price are varied according to the area, varieties and years. (iii) Scarcity of labour problem and crop diversification. The following reasons for the small onion production has slightly raised (i) The onion is a cash crop. (ii) It gives benefit to the farmers by crop has multisided effects. (iii) It provide employment to farmers of small holding of land and traders of onion. (iv) Increase in onion export activities and employment opportunities increased and thereby income of both farmers and traders have increased.

Table No. 3

Area and production of small onion in India during The period from 2000-01 to 2012-13

S. No.	Area (in million hectors) (X)	Small Onion Production (in million tones) (Y)	X-x	X^2	Y-y	Y^2	XY
2000-01	0.42	4.72	-0.32	-5.49	0.1024	130.1401	1.7568
2001-02	0.50	5.25	-0.24	-4.96	0.0576	24.6016	1.1904
2002-03	0.42	4.21	-0.32	-6.00	0.1024	36.0000	1.9200
2003-04	0.55	6.27	-0.16	-3.94	0.0256	15.5236	0.6304

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S. No.	Area (in million hectors) (X)	Small Onion Production (in million tones) (Y)	X-x	X^2	Y-y	Y^2	XY
2004-05	0.61	7.76	-0.13	-2.45	0.0169	6.0025	0.3184
2005-06	0.70	9.43	-0.04	-0.78	0.0016	0.6084	0.0312
2006-07	0.77	10.85	+0.03	+0.64	0.0009	0.4096	0.0192
2007-08	0.82	13.90	+0.08	+3.69	0.0064	13.6161	0.2952
2008-09	0.83	13.57	+0.09	+3.66	0.0081	11.2896	0.3024
2009-10	0.76	12.16	+0.02	+1.95	0.0004	3.8025	0.039
2010-11	1.06	13.37	+0.32	+3.16	0.1024	9.9856	1.0112
2011-12	1.09	14.39	+0.35	+4.18	0.1225	17.4724	1.463
2012-13	1.05	16.81	+0.31	+6.6	0.0961	43.5600	2.046
∑N=13	∑X=9.55	∑Y=132.69	∑x= -0.01	$\sum X^2$= -.04	∑y= 0.6433	$\sum Y^2$=213.012	∑XY= 11.0232

Source: Compiled from secondary data (nhrdf.org)

r = 0.94

The above table 3 shows that the degree of relationship between area and production of small onion in India. According to it, there is a high degree of positive correlation exits between area and small onion production in India. i.e. 'r' value = 0.94 which indicate that more than 94% the small onion production is function of area of land and remaining 6% depends on other variables namely irrigation, fertilizers, farm yard, man power etc.

Table No. 4
The Growth Rate of Area, Volume of Production and Productivity of Small Onion in India from 2000-01 to 2012-13 in India

Year	Area in million hectors	AGR for Area %	Small onion Production in million tones	AGR for Production of small onion %	Productivity (k.g/ha)*1000	AGR for productivity %
2000-01	0.42	-	4.72	-	11238.09	-
2001-02	0.50	19.05	5.25	11.23	10500	-7.02
2002-03	0.42	-16	4.21	-19.81	10023.80	-4.75
2003-04	0.55	30.95	6.27	-93.73	11400	12.07
2004-05	0.61	10.91	7.76	23.76	12721.31	10.38
2005-06	0.70	14.75	9.43	21.52	13471.42	5.67
2006-07	0.77	10	10.85	15.06	14090.90	4.40
2007-08	0.82	6.49	13.90	28.11	16951.19	16.87
2008-09	0.83	1.22	13.57	-2.37	16349.39	-3.68
2009-10	0.76	8.43	12.16	-10.39	16000	-2.18
2010-11	1.06	39.47	13.37	9.95	12613.20	-26.85
2011-12	1.09	2.83	14.39	7.63	13201.83	-3.12
2012-13	1.05	3.67	16.81	16.82	16009.52	17.54

Source: compiled from secondary data (nhrdf.org)

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The above table 4 analyses the area, volume of small onion production and its productivity in India during the period from 2000-01 to 20012-13. According to it, the area, volume of production both have volatilized from year to year similarly the productivity also varied slightly and negative growth rate from 2003-04 to 2006-07 and 2001 -03 and 2008-12 respectively. Except from 2003-04 and 2007-08 and 2012-13. Both annual growth rate of area and volume of production have significant volatilized in growth rate in area the year of 2004-05, 2006-09 and 2011-12 and become negative growth rate in area from 2002-03 2009-10 and 2012-13. The maximum average growth rate in area have achieved in the year 2010-11 i.e. 39.47% likewise the small onion production also volatilized in the year 2005-07 and 2010-13 and its average production becomes negative in the year of 2003-04 and 2008-10 i.e. constituted to -93.73%, -2.37% and -10.39% respectively. The maximum average growth rate in onion production have achieved in the year 2007-08 i.e., constituted to 28.11% Likewise the annual growth rate of productivity also have made significant level in the year 2012-13 viz. 17.54%. The above mentioned year of the annual average growth rate of area and volume of production and productivity have volatilized and becomes negatives growth rate. Due to the following reasons for annual growth rate have volatilized (i) The small onion price are varied according to area, years. (ii) Scarcity of labour problems. (iii) The monsoon and climate may not be conducive for all the states of India. (iv) The pest and caterpillar menace occurred on small onion during drought and kharif seasons. (v) The import duties were also reduced on chine's small onion hence the first hypothesis statement have been tested and inversely proved by calculation of AGR in India. Hence the first hypothesis has been rejected.

Table No. 5

Details of cost of onion production for different types of farmers in study area (Rs / Area / Years)

S. No.	Types of farmers	No. of farmers	Details of cost of onion production for Various items									
			Total ploughing operation cost in Rs.	Total farm yard manure cost in Rs.	Total fertilizers application cost in Rs.	Total Labour cost in Rs.	Total irrication water cost in Rs.	Total interest on working capital cost in Rs.	(A) Operation cost in Rs. (4-9)	(B) total fixed cost in Rs.	Total cost in Rs. (A+B)	Average cost in Rs.
1	2	3	4	5	6	7	8	9	10	11	12	13
I	Marginal farmer (0-1 acres)	37	22100 (5.01)	15300 (3.47)	5100 (1.16)	25560 (5.80)	61200 (13.88)	5576 (1.26)	134836 (30.59)	306000 (69.41)	440836 (100)	11914.49
II	Small farmers (1-2.5 acres)	8	11050 (5.)	7650 (3.46)	2550 (1.15)	12750 (5.76)	30600 (13.82)	2788 (1.26)	67388 (30.44)	154000 (69.56)	221388 (100)	27673.5
III	Medium farmers (2.5-5 acres)	3	7150 (5.27)	4950 (3.65)	1650 (1.22)	8250 (6.08)	19800 (14.60)	1804 (1.33)	43604 (32.16)	92000 (67.84)	135604 (100)	45201.33
IV	Large farmers (above 5 acres)	2	8450 (4.90)	5850 (3.39)	1950 (1.13)	9750 (13.56)	23400 (13.56)	2132 (1.24)	51532 (29.87)	121000 (70.13)	172532 (100)	86266
V	Grand total	50										

Source: Compiled from primary data

Note: Figures in Parenthesis indicate percentage to the respective total.

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The above table 5 very clearly reveals the details of cost of small onion production for different types of farmers in the study area. Per acre's average cost differs among various types of farmers for small onion production. Compared to various types of farmers, the marginal farmers have less average cost in Rs. for the cultivation of small onion in an acre. Viz. Rs.1914.49 /-for marginal farmers against Rs27673.5/- for small farmers, Rs.45201.33/- for medium farmers and 86266/- for large farmers. Cost of small onion production in various items for various types of farmers, the fixed cost which is major costs in total cost percentage for all types of farmers, which constitute 69.41%, 69.56%, 67.84% and 70.13% for marginal farmers, small farmers, medium farmers and large farmers respectively.

Table No. 6

The net return and benefit cost ratio calculated from onion cultivation (Rs / Acre / Years)

SI No.	Types of farmers	No. of farmers	Return and benefit cost ratio details											
			Average onion yield in packs	No. of onion harvest in k.g (from per back)	Total onion production (no. of farmers *no. of time groundnut harcevt in k.g	Onion Average price per k.g in Rs.	Total income from onion selling in Rs	Total income from others	Total Revenue	Total cost In Rs.	Average revenue in Rs.	Average cost	Net revenue in Rs.	Benefit cost ratio
1	2	3	4	5	6	7	8	9	8+10	11	12	13	14	15
I	Marginal farmers (0-1 acres)	37	612	35	21420	22	471240	15340	486580	440836	13150.81	11914.49	1236.32	1.10
II	Small farmers (1-2.5 acre)	8	310	35	10850	22	238700	9360	248060	221388	31007.5	27673.5	3334	1.12
III	Medium (farmers 2.5-5 acre)	3	199	35	6965	22	153230	5400	158630	135604	52876.67	45201.33	7675.34	1.17
IV	Large farmers (above)	2	240	35	8400	22	184800	6750	191550	172532	95775	86266	9509	1.11
V	Grand	50	-	-	-	-	-		-	-				-

Source: compiled from primary data

The above table 6 very clearly analyses the net return earned from the study area. Annual average net returns earning differs for different types of farmers namely Rs.1236.32/-, Rs.3334/-, Rs.7675.34/- and Rs.9509/- for marginal farmers, small farmers, medium farmers and large farmers respectively. Compared to other types of farmers, the large farmers' annual average Net returns is highest in Rs.9509 but benefit cost ratio is lowers than medium and small farmers i.e., 1:11 against 1.17 and 1.12 respectively. The second hypothesis has been tested and inversely proved. Hence the second hypothesis has been rejected.

Table No. 7

Annual average net return earned by various farmers from small onion cultivations

S. No.	Types of farmers	Frequency	Annual average revenue of onion production in Rs.	Annual average cost of onion production in Rs.	Annual average net returns in Rs.
I	Marginal farmer (0-1 acres)	37	13150.81	11914.49	1236.32
II	Small farmers (1-2.5 acres)	8	31007.5	27673.5	3334

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S. No.	Types of farmers	Frequency	Annual average revenue of onion production in Rs.	Annual average cost of onion production in Rs.	Annual average net returns in Rs.
III	Medium farmers (2.5-5 acres)	3	52876.67	45201.33	7675.34
IV	Large farmers (above 5 acres)	2	95775	86266	9509
	Grand total	**50**			

Source: compiled from primary data

The above table 7 clearly explains that the annual average net return or annual Net profit earned from small onion cultivation by different types of farmers in the study area. According to it, the annual average net return or annual profit differs for different types of farmers in the small onion cultivation. i.e., Rs.1236.32/-, Rs.3334/, Rs.7675.34/- and 9509/- for marginal farmers, small farmers, medium farmers and large farmers respectively. Hence, the third hypothesis has been disproved by empirically. Hence it has been rejected.

Table No. 8
The Main Constrains of Small Onion Cultivators in the Study Area

S. No.	Name of constrains	Frequency	Percentage (%)
I	Lack of irrigation	17	34
II	Shortage of man power	6	12
III	Prevalence of pest and diseases	4	8
Iv	Fluctuation in onion price	23	46
	Total	**50**	**100**

Source: compiled from primary data

The above table 8 has been revealed by the main constrains encountered in the cultivation of onion in study area. According to it 46% of the respondents having their grievances as fluctuation of onion price next to it 34%, 12% and 8% having their constrains of lack of irrigation, shortage of manpower and prevalence of pest and diseases.

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CONCLUSION

Onion (Allium cepa. L) is one of the most important vegetable crops grown in India. It is not only grown for domestic consumption but also for export purpose. Onion is widely consumed condiment in India. Every body, rich and poor alike consume onion almost daily because it has high nutritive value possess certain anti biotic properties. In the world India occupied second position with 0.405m.Ha of area and 4.3 millions tones of production. Onion is produced in the states of Maharashtra, Karnataka, Gujarat, Andhra Pradesh, Orrissa, Tamil Nadu, Madhya Pradesh, Bihar and Rajasthan. Among all these Maharashtra is recognized as leading onion producing states followed by Karnataka state in the country. It could be concluded from finding that majority of the respondents had medium age, high school education, medium income level, no social participation, no knowledge of support price, consulted commission agent for market information, high economic orientation and high risk orientation. Majority of the small farmers were growing less acres.

SUGGESTIONS

- Majority of the small farmers were growing onion less than acre of land, keeping in view this aspect, the policy makers should frame the policy both for increasing the production and marketing facilities.
- Onion is a commercial crop so production strategy needs to be developed in order to increasing the production at state level.
- Lack of remunerative prices and price fluctuation were the problems experienced by majority of the respondents. The government should have proper mechanism to control prices by declaring minimum support price or fix rate based on cost of production.
- Seed treatment and selection of the variety are the important technical practices for increasing the yield of onion which was not realised by farmers. Hence the extension agencies should take up suitable training programme on these aspects to the farmers are properly educated.

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FACTORS THAT INFLUENCING THE REPAYMENT PERFORMANCE OF FARMERS IN CO-OPERATIVE BANK OF MADURAI DISTRICT[6]

S. HEMANATH[7] & Dr. A. MARIMUTHU[8]

INTRODUCTION

Farming requires capital. Little ranchers and minimal ranchers need credit since their capital is secured up their advances and stock. They need assets to meet their operational costs. Their credit need is high at the hour of harvest season. A huge number of ranchers are relying on negligible and subsistence cultivating. Because of low yield, they are not in a position either to have "overflow" for appropriation or on occasion even to proceed with the creation procedure effectively and financially. Because of these reasons they depend generally using a loan in any event, for typical agrarian activities and need to pay a piece of their pay by method for intrigue later. Ranchers had the option to spend more cash for receiving the imaginative practices with the assistance of these co-agents, and thus there had been a huge and exceptional increment in the agrarian generation.

OBJECTIVES OF THE STUDY

The specific objectives of the present study are:

1. To analyse the factors responsible for overdue position of farmers and
2. To suggest suitable remedial measures for removing recovery and overdues.

METHODOLOGY AND ANALYTICAL FRAME WORK

Designing a suitable methodology and selection of analytical tools are important for a meaningful analysis of any research problem. Keeping in view the objectives of the study, 150 sample were stratified into two categories namely Defaulters and Non-Defaulters.

The information collected from bank and the borrowers indicates the reasons and effects of overdues.

Deciding factors of repayment capacity of default borrowers was determined by

ANALYSIS AND INTERPRETATION

In this paper an attempt has been made to identify the factors, which influence the repayment of loan, by farmers in the study area. There are many factors like consumption, expenditure, repaying capacity, family size, dependency ratio, occupational status, intensity of cropping, amount of loan borrowed from the financial institutions and annual income from farming which influence the mode of repayment of the loans taken by farmers. In the present study, the selected socio-economic characteristics namely total land holdings in acres, operational size of land holdings in acres, level of education, caste, borrowers' age in years, percentage of area under High Yielding Varieties (HYV), cropping intensity in percentage,

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percentage of income from farming, annual per capita family consumption expenditure per acre, fertilizers used in rupees, amount of loan borrowed from bank, and working capital used are taken into account.

Socio Economic Characteristics

The selected socio-economic characteristics along with their mean values and their differences both for defaulters and non-defaulter groups are given in Table 1.

TABLE 1
MEAN VALUES AND THEIR DIFFERENCES WITH REGARD TO THE SOCIO-ECONOMIC CHARACTERISTICS OF THE BORROWERS, DEFAULTERS – STUDY AREA

S. No.	Socio Economic Characteristics of the Borrowers	Mean		Differences
		Non-defaulters	Defaulters	
1.	Size of holding in acres (X_1)	3.1607	3.0712	0.0895
2.	Operational size in acres (X_2)	3.0141	2.9361	0.078
3.	Literacy (X_3)	1.5211	1.1121	0.4150
4.	Caste (X_4)	0.9843	0.8216	0.1627
5.	Age of the farmer (X_5)	39.0412	39.6516	-0.6104
6.	Percentage of area under HYV's to the total operated area (X_6)	26.4731	23.9712	2.5019
7.	Cropping intensity in percentage (X_7)	138.8214	125.3121	13.5093
8.	Percentage of income from farming to the total income (X_8)	69.7231	58.3063	11.4168
9.	Per capita annual consumption expenditure in rupees (X_9)	2816.3671	2332.6131	483.754
10.	Per hectare fertilizer used in rupees (X_{10})	828.0671	904.0721	-76.005
11.	Size of the loan (X_{11})	8074.1711	8048.3240	25.8471
12.	Working capital in rupees per hectare (X_{12})	441.3121	470.1211	-28.8090

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The recovery of advances by banks has assumed greater importance in view of alarming increase in overdues. The management of the banks is interested in keeping the overdues at the minimum possible level. The problem of non-repayment of the bank loan leads to mounting overdues which is a serious problem. Proper identification of a borrower as good or bad is made according to his resources and his repaying capacity. Therefore, the present study has been conducted to provide such guideline that help to identify the perspective borrower into good or bad borrower with the help of selected socio-economic characteristics.

Identification of Characteristics and Results of Discriminant Analysis

The aim of the discriminant function analysis used here is to classify the borrowers into defaulters and non-defaulters and further defaulters are subdivided into willful defaulters and non-willful defaulters by a set of independent variables.

Discriminant Function for Defaulters and Non-Defaulters

For defaulters and non-defaulters, the selected twelve characteristics data are fitted in discriminant equation.

Discriminant function is applied to the twelve characteristics to see whether these characteristics discriminate the two groups significantly or not. The difference in the mean value of two groups for most of the characteristics turned out to be significant implying that these characteristics are important variables that influence the repayment of loans. D^2 and variance ratio are worked out to be 1.1387 and 1.5871 respectively. So the discriminant function has significantly differentiated the borrowers, that is the selected twelve characteristics considered together are useful in classifying the borrowers into defaulters and non-defaulters.

Percentage contribution of individual characteristics to the total distance of the two groups of borrowers by discriminant function is calculated in Table 2 below:

TABLE 2
BORROWERS' PERCENTAGE CONTRIBUTION OF INDIVIDUAL CHARACTERISTICS TO THE TOTAL DISTANCE MEASURED - STUDY AREA

S. No.	Socio-economic Characteristics	Co-efficient (lk)	Mean Differences (dl)	Coefficient x Mean Differences (lk x d1)	Percentage	t-Values
1.	X_1	0.1032	0.0895	9.2364	50.8961	0.6814
2.	X_2	3.0141	0.078	0.2359	1.2972	1.1142
3.	X_3	0.0144	0.4150	5.976	32.9886	4.8472*
4.	X_4	-1.1011	0.1627	-0.1791	-0.9886	1.0471
5.	X_5	0.0301	-0.6104	-0.0183	-0.1010	1.0321
6.	X_6	0.2372	2.5019	0.5934	3.2756	4.8911*
7.	X_7	0.0136	13.5093	0.1837	1.0140	3.1037*
8.	X_8	-0.0027	11.4168	0.0308	0.1702	8.147*
9.	X_9	0.0069	483.75	3.3379	18.4258	4.0141*
10.	X_{10}	0.0147	-76.005	-1.1172	-6.1671	0.4151
11.	X_{11}	-0.0016	25.8471	-0.0413	-0.2279	0.0411
12.	X_{12}	0.0021	-28.8090	-0.0604	-0.3334	1.0141*
				18.1153	100.000	

*Indicates the difference is significant at 5 per cent level.

From the above Table 2 literacy level of the borrowers (X_3) annual per capita family consumption expenditure in rupees (X_9), percentage of area under HYV's (X_6), intensity of cropping in percentage (X_7) and percentage of income from agriculture (X_8) are the major and important characteristics to determinate the two groups of borrowers in the study area. Other seven characteristics X_1, X_2, X_4, X_5, X_{10}, X_{11} and X_{12} are found to be insignificant. The major characteristics and their respective weight to total distance measured are 32.9886, 18.4258, 3.2756, 1.0140 and 0.1702 per cent.

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After that, 't' values are calculated for all the selected characteristics. The calculated 't' values are given in Table 6.2. It is found that mean differences in X_3, X_6, X_7 and X_9 of the two groups of borrowers are significantly different. Other characteristics namely X_1, X_2, X_4, X_5, X_6, X_{10}, X_{11} and X_{12} contribution to the distance is very minimum. So the characteristics X_3, X_6, X_7 and X_9 are the major ones and these characteristics discriminate borrowers into defaulters and non-defaulters. These characteristics alone can discriminate when the borrower is tested through the equation. Other characteristics X_1, X_2, X_4, X_5, X_8, X_{10}, X_{11} and X_{12} have therefore, been excluded in the new equation for further analysis.

The discriminant function is then applied to the remaining four characteristics to see whether these characteristics discriminate the two groups or not. The new discriminant equation is given below:

From the new discriminant function the major characteristics considered together are sufficiently discriminating borrowers into two groups. This implied that the level of education (X_3), percentage of area under HYV (X_6) intensity of cropping in percentage (X_7) and annual per capita family consumption expenditure (X_9) of defaulters borrower are significantly different from non-defaulters borrowers. The defaulters' major characteristics do not resemble the non-defaulters' major characteristics.

The four sufficient characteristics percentage contribution to the total distance measured is calculated and has been given in Table 3.

TABLE 3
PERCENTAGE CONTRIBUTION OF INDIVIDUAL CHARACTERISTICS TO THE TOTAL DISTANCE MEASURED -STUDY AREA

S. No.	Socio-Economic Characteristics	Co-efficient (lk)	Mean Differences (d1)	Co-efficient X Mean Differences (lk X d1)	Percentage	t-value
1.	X_3	0.5528	0.4150	0.2294	0.6683	3.1672*
2.	X_6	0.6147	2.5019	1.5379	4.4805	2.9421*
3.	X_7	0.0072	13.5093	0.0973	0.2835	3.0191*
4.	X_9	0.0671	483.7540	32.4599	-94.57	4.0121*
34.3245					100.0000	

*Significant at 5 per cent level.

From Table 3, the annual per capita family consumption expenditure (X_9) is the characteristic in top most level in discriminating the defaulters from non defaulters. This characteristic contribution to the total distance is 94.57 per cent, and other followed characteristics are literacy level (X_3) per cent area under HYV (X_6) and intensity cropping (X_7) and their percentage contributions to the total distance are 0.6683, 4.4805 and 0.2835 respectively. The relative importance of each characteristic is determined by its percentage contribution to total distance.

Conclusion

Agriculture in India, viewed as a way of life, was not considered a productive proposition by the socially, economically and technologically backward population. The inter-

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sectoral mobility of personnel, resources and technology was very limited and it had created a vicious circle of technological isolation in the agricultural sector. Thus it could be concluded, from an analysis that the marginal farmers had performed well not only in the product investment they had made on the financial and the physical assets, but also in the better and more efficient utilization of the factors inputs in the study area. Agricultural credit, particularly Primary Agricultural Co-operative Bank, had promoted agricultural inputs to meet their various day to day agricultural expenses. Besides it had also motivated them to adopt intensive methods of cultivation. It could also be inferred that the recovery performance which was found to be better in the study area, had in its turn induced the effective functioning of the Primary Agricultural Co-operative Bank in the study area.

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A STUDY ON THE IMPACT OF MICRO FINANCE SERVICES ON THE LIVES OF SHG MEMBERS IN TIRUCHRIAPPALLI CITY CORPORTION[9]

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INTRODUCTION

Microfinance services are the financial services like Micro credit, Micro-Savings and Micro-insurance rendered to individuals and small business enterprises who/that lack access to conventional banking and related services. Microfinance services are extended to reach excluded customers, usually poorer population segments, possibly socially marginalized or geographically more isolated and to help them become self-sufficient. Initially Micro credit concept was functioning as a linkage programme between SHGs and banks. Over the years since initiation there has been a remarkable growth in respect of formation of SHGs, granting of bank loans and refinance through NABARD. Because of the significance of SHGs and bank linkage programme in the economic development of socially and economically backward rural poor, an effort has been made in the present paper to study the progress of self-help groups-bank linkage programme in Trichy district.

OBJECTIVES

The study was carried out with the following objectives:

- To study the socio-economic conditions of Self Help Group members in Tiruchirappalli district.
- To analyze the impact of micro finance services on the lives of SHG members and the problems faced by them.

HYPOTHESES

The study hypothesized the following for testing and verification:

- Membership in Micro Finance Institutions is independent of the problems faced in getting loans.
- Training acquired by SHG members is independent of the personal quality of respondents.

METHODOLOGY

The study was based on both primary & secondary data. Primary data had been collected from the sample respondents by using a structured interview schedule. The secondary data had been collected from the official websites, books, theses, journals, research papers etc., The respondents were purposely chosen from five different Micro Finance Institutions located in three different localities namely Ariyamangalamn, Paththalapettai and Woraiyur. Statistical tools like average, percentage, pie diagram and bar diagram were used wherever necessary. Chi square test was used to test the hypothesis.

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Table 1: Demographic Profile of Respondents

Age (in Years)	Number of Respondents	Percentage
18-29	5	10.4
30-39	15	31.3
40-49	22	45.3
50-59	6	12.5
Total	48	100.0
Gender		
Female	48	100
Marital Status		
Married	38	79.2
Single	3	6.3
Divorcee	6	12.5
Widow	1	2.1
Total	48	100.0
Religion		
Hindu	19	39.6
Christian	26	54.2
Muslim	3	6.3
Total	48	100.0
Family Members		
1-2	1	2.1
3-4	20	47.7
5-6	23	47.9
6 and above	4	8.3
Total	48	100.0

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Table 2: Socio-economic aspects of the respondents

Nature House	Number of Respondents	Percentage
Own	36	75.0
Rented	12	25.0
Education		
Illiterate	5	10.4
Primary	4	8.3
Secondary	25	52.1
Higher Education	14	29.2
Total	48	100.0

Occupation		
Agriculture and Related activities	21	43.8
Livestock, Forestry	1	2.1
Mining and Qurrying	1	2.1
Household Industry	4	8.3
Other Industry	3	6.3
Construction	2	4.2
Transport, Communication	3	6.3
Service	1	2.1
House Hold Work	12	25.0
Total	48	100.0
Income per Month		
Less than 4000	5	10.4
4100-6000	22	45.8
6100-8000	19	39.6
8100-10,000	2	4.2
Total	48	100.0
Expenditure		
30,000-35,000	17	35.4
36,000-40,000	14	29.2
41,000-45,000	5	10.4
46,000-50,000	12	25.0
Total	48	100.0

Source: Primary data

The demographic profile of the respondents as shown in table 1 clearly reveals that all the respondents belong to the most productive age group of 18 years to 59 years and more than three fourth of them are married and whose family size varies from 3 to 6. Similarly, the socio-economic aspects of the respondents as shown in table 2 shows that three-fourth of the respondents are residing in their own house but the monthly income of nearly half of them is less than Rs.6000 per month. The expenditure incurred by the respondents is far above their income which shows their consumerist pattern of spending. Nearly one third of the respondents are engaged in the household work.

Table 3: Cross tabulation between training undergone by SHG members and their personal qualities

Training undergone	Personal Qualities of SHG members				Total
	Leadership	Micro Planning	Documentation	Critical decision making processes	
Yes	19	4	4	0	27
No	6	7	3	5	21
Total	25	11	7	5	48

Source: Computer Values

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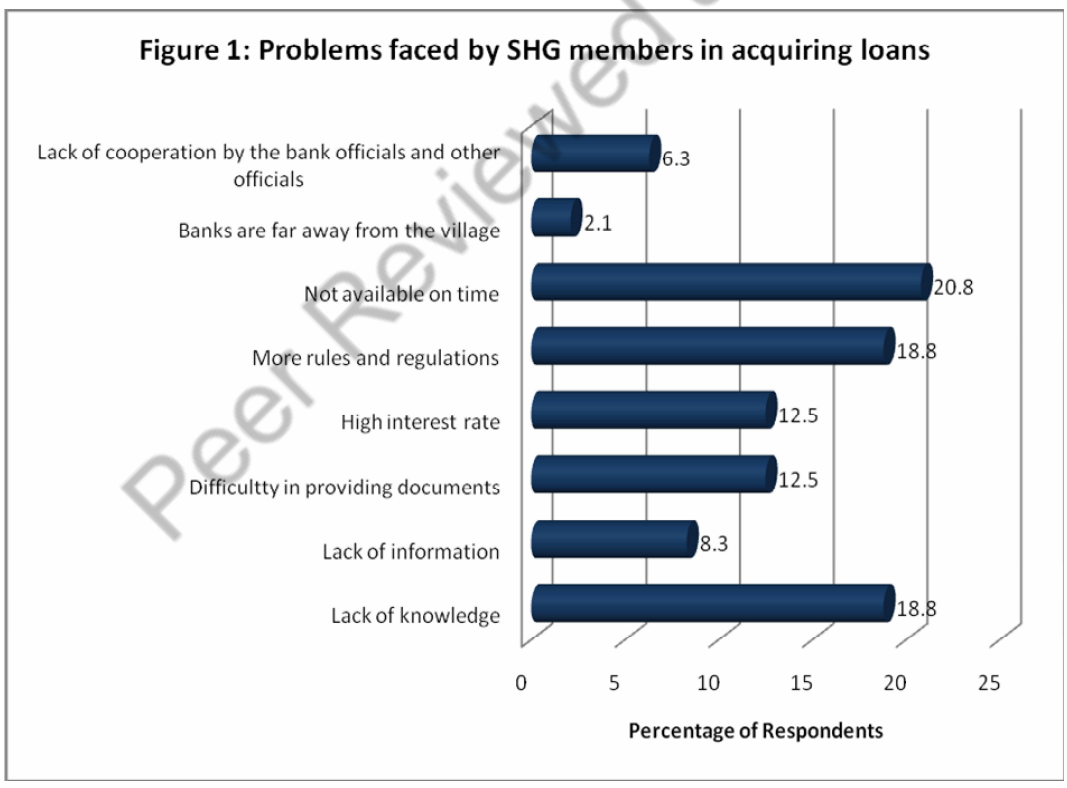
A chi-square test of independence was performed to examine the relation between training undergone by the SHG members and their personal qualities. The relation between these variables was significant, χ^2 (1, N = 48) = 12.161, p = .007. Test result clearly shows that respondents who have undergone training have more personal qualities than those who have not undergone any training.

Table 4: Microfinance Institutions with which respondents are associated

Microfinance Institution	Number of Respondents	Percentage
Gramalaya Thanga Malar Magalir Self Help Group	14	29.2
Gramshakti	9	18.8
Ujjevan	6	12.5
Dhanalakshmi	7	14.6
TDCC	12	25.0
Total	48	100.0

Source: Primary data

The respondents were mainly drawn from five different micro finance institutions as shown in table 4 from three different localities of Tiruchirappalli city corporation.



The perception of the respondents about the micro finance services as shown in table 5 reveals that more than half of the respondents felt that the rate of interest charged by the micro finance institutions is less with rare default who have felt that their entrepreneurial skills have improved after associating with micro finance institutions and living standard also has improved with easy access to loan whenever they are in need of loan. More than three

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fourth of the respondents expressed their opinion that they repay the loan within one to two years and they have a saving with their associated micro finance institutions.

Table 5: Perception of the respondents about the micro finance services

Interest Charged	Number of Respondents	Percentage
More	6	12.5
Less	41	85.4
Equal	1	2.1
Total	48	100.0
Frequency of loan default		
Very Often	9	18.8
Often	7	14.6
Rarely	13	27.1
Very Rarely	19	39.6
Improvement in living standard		
Has Improved	33	68.8
Has Deteriorated	6	12.5
Has remained the same	9	18.8
Total	48	100.0
Improvement in entrepreneurial skills		
Yes	30	62.5
No	18	37.5
Total	48	100.0
Duration of loan repayment		
Less than one year	6	12.5
1-2 years	39	81.3
2-3 years	3	6.3
Total	48	100.0
Have a saving account in MFI		
Yes	39	81.3
No	9	18.8
Total	48	100.0
Perceived benefits		
Easy access to loan in times of need	27	56.3
Easy repayment	7	14.6
Encourages Savings	7	14.6
Others	7	14.6
Total	48	100.0

Source: Primary data

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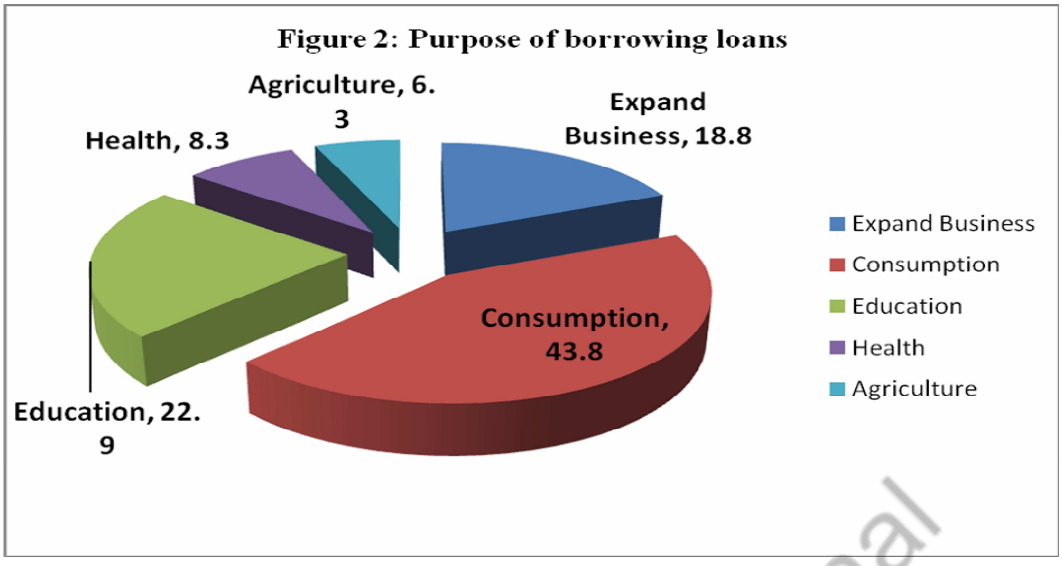

More than one third of the respondents stated that they are borrowing loans mainly to meet their consumption needs and nearly one fourth of the respondents stated that they borrow to meet the educational expenses of their children. This is reflected in the wide gap between the income earned by the respondents and the expenditure incurred by them. Similarly nearly one fifth of the respondents said that the major problems faced while accessing loan outside in more rules and regulations, non availability of loans on time and their lack of knowledge. Hence, they have stated that the Micro Finance Institutions is really a boon for them in overcoming the abovementioned problems.

Conclusion

The study carried out to understand the impact of micro finance services on the lives of SHG women shows that the micro finance services of the various institutions has created a positive impact on the lives of women by increasing the ease of accessing of loans and their standard of living. It has also improved their entrepreneurial skills and reduced the default of loan repayment. Undoubtedly, the micro finance institutions have reached the unreached serving as an alternative system of credit delivery to the poorest of the poor.

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AN ECONOMIC ANALYSIS OF ENVIRONMENTAL WATER PROBLEMS IN THIRUMAYAM TOWN, PUDUKOTTAI DISTRICT[13]

Dr. RM. MEYYAMMAI[14] & Dr. RM. SUBRAMANIAN[15]

INTRODUCTION

Water is one of the most important commodities which Man has exploited than any other resource for the substance of his life. Without water we cannot able to live in the world. As centers of industry and commerce, cities have long been centers of wealth and political power. The world bank has estimated that in the developing world as much as 80 percent of economic growth well occur in towns and cities. Thus urbanization is associated with higher incomes, improved health, higher literacy and improved quality of life. However these benefits of urbanization are associated with environmental and social evils. These include a diversity of problems from lack of access to clean drinking water, to urban air pollution and to green house gas emissions, which are grouped into those associated with poverty and those associated with economic growth or affluence. Indeed over the past two decades the global agenda has shifted away from local and regional problems such as air pollution and inadequate water supplies towards vast global concerns such as ozone depletion, climate change and the less of biological diversity.

STATEMENT OF THE PROBLEM

Economic growth brings needed revenues to cities, but if proper safeguards are not in place, it occurs at the expense of environmental quality. Land water become degradable by domestic and industrial effluents are releases to waterways with minimal or no treatment, threatening both human health and acquatic life. The use of water for drinking and other domestic purposes by human beings is generally conceded to be its highest and most essential use. The supplies for the domestic use should be pure and wholesome. Inadequate of water supply becomes a prominent role to the household in our country. Hence we have to reduce our consumes of water or we have able to manage the water for that, analyze the water problems is more essential part of the town households. In most of the towns, Can water is more influenced to the people for all our needs by the water vendor. But in the study area, most of the people depend only by corporation water and some by use can water and pond water. From this background of ideas, it is the right time to analyse the water problems by the people of households and how water is managed by the people of households in the study town.

OBJECTIVES

- To examine the income of the households in the study area
- To analyze the water problems to the households in the study area.
- To suggest the remedial measures to manage the water by the households through policy suggestions in the study area.

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HYPOTHESIS

- The distribution of wealth, income and consumption are relatively higher for the residence of central Block town compared to other locations.
- The water problems by the households are relatively higher for the residence of central Block town compared to other locations.

METHODOLOGY

The present paper well deal with the cost of water problems and water management by the people of Thirumayam town of Pudukottai district in Tamilnadu. To conduct this research primary data were collected in the town.

In order to ensure the representativeness of the sample, the disproportionate stratified random sampling technique is adopted to select the households from the town in which stratification according to location are made. Towns are again divided in to three different locations such as slums, Central Block Town (CBT), and Residential area. About 30 households from each of these three locations in Thirumayam town are selected to get a sample of size 90.

In large scale surveys involving a number of households, a few non-response cases are inevitable, either due to absence of co-operation or unwillingness of respondents to give information. Non response cases are tackled by substituting similar households in the population, so that the effective sample size of population will be interviewed by questionnaire cum schedule method. These information are collected through direct field enquiries from effective sample size of 90 households spread over the town will form the data base for the study.

The collected primary data are tabulated on the basis of income level (Low, Middle, High) of households for further statistical analysis. Appropriate statistical tools such as averages, percentage analysis are used to verify the formulated hypotheses.

Rachelle M Wills, Rodney, Stewart (2009) in his study on, End use water consumption in households, to assess water savings in households using efficient devices and to understand how savings vary between different socio-demographic groups in the community, high resolution end use water consumption data is required (i.e. disaggregating water use for showers, toilets, clothes washers and garden irrigation etc.). This paper reports selected findings from the *Gold Coast Residential End Use Study (Australia)*, which focussed on the relationship between a range of socio-demographic and household stock efficiency variables and water end use consumption levels. A mixed methods approach was executed using qualitative and quantitative data. The study provided evidence as to the potential savings derived from efficient appliances as well as socio-demographic clusters having higher water consumption across end uses. The payback period for some water efficient devices was also explored. The study has implications for urban water demand management planning and forecasting.

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LOCATION AND OCCUPATION BY SAMPLE HOUSEHOLDS

Location	Private sector	Public sector	Service	Business	Total
CBT	4(13%)	8(27%)	10(33%)	8(27%)	30
RESIDENTIAL	6(20%)	11(37%)	9(30%)	4(13%)	30
SLUMS	6(20%)	4(13%)	12(40%)	8(27%)	30
TOTAL	**16(18%)**	**23(26%)**	**31(34%)**	**20(22%)**	**90**

Source: Computed from primary data

The results on location and occupational distribution of sample respondents are exhibited in the above table. It is seen that 34 percent of households are employed in service sector followed by public sector at 26 percentage, business at 22percentage and at the least private sector of 18 percentage. This shows that the water consuming the households were almost employed in the public and service sectors and at the same time location-wise also major percentage belonged to residential groups of 37 percentage.

LOCATION AND TYPE OF INCOME OF SAMPLE HOUSEHOLDS

LOCATION	UP TO Rs.15000	Rs.15000-Rs.40000	Rs.40,000 and above	TOTAL
CBT	7(23%)	7(23%)	8(26%)	30
RESIDENTIAL	4(13%)	8(26%)	13(43%)	30
SLUMS	25(83%)	2(6%)	1(3%)	30
TOTAL	**36(40%)**	**17(18%)**	**24(26%)**	**90**

Source: Primary data

The above table infers that 40 percent of sample households is higher belongs to very low level income group follows that 26 percent of higher level income group and 18 percent is the least, it belongs to Rs.15,000 to Rs.40,000 income group. This shows that the major people of the study town belongs only on the lower and higher of income groups. It explains the income of people of low and high level groups. 18 percent of income groups is the least belongs to Rs.15000-Rs.40000.

Hence in our study most of the people belongs to low level of income group respondents. Low level income groups had no purchasing power of buying water. Low level groups were taken the water from hand pump provided by our government. It comes only one hour in the morning and one hour in the evening. It is very difficult to consume all the times by low level people. They have not big storage tanks at all.

So they were lived in very difficult situation. But High level income groups have more number of storage tanks and they consumed more number of water. It is the main thing to distribute the water in equal for all the groups. Middle level income groups, most of the people were lived in the residential area. However they managed within their income.

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UTILIZATION OF WATER IN SAMPLE HOUSEHOLDS
(litre per day)

Location / Income	Drinking	Cooking	Bathing	Toileting	Other purpose	Total
Slum	6.5	23.5	43.5	16	17	106.5
L	7	22	42	17	16	104
M	6	25	45	15	18	109
CBT	8	33	52	24.3	23.3	140.7
L	8	30	48	24	22	132
M	9	35	52	27	25	148
H	7	34	56	22	23	142
Residential	8	30.5	54.5	19	22	134

Location / Income	Drinking	Cooking	Bathing	Toileting	Other purpose	Total
M	7	29	52	18	20	126
H	9	32	57	20	24	142
Overall	8.7	34.0	58.0	25.0	24.0	149.6
L	7.6	28.3	36.0	22.6	19.6	126.3
M	7.7	30.0	52.0	21.2	21.25	132.2
H	8.3	33.3	56.0	24.0	24.0	146.0

Source: Primary data

The total water consumed per household increases from 104 liters to 126 liters per day, as the income increases. It is also astonishing to note that the per capita utilization of water is relatively higher in the CBT areas at 59 liters, the residential area at 56 liters, and it is the least for slum area at 44 liters. The utilization of water per capita is the highest one in CBT areas due to workers and private groups.

Moreover, utilization of water is least for the slum area, it is mainly attributed to most of the slum households which depend on the public hand pump as well as the public pipe water facility provided in the street. The piped water from the public sources is provided only on certain timings, i.e., a few of hours in the morning time and few hours in the evening time. The slum dwellers are taking advantage by utilizing the piped water by filling water through pots and containers by using their family members. This variation is mainly due to the variations in the use of water for cooking, bathing, toileting and other purposes like gardening or cleaning the house and consumer able durables.

Incidence of Diseases and Health Expenditure of Sample Households in Thirumayam Town

Location	Children		Adults	
Slum	46.6	53	40.6	81
L	46.3	52	40.3	79
M	46.9	53	40.9	83
CBT	35.9	193	30.5	215
L	35.4	191	30.2	211
M	36.9	193	30.9	219
H	35.3	195	30.5	215
Residential	27.5	105	24.7	273
M	28	104	24.0	272
H	27	106	25.4	274
Overall	40.1	109.2	33.4	183
L	41.2	108	32.5	182
M	40.6	109.5	34.6	183
H	38.5	110.2	33.2	185

Source: Computed from primary data

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The results on incidence of diseases and health expenditure of sample households in terms of children and adults are exhibited in the above table. The result indicates that about 41.2 percent of children are affected by diseases from the slum area. It implies that the households are affected by effluent pollution of diseases caused by the slum area due to concentration of bad drainage system. In all the locations and income groups, the percentage affected by diseases for children are more than adults. In case of adults, the highest 40.9 percent in the slum areas, and the lowest 24.0 percent in the residential areas are affected. The average health expense for children is from Rs.52 to Rs.106 and for adults from Rs.79 to Rs.274. The average health expense of the household per month is higher for adults than for children in all the locations.

CONCLUSION

I conclude that, water problems to the sample households in the Thirumayam Town, CBT areas of households is relatively higher compare to other locations. We should create every individual to save and minimize the consumption of water, then the other locations of sample households benefitted. If the sample households would properly utilized the water then the sample households definitely managed the water within their income. Government should take care of the slum area of the households to provide the water continuously. Every individual should take care of the water as their children. Then only our future generation avail all these natural resources like water.

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INDUSTRIAL PERSPECTIVE OF MADURAI DISTRICT OF TAMIL NADU: A VISION[16]

Dr. A. MARIMUTHU[17] & K. MEENATCHI SUNDARAM[18]

Introduction

The industrialisation of Madurai increased employment in the sector across the district from 63,271 in 1992–93 to 166,121 persons in 2001–02. Madurai is one of the few rubber growing areas in South India and there are rubber-based industries in Madurai. Gloves, sporting goods, mats, other utility products and automobile rubber components are the most produced items by these industries. Automobile manufacturers are the major consumers of rubber components produced in the city. There are numerous textile, granite and chemical industries operating in Madurai.

New Industrial Policy: A Vision

A new Industrial Policy will be unveiled to facilitate the realization of Vision 2023 and will focus on growth with employment generation. The new policy will also ensure that the manufacturing sector is linked to agriculture and allied sectors to ensure maximum value addition and to absorb the surplus workforce. Amongst several proactive measures, Government has initiated formulating other policies viz., Land Policy for industrial purposes and sector specific policies for Automobiles & Auto components, Aero Space, Bio technology, Pharmaceuticals and Nano-technology which are on the anvil. These policies will also include resolutions for addressing the infrastructural gaps, skilled manpower availability etc., so as to make the industrial sector vibrant for achieving better growth.

Objectives

- Positioning a framework for infrastructure development to achieve sustained industrial sector growth of 10.5 percent.
- Strengthening the manufacturing sector and widening its base especially in the value added skill intensive and high technology sectors.

Strategies of industry in Madurai District

Madurai District's Industrial development strategy for the next five years is envisioned on growth and stability and increased efforts on resource mobilization. Infrastructure and industry will serve as lead sectors. An integrated infrastructure development program will be pursued. An important segment in the key strategy is to guide the infrastructure sector to make the industrial sector emerge as a globally competitive and to improve the industrial infrastructure to accelerate industrialization with efficient and integrated transport networks.

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Identification of New Industrial Project of Madurai District

New industrial enterprises during the Twelfth Plan period aim to ensure that the new ventures are bound to generate emergence of growth poles and create positive externalities in industrially potential areas and that there is a distinct dispersal of industrial units to backward regions. The new industrial units are aimed to be capable of generating perceptible backward, forward and financial linkages and new units are to have considerable income and price elasticity of demand. The yardsticks set forth above are intended to avoid severe production bottlenecks, equalizing perfect demand–supply, gains stabilizing the general price increases, reaping economies of scale, efficiency and productivity of gains and locating the niche in the market.

The above mentioned industrial strategy is intended to spur rapid industrialization, generate gainful employment in backward regions, ensure equitable distribution of income and wealth, attain economic inclusiveness in growth process and provide a strong foundation for building-up of economic and social infrastructure.

Industry At Glance

Having good connectivity in all respects, there is ample scope for all kinds of industries in Madurai Dist. viz. Automobile, Chemical, Agro based, Textile, Logistics, Information Technology, Energy etc. Madurai is one of the few rubber growing areas in South India, and there are rubber based industries in Madurai. Gloves, sporting goods, mats, other utility products and automobile rubber components are the most produced items by these industries. Automobile manufacturers are the major consumers of rubber components produced in the city. There are numerous textile, granite and chemical industries operating in Madurai. Madurai is promoted as a second-tier city for IT and some software companies have opened their offices in Madurai. Software Technology Parks of India, an agency of the Government of India, has authorised several such companies to receive benefits under its national information technology development program. The state government proposed two IT-based Special Economic Zones (SEZ) in Madurai, and these have been fully occupied by various IT companies.

The TVS group's growth which looks really massive started from their establishment in Madurai dates back to the year 1911. They have their units of TVS Tyres (Srichakratyres), ZF Electronics TVS, TVS InterConnect Systems (TVS ICS), Firestone TVS, Sundaram Brake Linings, Sundaram Fasteners ltd, Sundaram sewing needles, Sundaram textiles, TVS Rubber. And none could forget the Madura Coats which was involved in Coat and fabric production and their world known brands Louis Philippe, Van Heusen, Peter England, Allen Solly, Byford and San frisco. Now, they do produce only sewing threads here. TAFE Tractors have their plant here near Vadipatti. Fenner ltd that has been acquired by JK Tyres has 3 of their plants in Madurai and surrounding areas for manufacturing Industrial belts. PRP Granites and exports is a real big industry in Madurai. One could find numerous small and medium scale industries in SIPCOT and SIDCO of Kappalur, K.Pudur, Urangaanpatti and Nilakottai region.

Analysis of Small Scale Sector

An analysis of the growth of small scale sector reveals that the significant change in structure and pattern of the industrial development have taken place within the small scale sector in the district. Promising changes in structure and pattern of industries have made a noticeable impact on the production front. However, the expansion of industrial activities has not brought any significant and desirable changes in the composition and cluster of industries

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in this district. Some old industrial groups like Agriculture implements, Iron wares units are still fighting for retaining their position in the competitive environment. Electronic and software are the recently emerging sectors in Madurai district. After 2005, the MSE enterprises in Madurai District had gone through transition under group initiatives. Cluster Movement has encouraged MSE players to create common assets and support Validation of the industrial potential survey was held on 8.8.2012 at MADITSSIA Hall in the presence of all stakeholders like Industrial Associations - State and District level, Product specific associations, lead bank rep., GM DIC, academicians, NGOs, Research Institutes etc. About 60members participated in the validation event.

Details of Yearwise Units registered – 2007-08 TO 2015-16

Year	No. of Units registered (EM-II) – MADURAI			
	MICRO	**SMALL**	**MEDIUM**	**TOTAL**
2007-08	1336	48	0	**1384**
2008-09	1791	131	4	**1926**
2009-10	2495	208	10	**2713**
2010-11	3069	389	29	**3487**
2011-12	2974	618	89	**3681**
2012-13	3365	948	283	**4596**
2013-14	3565	1245	221	**5031**
2014-15	4279	1729	358	**6366**
Total Units registered under UAM				
2015-16	5155	753	10	5918

Major Industries in Madurai District

Madurai is a ideal destination for establishing a CAR Manufacturing unit. There are so many Industries involved in the manufacturing of automobile spare parts, Madurai is well connected with transport facility. It has good air connectivity also at Tuticorin Port is situated just125 km away from Madurai, see route is ensured. The widening of National Highway around Madurai has improved the road traffic facilities. There is conducive atmosphere in Madurai District for setting up such a mega unit.

The Secretary to Government, Industries Department, the SIPCOT Managing Director and the District Collector had identified the land to the extent of 2000 Acres at Sivarakottai Village, Tirumangalam Taluk for the attraction car manufacturing industry. Madurai District needs the progress of a multinational Company, in order to utilize the huge employment potential both skilled & semi skilled available here.

MAJOR INDUSTRIES ACROSS SECTORS

S. No.	Name & address of the unit	Product manufactured
1	The National Co-op. Sugar Mills Ltd. B, Mettupatti PO Alanganallur	Sugar
2	Kothari Pytochemicals International, Nagari	Calcium Sennoside Chlorpropamide Tolbutamide & Brucine

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3	Madurai Sugars Pandiarajapuram	Sugar
4	TVS Sri Chakkara Ltd. Vellaripatti	Tyres & tubes
5	E.I. Dupant Ltd. Therukkutheru	Synthetic monofilament nylon & Indl. & Engg. finishes
6	The Metal Powder Co. Ltd. Maravankulam	Non ferrous metal powder
7	T.V.SundaramIyengar & Sons Ltd. Madurai.	Automobile works
8	Fenner India Ltd. Kochadai	V & fan belt, oil seals, conveyer belt
9	Madurai Dt. Co-op. Milk Producers Union Ltd. Madurai	Milk & milk products

MAJOR LARGE SCALE INDUSTRIES

- M/s. National Sugar Mills, Mettupatti, Allanganalur,
- M/s. Kothari Bio Chemicals Nagari, Madurai, (CalciumSennocide)
- Sugar Factory at Panchayarapuram,
- M/s. TVS Chakra Ltd., at Vellaripatty (Manufacturing of Rubber Tyres)
- M/s. Hi-Tech Arai, M/S. Fenner India, Kotchadai (Manufacturing of V-Belts),
- M/s. TVS Sundaram AutoComponents,
- M/s. Metal Powder Company (Manufacturing of Synthetic and Nylon Yarn. Teflon Liquid & refrigeration gas debulking.
- M/s. PRP Granites at Melur and M/s. R.K. Granites at Cholavandan.

Conclusion

The growth of small-scale industries in the industrial map of Madurai district shows the concentration of industries in a few areas/ pockets like Madurai, Thirumangalam and Usilampatty. The other areas of the district have got less significance. The foot loose industry is the single most enterprises still dominating the district Economy. The location of industries is the prime task. Instead the district economy has managed to turn its fate and now ranks top among the most industrial centres in Tamil Nadu, accounting for a sizeable part of the State's revenue. Though the industrial growth is confined to few pockets, existing industrial climate will give a way to attract new investment opportunities in Engineering, chemical, readymade garments, paper and textile industries in this district.

New industry practices and rapid technological change will dramatically change the aviation system over the next ten years. These changes offer great promise for aviation but only if there is a strong FAA able to meet the challenges such change brings.

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SOCIO ECONOMIC STATUS OF PACHAIMALAI TRIBES AT TIRUCHIRAPPALLI DISTRICT[19]

Dr. P. HEMA[20] & H. KAMALRAJ[21]

INTRODUCTION

As India is bequeathed with unique flora and fauna by nature, the Indian tradition and heritage too is a combination of a variety of colorful cultures. The varied ethnicities, multiple linguistics and the different religions have been synchronized in the Indian tradition. The Indian civilization is hence a plural society with a mixture of traditions.

Tribal people are those who lead a life very close with nature, in deep forests and dense mountains mostly less affected by modern developments. They usually have a unique lifestyle with their own tradition and custom. The tribes have a very rigid culture and in some parts they have their own language. Tribal people comprise of 4 percent of global population, 8.6 percent of Indian population and 1.1 percent of the population of Tamil Nadu. In Tamil Nadu, the total tribal population is rather small and scattered all over the state. The welfare schemes designed and implemented by the government for eradicating poverty, help very little in uplifting tribal people.

Among the various tribal communities, the five STs are sharing around 80.32% of the State ST population namely Malayali, Irular, Kattunayakan, Kurumans and Uraly. Among them, 'Malayali Gounders of Pachamalai hills is one of the predominant tribal communities in Tamil Nadu state. Pachamalai is a green hill range, just 80 kms north of Tiruchiraplli via Thuraiyur. Pachamalai which spread with a few range, is a haven of the tribal of this region, with unique culture and way of life.

This mountain range in itself has different small regions like Thenparanadu, Kombainadu, Athi Nadu and Vannadu. The Malayali population as per 2011 census is 11366, of which 5684 were men and 5682 were women. The main occupations of these people are agriculture and collection of forest produces. They have poor access to health, education, employment and income generation activities and infrastructural facilities. In spite of the number of welfare schemes implemented by the state and central governments, their access to employment and income generation is very poor. The study tries to highlight the unique problems of the people in the study area and the special attention required by them in the design and implementation of welfare schemes.

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OBJECTIVES

1) To analyse the social structure and economic well being of tribal respondents in the study area.
2) To evaluate the sources of income and the pattern of expenditure of the respondents.

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3) To evaluate the resources available in Pachaimalai hills for the development of aboriginal people.
4) To suggest suitable measures for the upliftment of tribal people.

METHODOLOGY

Pachaimalai hills is located in Trichy district. The areas of Pachamalai has been divided the by the tribal people as Thenpara Nadu, Vannadu, Kombai Nadu and Aathi Naadu. The study is conducted only in Thenpara Nadu. Thenpara Nadu is divided into 16 hamlets. The total population of Thenpara Nadu is 9305, out of which there were 4605 males and 4700 females. From the above population, 94 sample respondents were chosen at random from the four hamlets of Thenpura Nadu, i.e., Sozha Maathi, Keezhkarai, Thanneer Pallam and Kambur. The sample size was in proportion to the population of Thenpura Naadu (1%). Convenient sampling was adopted for the study. These sample respondents were chosen by convenient sampling method in accordance with their accessibility and reliability in Pachaimalai Hills region. Considering the objectives of the study, a well-structured interview schedule was prepared for the collection of primary data. The data collected were processed and tabulated for further statistical analysis. The secondary data were collected from various books, journals, articles, periodicals, newspapers and websites. The study period was limited to one year from January 2017 to January 2018.

Rajesh and Jeyaraman (2018) were of the opinion that addiction to superstitious beliefs was one of the major causes of backwardness of tribes. And they insisted that education could be the most appropriate tool to bring about social and economic empowerment among tribes.

Farming Profile of the Respondents

Type of Farmers			
S. No	**Type of Farmers**	**Number of Respondents**	**Percentage**
1	Small farmers	58	61.70
2	Medium farmers	31	33.00
3	Big farmers	5	05.30
	TOTAL	94	100
Type of crops cultivated			
S. No.	**Crops cultivated**	**Number of Respondents**	**Percentage**
1	Tapioca	60	63.83
2	Paddy	15	15.96
3	Cashewnut	14	14.89
4	Causuarina	05	5.32
	Total	94	100
Type of Irrigation			
S. No.	**Type of irrigation followed**	**Number of Respondents**	**Percentage**
1	Rain water	08	08.5
2	River water	28	29.8
3	Well irrigation	58	61.7
	TOTAL	94	100.00

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Economic Profile of the Respondents

Annual Income			
S. No.	**Monthly Income**	**Number of Respondents**	**Percentage**
1	Less than Rs.60000	08	8.5
2	Rs.60001-90000	36	38.3
3	Rs.90001-120000	38	40.4
4	Rs.120001-150000	10	10.6
5	Rs.150001 & above	02	2.2
	TOTAL	94	100.00
Pattern of Expenditure			
S. No.	**Expenditure**	**Number of Respondents**	**Percentage**
1	Less than 3,000	18	19.1
2	3,000-5,000	46	48.9
3	5,000-7,000	23	24.6
4	7,000-9,000	05	05.3
5	9,000 and above	02	02.1
	TOTAL	94	100
Annual savings			
S. No.	**Annual Savings in Rs.**	**Number of Respondents**	**Percentage**
1	Up to 10,000	28	29.8
2	10,000 to 20,000	18	19.1
3	20,000 to 30,000	20	21.3
4	30,000 to 40,000	12	12.8
5	40,000 to 50,000	10	10.6
6	50,000 & above	06	06.4
	TOTAL	94	100.00

Satisfaction of the respondents with regard to the Welfare schemes implemented:

S. No.	**Satisfaction**	**Number of Respondents**	**Percentage**
1	Highly satisfied	33	35.1
2	Satisfied	29	30.8
3	Neutral	15	16.0
4	Not Satisfied	17	18.1
	Total	94	100.0

Source: Compiled from the primary data

FINDINGS & SUGGESTIONS

- Marriage is considered as a compulsory social institution among them. But divorce and remarriage is allowed if the disputes between the couple are unsolvable. Most of the conjugal disputes are solved by the head men of the community.
- Around 96 percent of respondents in the study area were Hindus.

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- Unlike the other tribal groups, the Malayali tribes of Pachaimalai region have more access to education. In Thenparanadu, there is one higher secondary school, one middle school; six elementary schools and 17 kinder garden schools are there. Only for higher education they have to travel to nearby towns.
- From the study, it is observed that around 8.5 percent of the respondents earn less than Rs.60000 per annum. Around 38.3 percent of the respondents' annual income ranges between Rs.60000 to 90000. 51 percent of the respondents earn around 90000 to 150000 rupees. Only two of respondents earn more than 150000 per annum. The tribes of this region cultivate different kinds of grains, ragi, bhajra, maize and fruit bearing trees. The commodities such as cashew, pepper and coffee that could fetch them higher prices are produced only for domestic purposes. Most of the agricultural produce is utilized for consumption and a little is taken to the market for trading.
- In addition to agriculture, most of respondents are indulged in other income earning activities such as cattle rearing, sericulture, trading and private employment. Only a few them of are employed in government sector.
- 19 percent of the respondents spend less than Rs. 3000 per month which includes their expenses on food, fuel education, health care and other expenses. More than 70 percent of the respondents spend between Rs.3000 to 7000 per month. Since they produce most of the grains, millets, pulses, fruits and vegetables consumed by them by themselves they need to spend less on consumer goods. For most of the illness they use herbal medicines and thereby spend little on modern medicines.
- This is supplemented with Special Central Assistance from Government of India. Additional grant-in-aid is also sanctioned every year for providing infrastructure facilities in Tribal areas by the Government of India. The District Collector is the Key Coordinating Officer at district level for monitoring all Tribal Welfare Programmes. Funds are provided primarily for income generating project and a part of it (not more than 30%) for provision of infrastructure facilities for such income-generating scheme.
- The **Department of Tribal Welfare** is running 253 Tribal Residential Schools (193Primary schools, 42 Middle Schools, 8 High Schools and 10 Higher Secondary Schools) with about 45,600 students (almost 10 percent of the entire tribal population of the state) resident in them. There are a further 26 Tribal Hostels in 11 districts that are run by the department with about 1,300 students resident there. Among the other major programs that are being implemented for the Scheduled Tribes in the state are housing, basic amenities provision and economic activities.
- Around 35 percent of the respondents are highly satisfied with the welfare schemes provided for them by the government. 30 percent of the respondents have moderate satisfaction with the government schemes. 18 percent of them expressed their displeasure in the way of implementation of those schemes.
- Around 40 percent of the respondents were of the opinion that due to improper roads they need to spend more on fuel whenever they need to take their produce to the plains. The damaged roads and the insufficient public transport are hampering this place from becoming a tourist destination. They have suggested that upgradation of infrastructural facilities could make a difference in their economic and social well-being.
- There is one primary health center available in the study area and only one hospital with a few beds is run by the government at Top Sengattuppatti. This lack of medical facility is considered as a major problem by 23 percent of the respondents.

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- Nine percent of respondents expressed their concern over aggravating deforestation. They were of the opinion that growing deforestation has reduced the greenery of the area which was once the major attraction for tourists. It also resulted in reduction in ground water level and hence the hills is gradually losing its flora and fauna. They also expressed their grief for the disappearance of rare herbs and medicinal plants, and suggested to start an Herbal Research Centre to absorb the knowledge potentials of the tribes in using medicinal herbs. 4 percent of them were expecting entrepreneurship development programmes from the government.

CONCLUSION

The Tribal communities of the study area are at present engaged in economic pursuits ranging from agriculture and allied activities to industrial and trading activities. Forest land is the main asset possessed by the tribes. Their miseries are compounded by a low level of infrastructural and social services and the existence of a greater inequality among the tribes. By rectifying the above mentioned problems, the government could put an end to the miseries of tribes and could bring about equitable development for all.

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SOCIO-ECONOMIC AND STRUCTURAL FACTORS AND ACADEMIC PERFORMANCE IN HIGHER EDUCATION: A STUDY OF STUDENTS FROM NAAC ACCREDITED ARTS AND SCIENCE COLLEGES IN TIRUCHIRAPPALLI CITY[22]

JOBIN MATHEW[23]

Introduction

Education is the best legacy a nation can give to its youth. This would suggest that the development of any nation or community depends largely on the quality of education of such a nation. Education has become highly competitive and commercial in many countries. It is on the basis of high academic performance that students get selected to good secondary schools, better courses of study and eventually better jobs. Academic performance has become a yardstick of self-worth and success. The outcome of education determines the quality of life, progress and status of people living anywhere in the world.

Academic performance in higher education is crucial for students, as it affects the plausibility of securing good career positions and of continuing their education, as well as for the institution in which they are pursuing their studies, as the academic performance of its pupil is crucial in determining the quality and ranking of the institution among other institutions. Traditionally in education economics, several factors were identified influential in determining the academic performance of the students in higher education.

Objective

To identify the factors determining academic performance of students from NAAC accredited colleges in Tiruchirappalli city of Tamil Nadu.

Methodology

The data were collected from 91 students studying in four NAAC accredited colleges in Trichy (48 girls & 43 boys) through a well-structured interview schedule during the month of December 2019. Among the female students 23 were from Holy Cross College (Autonomous) and 25 from Shrimati Indira Ghandi College (Autonomous). Out of 43 boys, 21 were from St. Joseph's College (Autonomous) and the rest 22 from Bishop Heber College (Autonomous), Trichy.

The Empirical Model

The empirical model of the study is based on the systems model which is used by J. M. Mweti (Mweti, 2013). The systems theory of organizations developed by Ludwigvon Bertalanffy in the 1950s emerged as part of the intellectual ferment following World War II although its roots are much older. Systems theory postulates that schools are like other open systems which of necessity engage in various mode of exchange with environment (Katz and Kahn, 1966 as cited in Mweti, 2013). According to this theory, there exist several factors contributing to the academic performance of students in an academic environment.

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Identification of Variables

Among the variables discussed by Mweti parental income (PI), residential area (RA), family size (FS) and parent educational achievement (PEA) are of greater relevance. Along with these socio-economic variables, the present study incorporated the socio-economic variables such as social category (SC) and availability of scholarships or financial aid (AFA) as well as systematic variables such as number of hours of study per day (NHS), number of hours spent in the library per day (LS), quality of the educational infrastructure provided by the respective institution (QEI) and the quality of faculty members tutoring the students in the respective institutions (QFM). The additional variables are included as they are relevent in Indian context.

Hypothesis

Ho: Academic performance (AP) is not a function of parental income (PI), social category (SC), family size (FS), residential area (RA), parent's educational achievement (PEA), number of hours of study per day (NHS), number of hours spent in the library per day (LS), perceived quality of the educational infrastructure provided by the respective institution (QEI) and the perceived quality of faculty members tutoring the students in respective institutions (QFM), and the availability of scholarships or financial aid (AFA). This relation can be empirically represented as:

$$AP = f(PI, SC, FS, RA, PEA, NHS, LS, QEI, QFM, AFA)$$

Expressing the model in econometric form, we get

$$AP = \alpha_0 + \alpha_1 \cdot PI + \alpha_2 \cdot SC + \alpha_3 \cdot FS + \alpha_4 \cdot RA + \alpha_5 \cdot PEA + \alpha_6 \cdot NHS + \alpha_7 \cdot LS + \alpha_8 \cdot QEI + \alpha_9 \cdot QFM + \alpha_{10} \cdot AFA + u_i$$

Variables and Measurements

The variables are measured as given below.

1. **Academic Performance:** Percentage of Marks in latest Semester Examination. AP = 1. If Marks scored by the student is greater than 70 percent. AP=0 If Marks scored by the student is less than 70 percent.
2. **Parental Income:** PI is measured by monthly earning of the family head (it is expressed in ten thousands). We choose this approach of rescaling instead of logging the values because we used the estimated coefficients alongside the actual values of the variable to calculate the probability of having high academic performance.
3. **Social Category:** SC=1 if the student Belongs to Higher Castes and SC=0 if the student belongs to Lower Castes.
4. **Family Size:** FS = 1 if the student is from a large family (i.e. 6 persons and above) and FS = 0 if the student is from a small family (i.e. less than 6 persons).
5. **Residential Area:** RA = 1 if the student resides in the urban area and 0 if otherwise (Residential area doesn't necessarily mean where the higher education institution is located but where the student resides).
6. **Parents' Educational Attainment:** PEA = 1 if the student's parents are educated (i.e. secondary school and beyond) and PEA = 0 if the student's parents are not educated (i.e. below secondary school level).

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7. **Number of Hours of Study per Day:** NHS = 1 if the number of hours the student studies is rate good (i.e. 2 hours and above daily) and NHS = 0 if the number of hours the student studies is rate poor (i.e. between 0 and 1 hour daily).
8. **Number of Hours Spent in Library Per Day:** LS = 1 if the number of hours of library use is 2 hours and more daily and LS = 0 otherwise.
9. **Perceived Quality of Educational Infrastructure:** QEI = 1 if the student rates the quality of education infrastructure 7 or above out of 10 and QEI = 0 otherwise.
10. **Perceived Quality of Faculty Members:** QFM = 1 if the student rates the quality of faculty members 7 or above out of 10 and QFM = 0 otherwise.
11. **Availability of Financial Aid/Scholarships:** AFA = 1, if the student receives any financial assistance for pursuing higher studies (whichever is the source) and AFA = 0, otherwise.
12. **Error Term/Random Disturbance:** U_i = the stochastic error term which captures other intrinsic or random behaviour that affect AP.

Techniques used for theEstimation of Variables

The application of OLS estimation technique to a qualitative response regression model is flawed with numerous shortcomings: (i) Non-Normality of the disturbances u_i. (ii) Heteroscedastic variances of the disturbances (iii) Non fulfilment of $0 \le E(Y_i \mid X) \le 1$. (iv) Questionable value of R^2 as a measure of goodness of fit, among others (Gujarati, 2009). Hence the maximum likelihood (ML) estimation technique was used to estimate the parameters of the model.

Data Analysis: Results and Findings

The ML-Binary Logit method is chosen over ordinary least square (OLS) technique because the model is a qualitative response regression model. The conventional OLS estimation produces bias and inconsistent estimation when the dependent variable is qualitative (dummy). Maximum Likelihood binary logistic regression estimates the relationship between a group of independent variables and a binary response which always has only two possible values, here either scoring greater than 70 percent or scoring less than 70 percent. Thus our model helps to understand how the probability of any of the above two events occurring due to any change in the independent variables or predictors. The result of the estimation using SPSS is summarised in the following tables.

Model Summary: A logistic regression was performed to ascertain the effects of parental income (PI), social category (SC), family size (FS), residential area (RA), parent's educational achievement (PEA), number of hours of study per day (NHS), number of hours spent in the library per day (LS), perceived quality of the educational infrastructure provided by the respective institution (QEI) and the perceived quality of faculty members tutoring the students in respective institutions (QFM), and the availability of scholarships or financial aid (AFA) on the likelihood that the students score higher than 70 percent in their examinations.

Table 1 Model Summary

Step	Cox & Snell R Square	Nagelkerke R Square	Sig	df	Chi-Square	Percentage Correct
1	0.586	0.814	0.001	11	26.225	96.8

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The logistic regression model was statistically significant, $\chi^2(11) = 26.225$, $p < .0005$. The model explained 81.4% (Nagelkerke R^2) of the variance in academic performance of the students in higher education and correctly classified 96.8% of cases.

Estimation Result: the estimation of the equation is represented in table 2.

Table 2 Summary of Estimation Result

Dependent Variable: Academic Performance						
Variables	**Coefficient**	**Std. Error**	**Wald**	**df**	**Sig.**	**Probability**
PI	0.001	0.000	0.013	1	0.008	1.000
SC	0.890	0.974	0.835	1	0.001	2.435
FS	-1.304	1.496	0.760	1	0.383	0.271
RA	-0.611	0.994	0.378	1	0.539	0.543
PEA	-1.054	1.131	0.868	1	0.351	0.349
NHS	1.566	1.123	1.946	1	0.003	4.787
NLS	3.302	1.280	6.651	1	0.010	27.160
QEI	2.757	1.152	5.726	1	0.017	15.750
QFM	1.304	1.125	1.343	1	0.046	3.683
AFA	0.375	1.205	0.097	1	0.756	1.455
Constant	-4.390	1.612	7.419	1	0.006	0.012

Using the coefficients of the logistic regression equation given in column 2 of table 2 for predicting the dependent variable from the independent variable, similar to OLS regression, we can write the prediction equation as follows.

$$\log\frac{p}{1-p} = -4.39 + (0.001 * PI) + (0.89 * SC) - (1.304 * FS) - (0.61 * RA) - (1.05 * PEA) + (1.56 * NHS) + (3.3 * LS) + (2.76 * QEI) + (1.3 * QFM) + (0.37 * AFA)$$

where, p is the probability of getting 70 percent or more marks in examination results of the students. From the above prediction model, we can derive the following one to one relations between each among the independent variables and the dependent variable.

1. **Parental Income and Academic Performance:** The equation shows that parental income is positively related to educational achievement. This is depicted by the sign of the slope coefficient. By implication, an increase (decrease) in parental income will cause academic performance to increase (decrease). Thus, the parental income coefficient of 0.001 suggesting a positive relationship between the parental income and academic performance.
2. **Social Category and Academic Performance:** the equation depicts a positive correlation between the category to which the student belongs and academic performance. The slope coefficient 0.89 shows that there is higher correlation between social category and academic performance.
3. **Family Size and Academic Performance:** Family size of the student and academic performance of the student shows a clearly negative correlation, which implies that when the number of members in a family is higher, then the academic performance might be poor.

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4. **Residential Area and Academic Performance:** from the equation we can elucidate that residential area in which the student stays and the likelihood of better academic performance are negatively correlated which means that a student from urban area seems to achieve more in terms of academic performance rather than a student from rural area.
5. **Parents' Educational Attainment and Academic Performance:** The result shows that parent educational achievement is negatively related to academic performance, as shown by the negative coefficient of PEA. This result suggests that students, whose parents are less educated, perform well on the average compared with students whose parents are educated.
6. **Number of Hours Studying and Academic Performance:** The coefficient of NHS suggests that there is a positive relationship between the number of hours spent for studies per day and the academic performance of the students. That is, when the former increases the latter also tend to increase.
7. **Number of Hours Spent in Library and Academic Performance:** The number of hours spent in the library per day and the academic performance of the students shows a positive relationship such that when library use is higher the academic outcome tend to be more qualitative in terms of performance.
8. **Perceived Quality of the Educational Infrastructure, Perceived Quality of Faculty Members Tutoring the Students and Academic Performance:** Perceived quality of academic infrastructure provided by the institution and the academic performance relates each other positively. It means that when the students perceive their institution to be of higher quality they are more likely to perform well in academics. Likewise the study shows that if the students' percept option about the faculty members is higher, then the academic performance also might be higher.
9. **Availability of Scholarships or Financial Aid (AFA)and Academic Performance:** Availability of scholarships or financial aid to the students seems to increase the academic performance of the students as is indicated by the positive coefficient of AFA in the equation.

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Major Independent Variables of the Model

From table 2 it is clear that all the independent variables or predictors does not have the same level of significance which indicates that some of them are highly influential in determining the occurrence of the dependent variable and some others are less contributing. Among all the independent variables parental income (PI), social category (SC), number of hours of study per day (NHS), number of hours spent in the library per day (LS), perceived quality of the educational infrastructure provided by the respective institution (QEI) and the perceived quality of faculty members tutoring the students in respective institutions (QFM) are the variables having significant impact on the occurrence of the dependent variable (either scoring above 70% or scoring below 70%) than other variables. This is inferred from the fact that the observed values of the above mentioned independent variables are less than the table value (i.e. $p<0.005$).

Conclusion

This research work comprised the analysis of the socio-economic and structural factors affecting the academic performance of students in higher education with special

reference to the NAAC accredited colleges in Tiruchirappalli city. The use of Maximum Likelihood Binary Logistic Regression model provided us with a predictive model which is statistically significant as a whole and the values of the estimated parameters explains the nature of relationship between the dependent variable which is essentially categorical and the independent variables considered in the realm of analysis. The study showed that among the independent variables, parental income (PI), social category (SC), number of hours of study per day (NHS), number of hours spent in the library per day (LS), perceived quality of the educational infrastructure provided by the respective institution (QEI) and the perceived quality of faculty members tutoring the students in respective institutions (QFM) are the variables which do have a significant effect on academic performance of students in higher education and the other variables such as family size (FS), residential area (RA) and parent's educational achievement (PEA) have no or less effect on the academic performance of students. That is, socioeconomic factors like parental income and social category as well as other structural or institutional variables are determining the probability of a student scoring more than 70 percentage or less than 70 percentage of marks.

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A STUDY ON SOCIO-ECONOMIC ANALYSIS OF ENTREPRENEURS IN UNORGANISED SECTOR WITH SPECIAL REFERENCE TO KARUR TOWN[24]

Dr. P. KANAKARANI[25] & Dr. M. RADHIKA[26]

Introduction

Entrepreneurship is the back bone of economic growth and development. The development of entrepreneurship in India not only helps to remove poverty and unemployment and also helps to shift the surplus labour force from rural to urban areas. Entrepreneurship is increasing both in organised and unorganised sector. Still majority of the workforce directly or indirectly depends on unorganised sector. Entrepreneurship in unorganised sector provides opportunity to women to stabilise their economic and social status. According to the National Sample Survey of 2005, about one-third of the women workforce were found in unorganised sector and contributes nearly 20 percent to GDP. Increasing urbanisation provides more opportunities for both self-employment and entrepreneurship. This study is about socio-economic status of entrepreneurs in unorganised sector.

Review of Literature

Sivaloganathan (2002) examined about problems of women Entrepreneurs and prospects. Lavanya and Latha (2006) identified that hard work, self confidence; self determination, personality traits and availability of timely financial support were the important factors for success of women entrepreneurs. Kavita and Mallikarjun (2006) study focused the challenges faced by women entrepreneurs and suggested essentials of family support for women entrepreneurs and their growth. There are limited studies pertaining to entrepreneurs in unorganised sector in urban areas. Therefore, in this study an attempt is made to gather socio-economic status of the entrepreneurs in the study area and also it helps to make a comparison between the male and female entrepreneurs.

Objectives

This study aims to

- Find out socio-economic status of the male and female entrepreneurs in unorganised sector of the study area.
- Trace out the pull and push factors of male and female entrepreneurs in the unorganised sector of the study area.

Hypothesis

- ✔ There is no difference between educational level of both male and female entrepreneurs in urban unorganised sector.
- ✔ There is no difference between male and female entrepreneurs in terms of pull and push factors responsible to enter into entrepreneurship.

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Methodology

This study is based on both primary and secondary data. A structured interview schedule was prepared to collect information's for desired variables. The study is conducted in Karur Town, because Karur is a drought prone area, majority of the population depends on industrial sector. 70 entrepreneurs in unorganised sector were interviewed in study area. The collected data were presented for interpretation and analysed by using simple statistical tools like percentage, chi square and ranking method.

Analysis and Interpretation of Data

An economy consists of two main sectors which have been labelled as organised or formal and unorganised or informal sectors. The former is characterised by large firms with a degree of market power to all firms, good quality of working condition, with skilled employees, high wage rate, stable employment and standard administrative rules. Whereas the later sector is characterised by small peripheral firm, required low skilled labours, low investment, low wage rate, unstable employment and unregulated working environment.

The unorganised sector in the developing economy includes not only majority of the labour force and also majority of the entrepreneurs. Entrepreneurs are still disadvantaged in the sector due to lack of finance and institutional support.

Table 1

Social and Economic Status of the Entrepreneurs in Urban Area - Unorganised Sector

Particulars	Male	Percentage	Female	Percentage	Total	Percentage
Sex	52	74.29	18	25.71	70	100.00
Age group						
21-30	7	10.00	1	1.43	8	11.43
31-40	13	18.57	4	5.71	17	24.29
41-50	17	24.29	8	11.43	25	35.71
51-60	9	12.86	3	4.29	12	17.14
61+	6	8.57	2	2.86	8	11.43
Religion						
Hindu	39	55.71	16	22.86	55	78.57
Muslim	4	5.71	-	0.00	4	5.71
Christen	9	12.86	2	2.86	11	15.71
Community						
FC	4	5.71	2	2.86	6	8.57
BC	18	25.71	5	7.14	23	32.86
MBC	26	37.14	11	15.71	37	52.86
SC	4	5.71	0	0.00	4	5.71
Marital Status						
Unmarried	6	8.57	2	2.86	4	5.71
Married	46	65.71	13	18.57	61	87.14
Separate	0	0.00	2	2.86	2	2.86
Divorce	0	0.00	1	1.43	1	1.43
Widow	0	0.00	0	0.00	2	2.86

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Particulars	Male	Percentage	Female	Percentage	Total	Percentage
Educational Qualification						
Never been to School	9	12.86	5	7.14	14	20.00
Primary	4	5.71	2	2.86	18	25.71
Middle School	7	10.00	3	4.29	9	12.86
Secondary	15	21.43	4	5.71	8	11.43
Higher Secondary	11	15.71	2	2.86	13	18.57
Degree/ Diploma	6	8.57	2	2.86	8	11.43
Nature of activities of the Entrepreneurs						
Carpenter	4	5.71	0	0.00	4	5.71
Food Processing	9	12.86	2	2.86	11	15.71
Coaching Classes	3	4.29	0	0.00	3	4.29
Flower shops	10	14.29	2	2.86	12	17.14
Vegetable shops	4	5.71	5	7.14	9	12.86
Grocery shop	6	8.57	0	0.00	6	8.57
Tailoring and Garments	5	7.14	8	11.43	13	18.57
Others	11	15.71	1	1.43	12	17.14
Income of the Entrepreneurs (in Rs.)						
Less than 60,000	3	4.29	8	11.43	11	15.71
60001-80,000	11	15.71	4	5.71	15	21.43
80001-100000	28	40.00	3	4.29	31	44.29
100001-120000	6	8.57	2	2.86	8	11.43
120001 and above	4	5.71	1	1.43	5	7.14
Annual Household Income (in Rs.)						
Less than 80,000	2	2.86	5	7.14	7	10.00
80001-1,60,000	2	2.86	4	5.71	6	8.57
1,60,001-2,40,000	16	22.86	7	10.00	23	32.86
2,40,001-3,20,000	12	17.14	1	1.43	13	18.57
3,20,001-4,00,000	9	12.86	0	0.00	9	8.57
4,00,001 and above	11	15.71	1	1.43	12	17.14
Savings (in Rs.)						
Less than 60,000	2	4.76	8	19.05	17	40.48
60001-80,000	3	7.14	6	14.29	8	19.05
80001-100000	7	16.67	2	4.76	4	9.52
100001-120000	2	4.76	4	9.52	5	11.90
120001 and above	2	4.76	6	14.29	8	19.05
Total	16	38.10	26	61.90	42	100.00
Sources of savings						
Organised Banking Sectors	8	19.05	7	16.67	15	35.71

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Particulars	Male	Percentage	Female	Percentage	Total	Percentage
Friends/Relatives	3	7.14	6	14.29	9	21.43
Post office	0	0.00	7	16.67	7	16.67
others	5	11.90	6	14.29	11	26.19
Total	16	38.10	26	61.90	42	100.00
Debt Position (in Rs.)						
Less than 60,000	5	8.62	6	10.34	11	18.97
60001-80,000	6	10.34	1	1.72	7	12.07
80001-100000	16	27.59	0	0.00	16	27.59
100001-120000	7	12.07	1	1.72	8	13.79
120001 and above	15	25.86	1	1.72	16	27.59
Total	49	84.48	9	15.52	58	100.00
Source of Debt						
Organised Banking Sectors	8	11.43	4	5.71	18	25.71
Friends/Relatives	14	20.00	2	2.86	8	11.43
Money lenders	27	38.57	3	4.29	32	45.71
Total	49	84.48	9	15.52	58	100.00

Source: Primary data

From the survey, out of 70 entrepreneurs interviewed 52 (74 percent) are male entrepreneurs and 18 (26percent) are female entrepreneurs. Majority of the male as well as female entrepreneurs i.e. 24.29 per cent of male entrepreneurs and 11.43 percent of female entrepreneurs are in the age group of 41-50 years. The religion wise analysis shows that majority of the male and female entrepreneurs are Hindus. The community -wise analysis reveals that majority of the entrepreneurs both male and females are belong to most backward class (MBC) and backward class (BC). Majority of the male and female entrepreneurs are married.

Educational qualification reveals that both male and female entrepreneurs are not having equal qualification. About 21 percent of the male entrepreneurs are completed secondary level of education. On the other side majority of the female entrepreneurs are never been to school (7.14 percent). More number of female entrepreneurs is completed from secondary level of education to higher education as compare with male entrepreneurs.

Economic Status of the Respondents

From the survey majority of the male entrepreneurs i.e. 14.29 percent are having flower shops and food processing units. On the other hand majority of the women entrepreneurs are running vegetable shops. The income wise classification shows the economic status of the male and female entrepreneurs are in the same sector. Majority of the female entrepreneurs annual income was around Rs.60,000 per annum. On the other side majority of the male entrepreneurs are in the income group of 80001-100000. Savings habit varies between male and female entrepreneurs. Even though female entrepreneurs are in the low income groups, majority of them have savings. Out of total male entrepreneurs, only 38 percent are maintaining savings. On the other side nearly 62 percent of female entrepreneurs maintain savings to meet their family responsibilities. Both male and female entrepreneurs are using banking sectors.

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Debt position status also differs from male and female entrepreneurs. Majority of the male entrepreneurs that is 84 percent are have debt whereas only 15.52 percent of females are indebted. From the survey it is observed that the entrepreneur's main source of their debt is money lenders and their debt burden is increasing because of the huge interest rate, which prevents them for further expansion of the entrepreneurs business.

Chi-Square Test

Factor	Computed value	Table value significant at 1%	Table value significant at 5%	D.F	Inference
Education Level	24.38	24.73	19.68	11	$H_{0:}$ Rejected

Source: Computed from Primary Data

The above table reveals that the computed value of chi square test is greater than table value at 5 percent and nearer to 1 percent level of significant in the 11 degrees of freedom. Based on 5 percent level, null hypothesis is rejected which means there is significant difference between education level of male and female entrepreneurs in unorganised sectors of urban area.

From the analysis of socio-economic factors, there was not much difference observed between male and female entrepreneurs in terms of social status. But factors like educational status and other economic factors like income, savings and debt position of both male and female entrepreneurs are in different status.

Table 2

Pull Factors Responsible for Entrepreneurship in Unorganised Sector-Urban Area

Pull factors	Male				Female			
	Ranking			Weighted Score	Ranking			Weighted Score
	1st	2nd	3rd		1st	2nd	3rd	
Family business	4	9	16	46 (14.74)	6	8	2	36 (33.33)
Prior working experience	29	11	8	117 (37.50)	8	5	7	41 (37.96)
To be independent	13	21	12	93 (29.81)	2	1	6	14 (12.96)
Social status	6	11	16	56 (17.95)	2	4	3	17 (15.74)
Total	52	52	52	312 (100)	18	18	18	108 (100.00)

Source: Computed from primary data; Figures in bracket shows percentage

The above table 2 depicts the pull factors responsible of male and female entrepreneurship urban area under unorganised sector. Prior working experience ranks first (37.50) for pulling entrepreneurs into unorganised sector business irrespective of gender. Male entrepreneurs

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ranked 'to be independent' as second (29.81percent) and ranked third for social status. On the other side in view of female entrepreneurs ranked second for family business (33.33 percent) and social status ranked third. From the above analysis it can be concluded entrepreneurs needs experience before entering into an economic activity. This might be prior working experience or experience through their family. In the survey it is observed that nearly 48 percent of the respondents are moved to urban area from nearby villages of around 25 kilometres of radius. They moved to urban area in search of job opportunities. Due to drought in their area and under unemployment in agriculture sector the respondents moved to urban area.

Table 3
Push Factors Responsible for Entrepreneurship in Unorganised Sector-Urban Area

Pull factors	Male				Female			
	Ranking			Weighted Score	Ranking			Weighted Score
	1st	2nd	3rd		1st	2nd	3rd	
Low investment	32	19	7	141 (45.19)	6	5	7	35 (32.41)
Low skill	14	16	8	82 (26.28)	10	6	3	45 (41.67)
Time convenient	4	12	23	59 (18.91)	1	3	3	12 (11.11)
Dissatisfaction	2	5	14	30 (9.62)	1	4	5	16 (14.81)
Total	52	52	52	312 (100)	18	18	18	108 (100)

Source: Computed from primary data; Figures in bracket shows percentage

The above table 3 shows push factors for male and female entrepreneurship in urban area in the unorganised sector. It is observed that low level of investment is one of the reasons for choosing their business activity followed by this low level of skill (26.28 percent). There was not much difference found between male and female entrepreneurship in terms of compelling factors.

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Conclusion

Entrepreneurship is the only solution to solve the unemployment problem and for the effective utilisation of surplus labour force. Entrepreneurship is more beneficial at micro level like households as well as nation at aggregate level. It is clear that entrepreneurship cannot be developed without proper analysis. Therefore the indepth study of entrepreneurs social and economic background is necessary to address their challenges and issues particularly in unorganised sector of both rural and urban areas.

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SOCIO-ECONOMIC DEVELOPMENT OF BUS COACH BUILDERS IN KARUR DISTRICT, TAMIL NĀDU[27]

Dr. K. BABU[28]

Introduction

The automobile industries have contributed huge productivity and informal labour force in India. It has rapidly grown currently with an annual production of over 4.6 million vehicles and vehicle volume is expected to rise greatly in the future. The majority of private bus transport operators build their bus body in the ATAL coach factory at Karur which is located in Tamilnadu. Apart from this, commuters also wish to travel in the private bus apart from the government bus services, due to the interior and exterior attraction of the private buses. There are around 60 coach building units in Karur and many of them have sprung after late 1980s, when the industry demanded more coaches for public transport. The novelty, durability, expeditious completion and aesthetic appeal of the coaches fabricated in Karur units have made Karur zone has become a major hub of bus coach builders in southern India.

Statement of the problem

The ATAL coach company have been functioning and operating as reputed one in this Zone. Currently, maintenance cost are become higher than they would expect profit from the supplier (raw material), output deliverance. Tax premises also one of the constraints for coping mechanism of their regular or periodical operating service and formation of manufacturing with design(bus body).In this circumstances, TNSTC bus coach also carried out by them. How can they bared monetary aspects. Is there any constraint for acquiring modernized equipment and technology adaptations? Hence, this paper makes an attempt to find the solutions for bus body builders in this study area

Objectives

- To study the socio-economic background of ATAL Bus body Coach in the study area.
- To analyze the challenges faced by the Bus body Coach builders.
- To assess the coping mechanism of constraints faced buy the ATAL Bus body Coach.

Methodology

This study is basically from descriptive in nature with empirical evidence primary data have been comprises of gathered information and subsequent process of data analysis were carried out by SPSS. The suitable tools for statistical analysis are chi – square, factor analysis.

Sampling Design

This study has been adopted for simple random sampling. The selection of the respondents were identified 110 respondents from the ATAL Coach operators.

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Results and Discussion

The results were drawn from the data had been classified and analysed with suitable statistical tools such as Chi square and Factor analysis.

Table - 1

Age of the respondents with Duration of Operating Design

Age of the respondents / Duration of Operations	6-10 years	11-20 years	21-30 years	Above 30 years	Total
21-30 years	6 50.0%	6 50.0%	0 0.0%	0 0.0%	12 100%
31-40 years	5 17.9%	17 60.7%	1 3.6%	5 17.9%	28 100%
41-50 years	0 0.0%	6 20.0%	17 56.7%	7 23.3%	30 100%
51-60 years	6 17.1%	5 14.3%	6 17.1%	18 51.4%	35 100%
Above 61 years	0 0.0%	0 0.0%	0 0.0%	5 100.0%	5 100%
Total	**17 15.5%**	**34 30.9%**	**24 21.8%**	**35 31.8%**	**110 100%**

Source: Primary Data

There is significant associate between Age of the respondents with duration of operation status at 0.01 percent level. Chi-square value in 72.915.

Age is determinant factors for ascribed characteristics in socio economic background. Besides, if has considered with business and livelihood aspects, the person who has completed for matured stage with legitimate way of decision making. Moreover, it has connectivity with experience for trained designer in the bus body coach and its related knowledge were gathered through observation. The above table describes that the category of age with duration of operations who covered 60 per cent of the respondents are 31 to 40 years have operating experienced upto 11-20 years of duration. The category of 51 to 60 years, 56 per cent of them engaged 21 to 30 years of duration. Next to the category of 51-60 years, 51 per cent of them are engaged above 30 years of duration.

Table - 2

Constraints and nature of operations

Nature of coach builders / Constraints	Industrial tie up	Own operations	Association tie up	TNSTC Collaboration	Multi Business Undertaking	Total
Tax premises	23 82.1%	0 0.0%	0 0.0%	5 17.9%	0 0.0%	28 100.0%
Fluctuate income	23 45.1%	17 33.3%	5 9.8%	6 11.8%	0 0.0%	51 100.0%
Equipment cost	1 5.0%	0 0.0%	12 60.0%	0 0.0%	7 5.0%	20 100.0%
Operational Advancement Access	5 45.5%	0 0.0%	0 0.0%	0 0.0%	6 54.5%	11 100.0%
TOTAL	**52 47.3%**	**17 15.5%**	**17 15.5%**	**11 10.0%**	**13 11.8%**	**110 100.0%**

Source: Primary Data

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There is significant associate between constraints type with nature of operations status at 0.01 percent level. Chi-square value in 107.658.

The manufacturing concern have facing constraints are common of industrial sector. At the same time exceeding expenditures are unable to cope up with their survival. In recent days, bus body builders who meet out the above said (table 2) components are creating issues drastically emerged and affected. The category of Association Tie-up respondents who meet out the equipment coat is 60% (12 persons out of 17). Similarly, 82 per cent of the respondents who faced tax premises from the category of industrial Tie up. Therefore, collaborative measures and undertaking leads constraints for the coach operations for the Coach operations in this study area.

Table - 3

Factor Analysis

Socio Economic Background with operations and constraints

Variable code	Variable	Factor loading
3	Age of the respondents	.441
7	Own operation	-.265
22	Transportation tie up	.430
10	Operational expenses	.472
	Engine value	3.825
	% of variance	23.90
	Cumulative %	23.90

Source: Primary Data

Independent variable: Age of the respondents

The influencing and affecting factors are counted from the data. The principal compound analysis explained about the influencing factor for socio economic background and operative aspects of Bus Body Coach operators were depend on the expenditure and advanced equipment. The factor loading result .472 represent the operational expenses with own operations shown as -.265. Therefore, the dominant factor is operational expenditures are unable to cope up with the Bus Coach operators.

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Conclusion

The fitness of survival and manufacturing sector is always seems a “Cobweb” in India. The specific approach and unique features of Bus body operators in Karur Zone is premier Brand image of the Transportation sector which is applicable to major woks have been carried out for advancement of equipment and subsidiary assembled “Goods and Services” among Bus Transportation. This study result shows that the subsequent increased price for equipment, accessories, Godown-warehousing rental charges are unable to meet out for further improvement or next stage of modernized adaptation.

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AN ECONOMICS STUDY ON JASMINE CULTIVATION IN CHECKANURANI VILLAGE IN MADURAI DISTRICT[29]

Dr. S. KARTHIKEYAN[30] & Dr. S. SENTHILKUMAR[31]

Introduction

The term "Floriculture" is very popular in the discipline of horticulture. It is the art and knowledge of growing flowers to excellence, Floriculture includes the cultivation of flowering and ornamental plants for sales or use as raw material in cosmetic, perfume industry and pharmaceutical sector, the flower cultivation today has grown too much large proportions and offers a wide scope of growth with profits. The person associates with this field is called floriculturist. It also includes production of planting materials through seeds, cuttings, budding, grafting and marketing of flowers for flower produce.

The flower cultivation in India has huge, potential for generating income, employment and enhancing export earnings. Flowers occupy a significant place on the social culture of our country. Jasmine cultivation is increasingly regarded as viable diversification from the traditional field crops due to higher returns per unit and the increasing of 'saying it with flowers' during all the occasions. The flower is used for various purposes like making garlands, decorating hair of women, religious offering and so on. It is also used for production of jasmine concrete which is used in cosmetic and perfumery industries. More than 80 species are found in India, of which only three species are used for commercial cultivation.

Jasmine is known in India as the "Queen of the Night" because of its intoxicating perfume that is released at night. Jasmine symbolizes purity, beauty, love, passion and tranquillity. Although flowers are mute beauties, they convey best message love, joy and affection conveys purity, fancy thoughts and narcissus egoism. They are highly esteemed for the holiness. Even the birth and death of a human being is associated with flowers. The steam of jasmine is the reproduced parts of jasmine plants.

The jasmines are highly prized for their fragrant flowers which are used for the preparation of perfume. They are grown commercially in our country for the extraction of the essential oil for perfume and cut flowers which are commonly used to make garlands and veni, the latter being used for adornment of hair by women, particularly in the southern parts of the country. In the states of Tamil Nadu, Karnataka, Maharashtra and Andhra Pradesh, jasmine is cultivated as an economic crop for cut flowers. In the garden the jasmine is raised as a dwarf- growing shrub and a few species are grown as climbers. In the home garden, they are generally planted near the house, particularly adjoining the bedroom and along paths. So that the fragrance of their flowers may be best enjoyed from close quarters.

Uses of jasmine flowers

Jasmine is used for a variety of medicinal purpose. It has been used for liver disease, liver pain due to cirrhosis and abdominal pain due to acute diarrhoea. It is depressions and

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urine problems. The scent of the flower is said to help as a relief who suffers of depression. Jasmine as an essential oil has many beneficial uses. It is also wonderful oil for massage. The restorative effects of jasmine on the skin are widely the benefits by using jasmine massage oil. It is used in the beauty and healthcare industries. In foods, jasmine is used to flavour beverages, frozen dairy desserts, candy, baked goods, gelatines and pudding. Jasmine tea which seems to be a great medicine for a variety of health issues. The jasmine Tea has been decreased the blood pressure, role in Ayurvedic medicine. It is good for treating intestinal boils and ulcers. Jasmine is produced commercially for the perfume industry. In manufacturing, jasmine is used to add fragrance to creams, lotion and perfumes. Tropical remedies include the fresh juice squeezed from the plant. It is good for healing corns that appear on the foot and strengthened the immune system and regulated aging processes in our bodies. Drinking jasmine tea regularly prevents strokes and heart attacks. It also fights against cold, flu, antiviral and antibacterial properties. The jasmine flower plays a vital.

Jasmine cultivation in Tamil Nadu

Jasmine cultivation, Tamil Nadu ranks first in India .jasmine flower cultivation is very popular in Tamil Nadu. Majority of small and medium farmers dependent on the jasmine cultivation. In Tamil Nadu, jasmine is produced mainly in Madurai District and is transported to Mumbai for export to other countries. The Madurai is called "Malligai Managar" that is city of jasmine. Jasmine cultivation has provided good employment opportunity throughout year. Madurai is the second largest city in Tamil Nadu is mainly famous for Temples and Madurai Malli. The price of Madurai Malligai will be higher between the Tamil Months of Chithirai and Aadi.

The harvesting of the flower has required labour for everyday and required labour services only to 2-3 hours per day in the early morning. Mostly women were required for harvesting. The marketing of jasmine flower has the special type and have the highly perishable in nature, so it needs the quick marketing. The price of jasmine was fluctuating day by day and even hour to hour. The farmers were not directly sold to consumer and they highly depend on the commission agents cum wholesaler. Even some farmers get advance money from the commission agents. Tamil Nadu is the leading producer for jasmine in the country with an annual production of 77247 ton from the cultivated area HA.

Objectives

- To analyse the total cost income and net income on jasmine cultivations in Checkanurani village.
- To study the production of jasmine cultivation in the study area.

Methodology

The present study was conducted in the rural areas of Madurai District of Tamil Nadu. It consists of Eleven Taluks, namely Madurai north, Madurai west, Thirupparankundram, Vadipatti, Melur, Madurai east, Madurai south Usilampatti, Thirumangalam, Peraiyur and Kalligudi comprising of 665 revenue villages. The District has Thirteen blocks Madurai east, Madurai west, Thirupparankumdram, Melur, Kottampatti, Vadipatti, Alanganalllur, Usilampatti, Chellampatti, T.Kallupatti, Sedapatti, Thirumangalam and Kallikudi comparison of 420 village panchayats. A Checkanurani village is one of the important villages of this block. These village farmers mainly depend upon the flower cultivation Checkanurani village selected at random from the population of 3625. Total number of respondents is 40. The

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sample random sampling method was used for data collection. The data collected from the both primary and secondary data and analyzed with appropriate statistical tools have been used.

Analysis of data

The present study deals with the economic study on jasmine cultivation in Checkanurani village, Madurai District. The sample sizes of 40 respondents who are cultivating jasmine were selected and the necessary data were collected through interview schedule.

Table - 1

Types of flower cultivation in Checkanurani village

S. No.	Flower	Number of Respondents	Percentage
1	Jasmine	29	72.50
2	Ixora	4	10.00
3	Rose	5	12.50
4	Chrysanthemum	2	5.00
	Total	**40**	**100.00**

Sources: Primary data

The above table reveals that 72.50 per cent of the sample respondents are cultivating jasmine flower. It is identified that 10 per cent of the sample respondents are chosen Ixora flower. The sample respondents are cultivating of the rose flower is 12.50 per cent and 5.00 per cent of Chrysanthemum flower.

Table – 2

Total income, total cost and net income of jasmine cultivation in Checkanurani village

S. No.	Types of Flower	Total Revenue	Total Cost	Net Income
1	Jasmine	19,884,800	3,076,880	16,807,920
2	Ixora	1,232,800	348,240	884,560
3	Rose	2,052,000	541,440	1,510,560
4	Chrysanthemum	766,000	371,680	394,320

Sources: Primary data

The given the table the net income from jasmine cultivation was Rs.16,807,920/- in Checkanurani village and the net income from Ixora, Rose and Chrysanthemum was Rs.884,560/- Rs.1,510,560 and 394,320/- respectively. So in the study are net income from jasmine cultivators was very high when compared with other flowers.

Table – 3

Production of jasmine cultivation in Checkanurani village

S. No.	Land (in acre)	Total production in tones	Percentage
1	0.25	13360	6
2	0.50	86240	38
3	0.75	30080	13
4	1.00	82720	36
5	1.50	16000	7

Sources: Primary data

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Given the table shows that 6 per cent of jasmine was cultivated in 0.25 acres. Majority of the farmers are cultivating the land size in 0.50 acres. They are yielding 38 per cent of total production. The land size of 0.75, 1.00 and 1.50 acres of total production was 13 per cent, 36 per cent and 7 per cent respectively.

Conclusion

Jasmine cultivation has given profitable income to the flower cultivators. The cultivators spend less cost for production and earn more income in jasmine cultivation. They are producing more production also. Most of the cultivators are cultivate high level of jasmine cultivation than compare to other flowers, because people need jasmine for many purposes by using jasmine flower like adornment of hair for women, various occasions, and festivals and so on. Finally the cultivators are selected the jasmine for cultivation in the study area.

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A STUDY ON SOCIO ECONOMIC CONDITIONS OF MILK PRODUCERS AT ALAMBAKKAM VILLAGE IN TIRUCHIRAPPALLI DISTRICT[32]

Ms. I. ANNISHIA[33] & Dr. B. YASODHA JAGADEESWARI[34]

INTRODUCTION

"Cow is the source of progress and happiness. In many respects she is even Superior to mother"

~ Mahatma Gandhi

The unique feature of Indian dairy industry is that of milk production in our country is handled by small milk producers who are illiterate and ignorant. It can contribute substantially to farmer's income. During the last three decade, milk producers have transformed Indian dairying from stagnation to world leadership. In India dairy is recognized as an instrument for community and economic development. It plays a significant role in supplementing family income and also providing enough employment in rural areas besides providing cheap nutrition food to millions of people. The growth of dairy sector during the last three decade has been an impressive growth. Dairy enterprise plays a very important role in the rural economy. India is home for the largest milch animal population and milk production in the world. The milk producers are the backbone for the dairy industry. The extension of impact activities, supply of cattle feed and payment of remunerative price for milk is being provided or helps the milk producers to enhance the production. Dairy provides millions of small and marginal and landless labors means for their subsistence. Thus milk production is essentially a subsidiary activity to agriculture. The agriculture being only seasonal, the dairy industry provides off-season work; steady income keeps rural people employed throughout the year. Most of the rural people especially women to make their livelihood by rearing cattle and by supplying milk to the co-operative society. India is the second largest producer of milk next to USA. The cost of milk production is an important economic indicator for policy makers in regard to providing remunerative price for milk and assessing the farm household efficiency in milk production. Cow's milk is the only substitute for mother's milk to infants. It is a divine mother who nurtures the mankind in many forms .It is the only creature on the earth that is being considered as the second mother to the mankind is Cow. It was highlighted that the cow's milk was complete healthy food fit for people of all the age groups.

Nowadays green lands are hardly found. Hay, cotton seed cake, animal feed cake along with the mixture of pesticides become cow's routine food. Cattle field and natural cattle feed have been fast vanishing. Thereby naturally making cow to yield quality – less and nutrition –less milk.

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OBJECTIVES OF THE STUDY

1. To find out the socio economic conditions of milk producers.
2. To identify the problems of milk producers.
3. To provide a suitable suggestions for milk producers.

METHODOLOGY OF THE STUDY

This study is based on primary data collected by the investigators with the help of detailed questionnaire prepared mainly for this purpose. Only 50 samples were collected randomly, which was obtained by means of questionnaire by direct interview. The collected data were processed in the form of tables, bar diagram and pie chart. The data were analyzed using various statistical tools like percentage, average and mean.

SCOPE OF THE STUDY

Milk producers play a vital role in the livelihood of the farmers, especially farmers in the drought prone areas. In comparison with larger ruminants, the smaller ruminants can with stand higher degree of drought and can manage with the available feeds. These small ruminants are a source of employment and income to the farmers during the off season. This studies shows that farmers who are engaged in agriculture coupled with cow milk production. This study would help the researcher, policy maker and government in taking appropriate step for their well being.

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Table no: 1
Demographic Profile of the Respondents

Age	Number of Respondents	Percentage
16-30	10	20
31-45	20	40
46-50	15	30
Above 61	5	10
Total	50	100
Gender		
Female	27	54
Male	23	46
Total	50	100
Marital Status		
Married	49	98
Unmarried	1	2
Total	50	100
Religion		
Hindu	6	12
Christian	44	88
Total	50	100
Family Members		
3-5	24	48
5 Above	26	52
Total	50	100

Source: Primary Data

Table no: 1 depicts the study social status of milk producers likes religion, type of house, educational status, marital status etc. Majority of the respondent (40 percent) belonged to the age group of 31-45. Female population (54 percent) is more than male population (46 percent). In the study area majority of the respondents that is 98 percent are married. In the study area Majority of the respondents are Christians. 52 percent of the respondents are having 5 and above in the family members.

Table no: 2
Socio-Economic conditions of the respondents

Type of House	Number of Respondents	Percentage
Hut	4	8
Pacca building	45	90
Bungalow	1	2
Total	50	100
Educational Qualification		
1-5	12	24
6-12	15	30
Graduate	6	12
Professionals (ITI)	2	4
Illiterate	15	30
Total	50	100
Monthly Income		
Rs.3000 below	3	6
Rs.5000	38	76
Above Rs.10000	9	18
Total	50	100
Financial Support		
Own	43	86
Government Loan	2	4
Money Lender	5	10
Total	50	100
Food for the Cows		
Own	24	48
Shop	26	52
Total	50	100
Amount Spend Food for The Cows per month		
Rs.500-1000	18	36
Rs.1001-2000	16	32
Rs.2001-3000	9	18
Above 3000	7	14
Total	50	100
Main Occupation		
Agriculture	45	90
Only Milk Production	5	10
Total	50	100

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Satisfaction of the Job		
Satisfied	48	96
Not Satisfied	2	4
Total	50	100
Experience of the Respondents		
Traditionally	22	44
5-10 Years	28	56
Total	50	100
Selling of Milk		
Neighbour House	12	24
Tea Shops	1	2
Co-operative society	37	74
Total	50	100

Source: Primary Data

The above table shows that 90 percent of the respondents lives in pucca house. 30 percent of the respondent was illiterate. Most of the respondents (76 percent) in the study area earns Rs.5000 as the monthly income. More than 86 percent of the respondents bought the cows by their own. 10 percent of the respondents bought the cows by getting money from the money lenders with 12 percent of the interest rate. 52 percent of the respondents buy food for the cows in the shops. Majority of the respondents 36 percent spend Rs.500-Rs1000 per month on food for their cows and only 14 percent of the respondents spend Rs.3000 and above. Apart from milk producing 90 percent of the respondents do farming and keep this as allied activities. 10 percent of the respondents main occupation is only milk production Majority of the respondents 96 percent are satisfied with the job and only 4 percent are dissatisfied with the job. 56 percent of the respondents have 10 years experience in milk trading. 44 percent of the respondents do milk trading traditionally. Majority of the respondents 74 percent sell their milk to the co-operative society

SUGGESTIONS

- Most of the milk producers are selling their milk to the co-operative society. Therefore the co-operative society should increase the price of milk per liter, in order to increase the income of the people.
- The government should encourage the people to get loans from the commercial banks.
- Steps have to be taken in order to increase the government co-operative society, so that people can get income at a reasonable price.
- Milk producers should take necessary steps for the regular checkups for their cows in this regard government should arrange enough vetinary doctors and medical shops to get medicines.
- The government should provide more subsidies to the milk producers in order to raise the milk production.
- Proper shelter should arranged by the milk producers for the good health of the cows.
- Government should provide vetinary hospital facilities in the village.
- Government should provide food for the cows at low cost.
- The panchayat institutions must provide awareness about various government programs to milk producers.

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CONCLUSION

Dairy plays an important role in the economy for the years to come. The industry's major contribution in providing employment both direct and indirect and also provides nutritional standards of our people. Government of Tamil Nadu should come forward and more number of awareness programmes should be conducted then only milk producers can utilize the schemes offered by the government. This study aimed to understand the socio-economic status of milk producers. Factors like religion, type of house etc were analyzed. Education is another important indicator of social status, most of the people have completed schooling, and some of them were dropouts. The study concludes that majority of milk producers are found to be satisfactory of this job. Apart from milk business, the people can make curd, butter, cheese, ghee, and palcova and can sell it to the urban areas. People can also sell ghee to the sweet shops for the preparation of the sweets. This also generates income and helps to increase the standard of living of the people.

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HEALTH PROBLEMS OF URBAN SLUM DWELLER AT TIRUCHIRAPPALLI CITY CORPORATION[35]

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Introduction

"Life is not merely being alive, but being well"

- Marcus Aurelius

A slum is a residential area with substandard housing that is poorly serviced and / or overcrowded, and therefore unhealthy, unsafe and socially undesirable. A single dwelling can fit this description, but the term is usually reserved for large area, rural or more commonly urban. Slum, like the poor who inhabit them, have always exited, but became more extensive with the rise of the industrial city. Rising incomes, and stricter building and health regulations, have helped to virtually eliminate them in the developed world, where the main housing problems are now those of affordability and homelessness. Slums have become ubiquitous in the developing world, where they commonly take from of squatter settlements. The term slum is culturally defined and pejorative, with social as well as physical connotations. It is usually applied by outsiders, often intervention in neighbourhood affairs, through programs such as slum clearance, and the term has often been resented and the preferred intervention has been slum upgrading. The discourse of slum has always been contested.

Infrastructure of Health

With a population of 1.15 billion, and growing at almost 18million per year, India will be the most populous nation by 2030, with as many as 1.4 billion or more inhabitants. Rapid urbanization is a reality in India with the opening up of the markets and improved investment opportunities. Urban centres offer better avenues for employment opportunities and reflect the transition from an agriculture based society to a modern one.

It signifies the investment priority with regard to the creation of health care facilities. Infrastructure has been described as the basic support for the delivery of public health activities.

Urban slum in India

Nearly one in every six urban Indian residents live in a slum, newly released census data shows. The new numbers are significantly lower than the slum growth that had been projected for India.

Urban slum in Tamil Nadu

Tamil Nadu slum clearance board was established in September 1970 and has been implementing various housing, slum development and rehabilitation and resettlement programmes to ameliorate the living conditions of the slum families in Tamil Nadu. The

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board initially started its activities were gradually extended to other urban area of Tamil Nadu since 1984 onwards in phased manner.

The motto of Tamil Nadu slum clearance board is ***"God we shall see in the smile of the poor"***. The board has been implementing various programmes like in–situ tenemental schemes, in-situ plotted and infrastructure development and rehabilitation and resettlement schemes to improve the environs of the slum and the living standards of the urban facilities to achieve the slum free cities vision before 2030.

Urban slum in Tiruchirappalli City Corporation

The benefits of rapid growth and development of cities do not reach all its citizens equitably. Slum dwellers are invariably left out and do not have access to even basic infrastructure such as water supply and sanitation. Compounding this problem is the existence of slums and its occupants that the city does not recognize. This project sought to provide WatSan facilities to people in a sustainable manner. This was accomplished by adopting the following strategies:

- Advocacy with government to renovate community toilets and enable them to be managed by Self Help Groups.
- Training Self Help Groups to manage pay and use community toilets.
- Raising awareness on hygiene and safe water and sanitation practices.
- Helping people get individual water connections and sanitation units and linkage to credit through GUARDIAN Microfinance.
- Initiating community managed water and sanitation facilities in the newly approved Trichy slums.

The project was supported by Gramalaya's strong women's federation (WAVE) and Association for Water and Sanitation, Hygiene (AWASH) committees formed under this project.

Statement of the Problem

Sanitation is the main problem of human health because it's affects the human health. So this study mainly focused the health of the slum dwellers of Tiruchirappalli City Corporation.

Objectives

- ♣ To study the Economic status of slum dwellers
- ♣ To analysis the availability of Infrastructure facility in the slum area.
- ♣ To analyses the Morbidity pattern of the slum dwellers

Hypothesis

H_0 = There is no significant relationship between drinking water and Morbidity pattern.
Ha = There is significant relationship between drinking water and Morbidity pattern.

METHODOLOGY

The data were collected both primary data and secondary data. The primary data were collected by the researcher from the slum dwellers. In this study researcher collected 50 samples in the study area. The respondents are one person from each household. For this study simple random sample method was used.

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Chi-square test is applied to find out the infrastructure and short –term morbidity pattern of slum dweller

Chi- square	Df	Table Value	Level of significance
187.46	9	16. 919	0.05

As the calculated value of chi-square (187.46) is greater than table value (16.919) at 5% level of significance. The alternative hypothesis is accepted and the null hypothesis is rejected. So the chi-square result shows that there is a significant relationship between Drinking water and Morbidity pattern.

Conclusion

This study concluded that the people of slum dwellers were affected from various health problems because of not using proper drinking water. This will leads to them to fall in sick. The slum dwellers are facing lot of health problems like both short term and long term morbidity. So, the researcher makes to attempt to know about the health problems of the slum dwellers. When the Government of India improves the infrastructure facilities, mainly drinking water facility to our rural area and particularly slum areas the health status will be improve automatically.

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A STUDY ON COSTS AND RETURNS OF PADDY CULTIVATION IN CUMBUM BLOCK, THENI DISTRICT[38]

Dr. S. THEENATHAYALAN[39] & Dr. S. MURUGAN[40]

INTRODUCTION

Agriculture is the backbone of Indian economy according to ***Mahatma Gandhiji***. Agricultural development is a pre-requisite of our national prosperity. It is the main source of livelihood of the people. Nearly two-thirds of its population depends directly on agriculture. Agriculture provides direct employment to 70 percent of working people in the rural India. Besides large number of the population is also engaged in agro-based Industries, Agriculture meets the food requirements of the large population of India. It ensures food security for the country. Substantial increase in the production of food grains like paddy, wheat and other non-food grains like tea, coffee, spices, fruits and vegetables, sugar, cotton have made India self-sufficient. Agriculture also contributes little to the national income of our country. The growth of most of the agro based industries depends on agriculture. It produces several inputs for industries. It forms the basis for many industries like cotton, textile, jute, sugar industries etc by providing cotton, sugarcane and oilseeds.

Origin of Paddy

Oryza Sativa, it is believed, is associated with wet, humid climate, though it is not a tropical plant. It is probably a descendent of wild grass that was most likely cultivated in the foothills of the far Eastern Himalayas. Another school of thought believes that the paddy plant may have originated in southern India, then spread to the north of the country and then onwards to China. It then arrived in Korea, the Philippines (about 2000 B. C.) and then Japan and Indonesia (about 1000 B. C.). When Alexander the Great invaded India in 327 B. C., it is believed that he took paddy back to Greece. Arab travelers took it to Egypt, Morocco and Spain and that is how it travelled all across Europe. Portugal and Netherlands took paddy to their colonies in West Africa and then it travelled to America through the 'Columbian Exchange' of natural resources. But as is traditionally known, paddy is a slow starter and this is also true to the fact that it took close to two centuries after the voyages of Columbus for paddy to take root in the Americas. Thereafter the journey of paddy continues with the Moors taking it to Spain in 700 A. D. and then the Spanish brought paddy to South America at the beginning of 17th century. The journey of paddy around the world has been slow, but once it took root it stayed and became a major agriculture and economic product for the people. In the Indian subcontinent more than a quarter of the cultivated land is given to paddy (2011-12).

STATEMENT OF THE PROBLEM

The population of India exceeds 1200 million. It is estimated that it will reach 1400 million by 2025. It requires further more agricultural produce. Substantial and sustainable

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growth in agricultural production is required to meet the basic necessities of a large and ever growing population in our country. It is also needed to generate the agricultural surpluses required for economic development with emphasis on employment and equity.

Since the introduction of the New Agricultural Strategy (NAS) in 1966-67, rice cultivation in India traversed a long way. It has had varying impacts on different crops and its varieties in different areas and also on different classes of farmers within the same area. With the widespread use of high yielding varieties of seeds and the introduction of modern technology, fertilizer use also has been increasing with rising yields. This calls for a comparative study of levels of input application for the paddy crop in the study area. The Green Revolution has marked a transition from traditional to modern era in the sphere of agriculture. Since the determination of yield is influenced by various inputs used an understanding of the contribution of each input used to the ultimate output of the crop becomes essentials.

OBJECTIVES OF THE STUDY

1. To estimate the Costs and Returns structure of paddy cultivation in Cumbum block.
2. To find the economics of paddy cultivation in the study area and
3. To suggest the measures for the development of paddy cultivation in the study area.

PERIOD OF THE STUDY

The study period was restricted to the agricultural year June 2018- May 2019.

METHODOLOGY

Theni district is one of the prominent agricultural districts in Tamil Nadu. Out of the total population, nearly 60 percent are engaged in agriculture. Theni district consists of eight blocks, of these; Cumbum block shared the largest percentage of Gross cultivated area of paddy. So it has been selected for the present study.

Multi-stage Random sampling technique has been adopted for the study in Theni district, District as universe, block as stratum, the village as unit of sampling and the cultivator as an ultimate unit. In the selected block, sample villages were selected based on the criteria of area of paddy cultivation. They are namely Keelakudalur (West), Kamayakoudanpatti and Uthamapuram.

SAMPLE DESIGN

Sample design from the selected villages in Cumbum block.

TABLE 1

S. No.	Revenue Villages	Total Number of Farmers	Paddy Cultivators (Sample Respondents)		Total	Percentage
			ADT46	ADT36		
1.	Keelakudalur (West)	292	21	21	42	35.00
2.	Kamayakoudanpatti	270	19	19	38	31.67
3.	Uthamapuram	281	20	20	40	33.33
	Total	843	60	60	120	100.00

Source: Village Office and Block Statistical Hand Book, Cumbum (2018-19).

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Table 1 depicts the total number of paddy farmers in the study area are 843. Out of 843, a total of 120 sample farmers have been selected. Further 120 sample farmers are divided into 60 and 60 for each variety of paddy in the study area. 120 sample farmers have been selected from three revenue villages on the basis of proportionate random sampling technique.

TOOLS OF ANALYSIS

Costs C (TC) = Costs A (TFC) + Costs B (TVC)

Where:

Costs C is Total Costs, **Costs A** is Total Fixed Costs and **Costs B** is Total Variable Costs.

Costs A includes Rent and Depreciation and Interest on fixed Capital.

Costs B includes Human labour, Machine labour, Bullock labour, Inorganic fertilizer, Pesticides, Seeds, Organic manure, Irrigation and Interest on working capital.

COSTS AND RETURNS STRUCTURE OF PADDY CULTIVATION

Table 2 indicates the costs and returns structure of ADT45 and ADT36 varieties of paddy and their aggregate during the year 2018-19.

TABLE 2
COSTS AND RETURNS STRUCTURE OF TWO PADDY VARIETIES IN CUMBUM BLOCK

(per acre)

Costs and Returns Components	ADT45		ADT 36		Average	
	Value in ₹	Percentage	Value in ₹	Percentage	Value in ₹	Percentage
Costs A						
Rent	1242.13	5.60	1278.21	6.29	1260.17	5.93
Depreciation and Interest on Fixed Capital	1539.27	6.95	1720.80	8.47	1630.02	7.68
Total (Costs A)	**2781.40**	**12.55**	**2999.01**	**14.76**	**2890.19**	**13.61**
Costs B						
Human labour	3173.13	14.32	2862.39	14.10	3017.76	14.21
Machine labour	3789.90	17.10	3425.23	16.87	3607.57	16.99
Bullock Labour	410.10	1.85	735.28	3.62	572.69	2.70
Inorganic fertilizer	4760.57	21.48	3910.76	19.26	4335.67	20.42
Pesticides	1517.21	6.85	1100.45	5.42	1308.83	6.16
Seeds	800.13	3.61	785.78	3.87	792.96	3.73
Organic manure	1521.36	6.86	1134.73	5.59	1328.05	6.25
Irrigation	1793.47	8.09	1923.37	9.47	1858.42	8.75
Interest on working capital	1614.50	7.29	1428.62	7.04	1521.56	7.17
Total (Costs B)	**19380.37**	**87.45**	**17306.61**	**85.24**	**18343.49**	**86.39**
Total Costs (Costs C = Costs A + Costs B)	**22161.77**	**100.00**	**20305.62**	**100.00**	**21233.70**	**100.00**
Yield in kg	2712.13		2415.50		2563.82	
Price Per kg (in ₹)	13		13		13	
Yield in ₹	35257.69		31401.50		33329.60	
Net income over Costs B	15877.32		14094.89		14986.11	
Net income over Costs C	**13095.92**		**11095.88**		**12045.90**	

Source: Survey data.

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Table 2 highlights the costs and returns structure of the two paddy varieties showed that yield per acre in physical and value terms is 2712.13 kg and ₹ 35257.69 for ADT45, and 2415.5 kg and ₹ 31401.5 for ADT36. The physical and value terms of ADT45 are higher than that of ADT36. The aggregate average returns for the two varieties of paddy in the study area worked out to be 2563.82 kg and ₹ 33329.60.

The pattern of net income per acre over Costs A, Costs B and Costs C for the two varieties is found to be similar to that of yield. The net income per acre for the two varieties over Costs A, Costs B and Costs C is ₹ 32476.29, ₹ 15877.32 and ₹ 13095.92 for ADT45 and ₹ 28402.49, ₹ 14094.89 and ₹ 11095.88 for ADT36 respectively.

The share of Inorganic fertilizer costs is higher in Costs B, followed by machine labour and human labour in both cases. This indicates the Inorganic fertilizer input oriented nature of the selected paddy varieties. Irrigation, interest on working capital, pesticides and seeds constituted the next major component of the total costs. Other items of input costs are also found to occupy a similar position in the costs composition of ADT45 and ADT36 paddy cultivators.

The total costs incurred by the cultivators of ADT45 variety (₹ 22161.77) is higher than the costs incurred by the cultivators of the ADT36 variety (₹ 20305.62). Costs C also found to be the largest for ADT45 cultivation, compared to the ADT36. The proportion of depreciation costs and interest on fixed capital in Costs C is nearly the same for both the varieties.

The share of fertilizer costs in variable costs is 21.48, 19.26 and 20.42 per cent for ADT45, ADT36 and the aggregate average respectively.

ECONOMICS OF PADDY CULTIVATION

Table 3 reveals the data on the economics of paddy cultivation for the two varieties of paddy. Costs benefit ratio is calculated by dividing net returns over Costs C by Costs C.

TABLE 3
ECONOMICS OF PADDY CULTIVATION

(Value in Rs. per acre)

Sl. No.	Particulars	ADT45	ADT36
1.	Gross Return	35257.69	31401.5
2.	Total Fixed costs (Costs A)	2781.40	2999.01
3.	Net returns over Costs A	32476.29	28402.49
4.	Total Variable Costs (Costs B)	19380.37	17306.61
5.	Net Returns over Costs B	15877.32	14094.89
6.	Costs C	22161.77	20305.62
7.	Net Returns over Costs C	13095.92	11095.88
8.	Costs of Production per quintal (Costs A)	817.14	840.64
9.	Costs – Benefit Ratio (Costs C)	0.59	0.54

Source: Survey data.

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Table 3shows the gross return, net return, total costs and fixed costs are higher for ADT45 than that of ADT36 variety of paddy. The costs-benefit ratio is also higher for ADT45 than for ADT36 variety. However, the costs of production per quintal is higher for ADT36 than for the ADT45. The costs of production per quintal in terms of Costs C is ₹ 817.14 and ₹ 840.64 for ADT45 and ADT36 varieties respectively. The costs benefit ratio reveals that an every rupee spent, the respective varieties, namely ADT45 and ADT36, fetch a benefit of ₹ 0.59 and ₹ 0.54. It could be observed from this that ADT45 yielded a higher returns at a lower costs. Thus, it may be concluded that the cultivation of ADT45 variety is economically more beneficial to paddy cultivators when compared to ADT36 variety.

SUGGESTIONS

Among the two selected varieties of paddy, ADT45 performs well in terms of relatively greater net return per acre. Besides, this variety is well-suited for kharif season, due to its lower irrigational requirement. Therefore, this variety may be recommended as economically beneficial to farmers with due consideration to the market demand and its seasonal suitability.

CONCLUSION

Theni district is one of the prominent agricultural districts in Tamilnadu. Paddy Cultivators of Cumbum block are mostly following the traditional methods of cultivation. This should be replaced by modern methods of cultivation such as introduction of High Yielding Varieties of seeds (**HYVs**) and use of machines in the place of men and animals. In addition to that modern irrigational equipments must be provided by the Government to farmers in a subsidized price. Therefore it is absolutely necessary for the Government to make sure that the availability of loan and insurance coverage should be ready in time. In addition the Government should create awareness about the best and modern cultivation practices among the cultivators in Theni block. Moreover the Government should come forward to provide Minimum Support Price (**MSP**) and regulated market for cotton in the study area. This could definitely increase the production of cotton in the study area and ultimately leads to the higher standard of living of the farmers and for the betterment of the nation as well.

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EMPLOYMENT CHALLENGES OF AGRICULTURAL LANDLESS HOUSEHOLDS IN SOUTH SALAKKADU VILLAGE IN TIRUCHIRAPPALLI DISTRICT[41]

J. INDIRANI[42]

Introduction

India contains the largest numbers of both rural poor and landless households. Landlessness is the best indicator of rural poverty in India, better than either caste or literacy. The "land route" is not the only route out of the poverty, but in a country where landlessness is the best predictor of poverty, it is a route that cannot be ignored. After independence there are many changes in rural society. In the age of globalization, there are many challenges in front of farmers, basically marginal farmers and landless labours. Rural men and women, especially in poor landless households, engage in diverse and multiple activities to improve their livelihoods by maximizing income-generating activities, while minimizing vulnerability and risk, and achieving other household objectives. These activities may include farm and non-farm actions. Their low social status virtually excludes them from full participation in a large number of more remunerative economic activities. The location in rural sector and virtual landlessness compels them to work in agriculture as wage labours at low wages, uncertain employment conditions.

In developing countries like India, agriculture and agricultural related activities provide livelihood for the majority of the population in rural areas. The agricultural production is not only depends on the landholding farmers alone but also on the landless labourers who contribute their physical labour**.** The traditional agricultural practices were mostly confined to manual labour and the intervention of heavy machinery replacing the human labour gradually in recent times in farms activities in agriculture sector. Hence it is important to understand the conditions of agricultural labour and issues related to agricultural labourers.

The continuous employment for landless labourers in agriculture is one of the major problems in the present agrarian scenario. The small and marginal farmers also work as agricultural labourers since these groups find agriculture as not viable for many reasons, viz, drought situations, less productivity and unviable conditions in agriculture etc. So they depend on their physical labour most of the times (Praveen Kumar, 2017). Landlessness is caused by the complex interaction of various topographical, socio economic and political forces. Increase in the number of landlessness leads to increase in the number of people who are unable to meet their livelihood requirements, for which eventually concomitant social problems arise. Landlessness has serious impact on the different aspects of human security. The most serious problem that arises is the incapability of the poor people to have access to sufficient food. Insufficient income leads to their inability to buy adequate food for the family. The poor farmers are not able to secure their access to food even when food is

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available in the locality or the regional market. In addition to being deprived from their right to land, the landless farmers are affected by shocks and events beyond their control, such as climatic conditions (droughts, floods and cyclones), Price shocks etc (Chowdhury, 2009).

Review of Literature

According to the Nobel laureate, Amartya Sen, access to food depends on the entitlement of certain factors including entitlement to productive assets, such as land. Lack of entitlement to land is one of the most frequently cited causes of poverty, with the chronically poor being exposed directly to the various interlocking factors that push them further into poverty. Acute food crisis associated with the constant poverty leads to the prevalence of starvation, which brings multidimensionality in the aspect of food insecurity of the landless people. The agricultural labours were engaged in agricultural operations. Even children belonging to the landless agricultural labour families were employed in weeding, husking, spreading manures, watching of crops and catering (Mamoria and Tripath, 2000). The employment generation, income of different categories of labour and the extent of indebtedness and earning prevalent among rural landless labour. The evidence relating to rural labour household and agricultural labour households shows an explicit overall decline in employment both for male and female labour. There is also a decline in the average number of earning members per household (Sushanta Mahapatra, 2007). This phenomenon has led to a number of censures that land reform has worsened enduring poverty by increasing the number of landless rural households. In addition to that rates of poverty reduction among the landless are the same as those with land. Therefore, they suggest that the rise in the number of the landless rural households has been a positive factor in the process of overall poverty alleviation as farm households have seized new job opportunity especially paid jobs (Ravallion and van de Walle, 2008).

Objectives of the study

(i) to study the socio economic condition of landless households;

(ii) to analyse the employment opportunities of the landless households.

Methodology

The purpose of this research paper is to understand household livelihood conditions of the landless labour who are not capable to get work in the formal sector due to various reasons such as poor human and social capital, lack of physical environment and lack of attention of state in the welfare activities. This research is based on the primary source of information. The primary data are collected from the South Salakkadu Village in Tiruchirappalli district; through using purposive sampling method. 50 households are selected as samples for collecting data and the collected data are processed and analysed by using simple percentage tabular analysis.

Socio-Economic Background

As analyzing the socio-economic background of landless agricultural workers, the total studied landless households, above 30 per cent of the respondents are hailed from the age group of below 30 years (34%) and 40-50 years (32%). Less than one fourth of the respondents are hailed from the age group of 50-60 years (16%) and 30-40 years (14%). Only few (4%) of them are hailed from the age group of above 60 years. The greater parts of the landless labourers are belonged to the productive age group. Fifty two percent of respondents

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are belonged to Most Backward Community (MBC), 38 percent of them are belonged to Backward Community (BC) and remaining 10 percent of members are belonged to Scheduled Caste category. While seeing their literacy, they are educated in certain extent. Among them less than half (42%) of the respondents are studied primary level. More than half of the respondents are studied higher secondary (28%) and degree (24%) level of education. very least percent (6%) of the respondents was illiterate. Most (98%) of the respondents are married and only 2% of the respondents are unmarried.

Table 1: Socio-Economic Profile

Characteristics	Number of Respondents	Percentage
Age		
Below 30	17	34
30-40	7	14
40-50	16	32
50-60	8	16
Above 60	2	4
Total	**50**	**100**
Community		
MBC	26	52
BC	19	38
SC	5	10
Total	**50**	**100**
Educational Qualification		
Primary	21	42
Higher secondary	14	28
Degree	12	24
Illiterate	3	6
Total	**50**	**100**
Type of family		
Joint family	42	84
Nuclear family	8	16
Total	**50**	**100**
Ownership of house		
Own house	34	68
Rent house	16	32
Total	**50**	**100**
Type of the House		
Pucca	29	58
Semi pucca	21	42
Total	**50**	**100**
Monthly Income (Rs.)		
Below 4000	26	52
4000-6000	15	30
Above 6000	9	18
Total	**50**	**100**

Source: Primary data

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More (84%) number of the households has followed in joint family system and remaining 16 percent of the respondents lived as nuclear family. This trend shows the existence of joint family system in rural area while comparing urban. More than half (68%) of the respondents are owned house and almost one-third (32%) of the respondents are lived in rented houses. Regarding the type of house, more than half (58%) of the respondents house type was pucca house and less than half (42%) of the respondents are resided in semi-pucca houses. The respondent's ownership and type of house reflects their moderate living standard of life. Through different source of employment 52% of the respondents are earned less than Rs.4000 per month. The remaining (48%) respondents are earned more than Rs.4000 per month. It indicates that the wage earned through local employment is very low and insufficient to meet out their day to day basic needs.

TABLE 2: EMPLOYMENT OPPORTUNITIES FOR THE LANDLESS HOUSEHOLDS

Employment	**Number of Respondents**	**Percentage**
Yes	36	72
Construction work	3	6
Painter	4	8
Paddy field	10	20
Rice mill work	19	38
Total	**36**	**72**
Commutation		
Trichy	2	4
Mannachanallur	8	16
Ayyyampalayam	2	4
Lalgudi	2	4
Total	**14**	**28**
Nature of work		
Driver	2	4
Construction work	8	16
Carpenter	1	2
Tailoring	1	2
Catering	2	4
Average wage (Rs.)		
Below 5000	2	4
5000-10000	10	20
Above 10000	2	4
Total	**14**	**28**

Source: Primary data

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The above table shows that the natures of employment opportunities are available in their village. Among them, Majority (72%) of the respondents are got employment in their village such as rice mill (38%), agricultural work (20%), painting (8%) and construction (6%). Due to irregular employment opportunity in their village, they commuted to nearby places for getting employment like Mannachanallur (16%), Tiruchirappalli, Ayyampalayam and Lalgudi (4% each) to search employment. The commuted workers are engaged in different works according to their skills such as construction (16%), driving and catering (4% each) and tailoring (2%). The wage earned by the respondents through above mentioned employment was a range between Rs.5000-10000 was high (20%). Next to that 4% of the respondents each are earned below Rs.5000 and above Rs.10000. They expressed that, lack of continuous employment in agricultural activities like earlier in their villages in order to agricultural distress they are made to push out from their native to indentify employment. The process of searching employment, from agriculture to other non-form activities is very pressurized and also declined their wage level, bargaining capacity, poor /insecure working condition which leads to poverty.

CONCLUSION

This micro empirical study has explored the rural landless household livelihoods in a South Salakkadu village economy of Tiruchirappalli in Tamil Nadu. The results investigate the vulnerable and hopeless condition of rural landless workers. This research endorsed the view of changing occupation pattern, occupation diversification and work opportunities availed by the landless workers. They did not feel free and capable to choose a remunerable occupation as they could not shift to asset creation due to cruel and vicious circle of low literacy- unskilled and semi-skilled work opportunities - low income- poor living condition. With these actualities regarding poor at the village, it is not difficult to predict the grey future of coming generations of rural workers in the village. The landless workforce has been facing vulnerability and desperation due to poor employment conditions and low earnings in the free market economy. To overcome the plight of the landless households, interlinked public institutions should be developed at the village level.

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A STUDY ON THE SOCIO-ECONOMIC CONDITIONS OF CONSTRUCTION WORKERSIN KOOTHAIPPAR VILLAGE, TIRUCHIRAPPALLI DISTRICT[43]

M. DHANESHWARI ALAMELU[44]

INTRODUCTION

Unorganized sector is the largest sector in the Indian economy .It covers both marginal labours as well as workers living on the borderline of starvation and survival of rural and urban area .It constitutes 60% of rural workforce and 32% of urban workforce .The total workforce .The total workforce contributes 50% of GDP in The economy .According to NSS 2004-05 report, about 324 million worker engaged in this sector and constitutes 80% of The Total workforce In India. The workforce employed in this sector under takes various activities such as construction work, Beedi making, bamboo making, petty production, domestic work, street vending, quarrying etc.

Construction is one of the Important Industries employing a large number of people on its workforce In India, The construction industry is the second largest and a fast growing sector. According to National Sample Survey 2016-17, about 25.71 million building and other construction workers are there in India. The building and other construction workers are one of the most vulnerable and temporary in nature. The relationship between employer and employee is temporary and working hours are uncertain .They are characterized by inherent risk to the life and limp of workers. They are basically unskilled, migrant, socially backward and uneducated with low bargaining power. About 340 million of the workforce are engaged in unorganized sector in the year 2018, of which around half of them are from the construction industry. They from the country's third largest employee base and fall in informal sector without any job security. Thus they are generally not covered under any government law.

Thus, in the present scenario, due to the advent of industrialization and recent developments in the country. Construction industry is taking a pivotal role for construction of building, roads, bridges, and so forth. So the present paper aims to study "A Study on the Socio-economic condition of construction workers in Koothaippar village, Tiruchirappalli district".

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OBJECTIVES

- To study the socio-economic conditions of the construction workers
- To evaluate the working condition of the construction workers
- To identify the occupational diseases of the respondents

Methodology

The information with regard to the socio-economic condition of construction workers is mainly based on the primary data, collected though questionnaire and personal interview

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[43] Paper presented in the **40th Annual Conference of Association of Economists of Tamil Nadu** Organized by Department of Economics, St. Joseph's College (Autonomous), Tiruchirappalli-620 002 on 2nd February, 2020.

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methods .The total sample is 50which were randomly selected. Secondary data were collected from journals, books, magazine, website and village administrative office.

Scope of the Study

The importance of the construction industry in economic development is vast. It is The useful instrument for achieving various development goals .The economic importance of the industry in all countries irrespective of level of development, construction industry plays an central role in long term social and economic development .The manpower requirements in this industry is drive and extensive. It provides high degree of employment opportunities for semi-construction industry and development of the country. So, there is need for analyzing the socio-economic conditions of construction workers in order to find out their out their standard of living.

Study Area

Koothaippar village is 20k.m from Tiruchirappalli tows. The population of Koothaippar village is 1250.Out of which, 700 are males and 500 are females. This study pertains the socio-economic condition of the construction workers in Koothaippar village.

REVIEW OF LITERATURE

P. Jayalakshmi (2016) in his article, "socio–economic condition of women in construction industry.'' He aimed to explore socio-economic problems of Visakhapatnam women workers at construction sites in working environment and to documents issues like gender bias, living condition vulnerability and slackness, wages their economic status by finding out their savings, loan, etc… The major finding of construction women labour facing many problems they asked government security for their job.

ANALYSIS AND INTERPRETATION OF DATA

The study on the socio-economic condition of construction workers in Koothaippar Village is presented in Table 1.

TABLE:1

Socio- Economic Condition of the Construction Workers

Characteristics	No. of respondents	Percentage
Age Group		
20-30	6	12
30-40	11	22
40-50	15	30
50-60	11	22
60-70	7	14
Total	50	100
Religion		
Hindu	45	90
Christian	5	10
Total	50	100

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Community		
BC	21	42
MBC	10	20
SC	19	38
Total	50	100
Educational Qualification		
Illiterate	22	44
Up to Primary level	5	10
Up to high school level	18	36
Higher secondary level	5	10
Total	50	100
Marital status		
Married	38	76
Un married	4	8
Window	8	16
Total	50	100

Source: Primary data

- Table 1 reveals that 86% of the respondents are in the group of 20-60 years who belong to productive age group. The remaining percentage of the respondents are in the age group of above 60 years. This indicates that due to their poor economic condition. They engage themselves in these construction activities in order to support their family income.
- It is observed that 90% of the respondents are Hindus and remaining percentage of the respondents are Christians. This indicates that majority of the respondents are Hindus in the study area.
- It is found that 42% of the respondents belong to backward community. About 38% of the respondents belong to scheduled caste community. Only 20% of the respondents belong to most backward community. It shows that the village consists of various categories of communities, which spread across the society.
- It is concluded that 56% of the respondents are illiterates. Among the illiterates, 36% of the respondents have undergone high school level education, 10% of them have undergone primary school level education and an insignificant percentage of them have undergone higher secondary level of education. This shows that their family condition and low level education forced the respondents to indulge in construction activity.
- It is to be noted that 92% of the respondents are married. Only an insignificant percentage of the respondents are unmarried. Among the married respondents, 16% of the respondents are widows.

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Table: 2
Working Conditions of the Construction Workers

Characteristics	No .of respondents	Percentage
Mode of Repayment		
Regular	18	69
Irregular	8	31
Total	26	100
Type of Work		
Contract	20	40
Casual	4	8
Combined	26	52
Total	50	100
Hours		
9 AM to 5 PM	20	40
10AM to 6PM	30	60
Total	50	100
No of working Days		
3 days	4	8
4 days	12	24
5 days	10	20
6 days	8	16
7 days	16	32
Total	50	100

Source: Primary data

- Table 2 reveals that only 52% of the respondents in the study area borrow money from different sources in order to fulfill their needs. These respondents repay the debt either regularly or irregularly. Among those respondents 69% of them repay the dept regularly and remaining percentage of them repay the debt irregular according to the inflow of income.
- Table explains that about 52% of the respondents do combined work as contract and casual labours. Only 40% of the respondents are contract labour and an in significant percentage are casual labours.
- All respondents work for 8 hours, but the working time differs. About 60% of them, work from 10 AM to6 PM and remaining percentage of them work from 9 AM to 5 PM. This indicates that there is no difference in the work and working time of respondents which covers their lunch time. So they work for 7 hours per day.

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- 68% of the respondents are working for 5 to 7 days per week due to their poor economic condition and engaging themselves as contract and casual labour. Only 32% of the respondents are working for 3 to 4 days per week. This shows that these respondents are working as causal labour. So they are not able get regular work

Table No: 3
Occupational diseases suffer by the respondents

Characteristics	No. of respondents	Percentage
Occupational Diseases		
Head ache	4	13
Asthma	2	7
Body pain	9	30
Skin diseases	14	47
Breating problem	1	3
Total	50	100

Source: Primary data

- The above table reveals that 60% of the respondents are affected by occupational diseases like headache, asthma, body pain and skin diseases. Among these respondents, about 47% of them are affected by skin disease and followed by body pain (30%). Only an insignificant percentage of the respondents are affected by headache and asthma.

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FINDINGS

- The village consists of back Ward caste, most back ward caste and scheduled caste in which majority belong to back ward caste, followed by scheduled caste community.
- About 86% of the construction workers are in the productive age group of 20-60 years.
- More than half of the construction workers are Iiterates in which majority of them have undergone high school level education
- Majority of the respondents purchase food items from fair price shop as well as from private shop
- More than 50% of the construction workers do combined work as contract and causal labours for 7 hours per day and either for daily or weekly wage.
- Most of the construction workers have more 10 years of experience and work for more than 5 days per week.
- About 60% of the construction workers are migrate.
- Most of the construction workers in the off season switch over to other occupations like MGNREGP and agricultural activities.
- More than60% of the construction workers are satisfied with their occupation.

SUGGESTIONS

- Construction work is risk and dangerous occupation. The government should undertake safety measures to protect them.
- Women construction worker are exploited by the employers. Steps should be taken to avoid such exploitation.

CONCLUSION

The construction industry contributes a large share in the economy due to the growth of real estate and decline in production and productivity of agricultural sectors. In the present study, construction sector absorbs both men and women. Majority of them considered it is the main occupation for their livelihood. Even though, We say that construction activities involves risk and does not have any legal laws for protecting the construction workers, their wages is fixed and revised only by the trade union existing in that particular area for different activities in the construction work. So, economic conditions of the construction workers in the study area better off in terms of dwelling structure assets, durable items, income and saving .Thus, the study concludes that the construction workers standard of living has improved economically but they are not aware of the construction welfare schemes steps and worker union. So the government should take necessary steps to create awareness about union and welfare schemes.

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A STUDY ON THE SOCIO-ECONOMIC CONDITIONS OF WOMEN ENTREPRENEURS IN SRIRANGAM[45]

Dr. M. KALAISELVI[46]

INTRODUCTION

Women play a crucial role in a country as economic supporters to their families. The position of women and their status in any society is an index of its civilization. Entrepreneurship has been considered as the back bone of economic development and the contribution of women entrepreneurs to economic activity and employment has been increased over time. Women entrepreneurs have created a variety of new ventures and contributed to the development of a range of services and products, they are not only employed but are a reason for others employment by providing them with job. Women constitute almost fifty percent of the world population. The hidden entrepreneurial potentials of women have gradually been changing with the growing sensitivity to the role and economic status in the society. The socio economic participation of women at the international, regional, national and local levels means using significant potential resources more effectively. Women can benefit from available opportunities worldwide by increasing their empowerment. Entrepreneurship occupies an important place in the process of economic development. It has become a key concept in social and human development discourse, it is considered to be a factor of economic and human development.

In short, women entrepreneurs is one who starts business and manages it independently tackling all the risks, and face the challenges boldly with an iron will to succeed. Women entrepreneurship is an economic activity of those women who think of a business enterprise, initiate it, organize and combine the factors of production, operate the enterprise and undertake risks and handle economic uncertainty involved in running a business enterprise. So the present paper aims to study the socio-economic conditions of women entrepreneurs in Srirangam with the following objectives.

OBJECTIVES

- To study the socio economic status of the women entrepreneurs in the study area.
- To know the nature of business done by the women entrepreneurs.
- To find out the problems faced by the women entrepreneurs.

REVIEW OF LITERATURE

Vanita Yadav and Jeemol Unni (2016) in their article "Global entrepreneurship research and future direction" found that the women entrepreneurship have witnessed a rapid growth over the past 30 years. The objective of study is twofold, first is to examine the number of papers published on women entrepreneurship in 12 established entrepreneurship journals from 1900 to 2016. Methodologically, past research is dominated by the positivist paradigm and there is a need to embrace innovation methods to build explanations using a constructionist approach. Further studies are mostly restricted within national boundaries primarily being conducted in developed economics. Finally there is a need to build transnational networks and foster professional communities to enable the growth of the field.

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METHODOLOGY

The study of "socio-economic conditions of women entrepreneurs in Srirangam, Tiruchirappalli District" is based on both Primary data and Secondary data. Primary data have been collected from 50 women entrepreneurs with the help of structured questionnaire, personal interview method and secondary data from various books, journals, magazines, published articles and web portals and the collected data were analysed with simple percentage analysis.

AREA OF THE STUDY

The study area is Srirangam. Srirangam is an island situated in Tiruchirappalli district of Tamil Nadu and located between the banks of river Cauvery and Kollidam. It is famous for Sri Renganathar temple which is one of the 108 vaishnava temples and is called "Earthy heaven" (Boologa Vaikundam). The temple tower (Gopuram) is called Rajagopuram which is the tallest tower in Asia.

ANALYSIS AND INTERPRETATION OF DATA

This analysis, the study on the socio-economic condition of women entrepreneurs in Srirangam. The total sample size is 50 were chosen randomly from the stud area.

TABLE:1
SOCIO-ECONOMIC CONDITIONS OF THE WOMEN ENTREPRENEURS

CHARACTERISTICS	NO. OF RESPONDENTS	PERCENTAGE
AGE GROUP		
20-30	10	20
30-40	21	42
40-50	17	34
Above 50	2	4
Total	50	100
RELIGION		
Hindu	47	94
Chiristian	2	4
Muslim	1	2
Total	50	100
COMMUNITY		
BC	38	76
MBC	8	16
SC	4	8
Total	50	100
EDUCATION		
Primary	9	18
Secondary	23	46
Middle	12	24
Degree	6	12
Total	50	100
MARITAL STATUS		
Married	44	88
Unmarried	2	4
Widow	4	8
Total	50	100

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The table shows that 20% of the respondents belong to the age group of 20-30 years, 42% of the respondents belong to the age group of 30-40 years, 34% of the respondents belong to the age group of 40-50 years and 40% of the respondents belong to the age group of above 50 years.

This table shows that their working capacity is more in the age of 20-50 years. So, age is very important factor to determine their responsibility and business activity. 94% of the respondents belong to Hindu religion, 4% of the respondents are Christians and 2% of the respondents are Muslims this shows that majority of the respondents belong to Hindu religion the 76% of the respondents belong to backward community 16% of the respondents belong to most backward community and 8% of the respondents aer belonging to scheduled caste community. It shows that majority of the respondents belong to backward community there were more engaged in entrepreneurial activities. That 18% of the respondents studied up to Primary school level, 46% of the respondents studied up to Secondary school level, 24% of the respondents studied up to Middle school level, 12% of the respondents studied up degree course this table shows that majority of the respondents the reveals that nearly 88% of the women entrepreneurs are married normally the married people has more responsibility in the society as well as in their family. 4% of the respondents are unmarried and 8% of the respondents are widows. These widows become an entrepreneur in order to earn for their living and there is no support from the family and relatives.

NATURE OF BUSINESS DONE BY THE WOMEN ENTREPRENEURS

S. NO.	NATURE OF BUSINESS	NO. OF RESPONDENTS	PERCENTAGE
1	Tailoring	23	46
2	Bangle making	3	6
3	Saree business	3	6
4	petty shop	5	10
5	Pickle making, Pappadam, Snacks	6	12
6	Grosser shop	4	8
7	Auto driving	2	4
8	Flower shop	2	4
9	Beauty parlour	2	4
	Total	**50**	**100**

Source: Primary data

It shows that all the women entrepreneurs are doing different types of business activities, which result in development of society more or less equal percentage of the respondents are undertaking different business activities. Among them nearly 46% of the respondents are engaged in tailoring activities.

PROBLEMS FACED BY WOMEN ENTERPRENEURS

S. NO.	PROBLEMS	NO. OF RESPONDENTS	PRECENTAGE
1	Personal	10	20
2	Family	8	16
3	Social	2	4
4	Financial	30	60
	TOTAL	**50**	**100**

Source: Primary data

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It shows that 20% of the respondents have personal problems 16% of the respondents have family problems 4% of the respondents have social problems and 60% of the respondents have financial problems. From this it is clear that majority of the respondents suffer from Financial problems.

FINDINGS

- Majority of the respondents belong to the age group of 30-40.
- Majority of the respondents belong to Hindu religion.
- More than 88% of the respondents are married.
- More than76% of the respondents belongs to backward Community.
- Around 46% of the respondents have studied up to secondary level.
- Around 36% of the respondents earn Rs.10000-15000 per month.
- Half of the respondents' monthly expenditure ranges between Rs.6000-9000.
- Majority of the respondents repay the money through profit.

SUGGESTIONS

- Finance should be made available to women entrepreneurs at a reduced rate of interest the procedure and formalities of bank should be simplified and the required document should be minimized.
- Attending training programmes seminars workshops and conferences for the women entrepreneurs is very important. This will help to reduce the challenges they face in business.

CONCLUSION

Women entrepreneurship, no doubt play a vital and contribute to the growth of national economy. In present scenario due to modernization, urbanization, globalization and development of education, with increasing awareness, women are now seeking gainful participation in several fields .the entrepreneurship among women will help them in earning money and becoming economically independent. The growth and development of women entrepreneurs required to be accelerated because entrepreneurial development is not possible without the participation of women therefore a congenial environment is needed to be created to enable women to participate actively in the entrepreneurial activities. There is a need of government, non-government, promotional and regulatory agencies to come forward and play the supportive role in promoting the women entrepreneur in India.

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OCCUPATIONAL STRESS AMONG THE SCHOOL TEACHERS IN TIRUCHIRAPPALLI DISTRICT[47]

M. RADHIKA[48]

INTRODUTION

Education is the essence of every civilization. It is a mirror that reflects the values of the society. It shows light to the mankind to follow the right direction. The role and function of education has evolved over the ages in response to the changing needs to the society. It was the time when education was all about religion, welfare and art to the present era of super-specialization. It has come across many procedures to take its present form. The purpose of the education is not only to literate students but to add to his rationale thinking, self-sufficiency and knowledge ability. It aims at all round development of the individual. Education is one of the important factors, that enable human progress.

The whole nation is depending upon its teachers for producing future citizens. But on the other hand, teachers are suffered from high workload, poor working conditions, low salaries, job insecurity and lack of provision for professional development that have a negative impact on the calibre of teachers. All these factors not only reduce teachers' potential but also make them stressful. Occupational stress among teachers has become a matter of increasing concern at present globalization era. It is not only evidenced from the large body of studies on the subject but also through factor that Predispose educators to work related stress.

OCCUPATIONAL STRESS

Teaching is considered as one of the most stressful occupation in these days because the modern world is full of stress. Stress is a feeling of tension which is both emotional and physical. It can occur in specific situations. Occupational stress occurs when workers perceive an imbalance between their capability and resources to meet these demands. It is that which derives from conditions in the workplace. Occupational stress, in particular, is the inability to cope with the pressures in a job. It is a mental and physical condition which affects an individual's productivity, effectiveness, personal health and quality of work.

Occupational stress leads to occupational health problems and a significant cause of economic loss. Teacher stress is a specific type of occupational stress. Increasing consciousness for education due to increasing competitions among students for achieving their goals added more pressure and stress on teachers.

OBJECTIVES

- To study the socio-economic conditions of the teachers.
- To find out the causes for the occupational stress.
- To find out factors related with occupational stress.

Peer Reviewed Journal

[47] Paper presented in the **40th Annual Conference of Association of Economists of Tamil Nadu** Organized by Department of Economics, St. Joseph's College (Autonomous), Tiruchirappalli-620 002 on 2nd February, 2020.

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SIGNIFICANCE OF THE STUDY

The strength of an educational system largely depends upon the quality of its teachers. It is a teacher who helps to transform an individual into a person of imagination, wisdom, human love and enlightenment and institutions into lampposts of posterity and the country into a learning society.

A good teacher imbibes, interprets and disseminates the relevant items culture and traditions of the past; he creates new knowledge, promotes innovations, critically appraises the past and its traditions and cultures and strengthens social and economic fabrics of the country. In today's rapidly growing and dynamic environment, the role of teacher becoming more complex

METHODOLOGY

The present study is based on the both primary and secondary data. Primary data have been collected from 70 teachers of both government and private schools in Tiruchirappalli Districts and the secondary data have been collected from books, journals and articles.

SAMPLE SIZE

For this study, 70 respondents were selected from nine schools of both government middle school and private schools including nursery and primary and secondary school. 50% the teachers from eachschools were taken in to account of the selection of the sample for this study.

STATISTICAL TOOLS

The data have been processed and analysed with the help of the statistical tools like percentage, bar diagram, pie diagram and correlation coefficient.

STUDY AREA

The present study is carried out from three blocks of Tiruchirappalli District namely Trichy, Mannachanallur and Lalgudi.

REVIEW OF LITERATURE

Sing and Rani (2015) in their study in Haryana stated that stress reduces the teachers' efficiency and effectiveness due to mood disturbance, psychological distress, anxiety, lowered morale, cardiovascular disease and fatigue.

ANALYSIS AND INTERPRETATION OF DATA

Table No.1: Socio-Economic Conditions

CHARACTERISTICS	NO. OF THE RESPONDENTS	PERCENTAGE
Age group		
Below 30	21	30
30-40	29	41
40-50	14	20
Above 50	6	9
Total	70	100

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CHARACTERISTICS	NO. OF THE RESPONDENTS	PERCENTAGE
Religion		
Hindu	60	86
Christian	10	14
Total	70	100
Community		
OC	5	7
BC	49	70
MBC	11	16
SC	5	7
Total	70	100
Educational Qualification		
B.A/B.Sc/B.Com	37	53
M.A./M.Sc/M.Com	9	13
Degree with B.Ed. & M.Ed.	19	27
Degree with M.Phil.	5	7
Total	70	100
Causes		
Low salary	30	43
Job insecurity	14	20
Work load	26	37
Total	70	100

Source: Primary data

The table shows that age of the respondents at present and at the time of joining in the job. 30% of the respondents' age group is below 30 years, 41% respondents are in the age group of 30-40 years and 20% of the respondents belong to the age group of 40-50 years. Only 9% of the respondents are above 50 years old. And 86% of the respondents are Hindu and remaining 14% of the respondents are Christians. It is surprising that there is no one belongs to the Muslim religion in the sample. Regarding community wise classification majority of the respondents (70%) belong to the Backward Community and 16% of the respondents belong to the Most Backward Community category. Equal percentage of the respondents belongs to the scheduled Caste Community and other Community.

It is observed that 53% of the respondents are Undergraduates, 13% of the respondents are post graduates, 7% of the respondents are completed their M.Phil. and remaining 27% of the respondents are having degree with B.Ed. and M.Ed. And 43% of the respondents are receiving low salary and 20% of the respondents are facing job insecurity problem and remaining 37% of the respondent are not having any problem in their organizations. Almost all the teachers have the works like Exam duty, Invigilator duty, correction duty and school programmes etc.

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STRESS FACTORS

Stress is a feeling of tension which is both emotional and physical. It can occur in specific situations. Occupational stress occurs when workers perceive an imbalance between their capability and resources to meet these demands. It is that which derives from conditions in the workplace. The following are the stress factors responsible for causing stress among the teachers in the study area.

Table No. 2: Factors influencing Stress

Stress factors	Private School		Government School	
	Affected	Unaffected	Affected	Unaffected
Cent Percent Result	15	7	36	12
No.of PTA meeting	11	11	13	35
Admission duty	10	12	39	9
Election duty	-	22	22	26
Students control	13	9	35	13
Slow learners	16	6	40	8
Students co- operation	7	15	31	17
Introduction of new syllabus	20	2	30	18
Correction of paper	19	3	45	3
Celebration of school functions	14	8	37	11
Supervision	17	5	33	15
Inspection	5	17	20	28

Source: Primary data

This table shows that the various stress factors of teachers which are affected extensively. Government school teachers are stressed more due to election duty, admission duty, control of the student, slow learners. Whereas private school teachers are suddenly stressed due to the celebration of school functions, invigilation, paper correction. Both the teachers are stressed due to poor and slow learners, changes in the syllabus and students control.

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Table No.3: Symptoms of Occupational Stress

Symptoms of Occupational Stress	No. of respondents	Percentage
Fatigue	10	14
Irritability	13	19
Anxiety	7	10
Headache	20	19
Loss of confidence	10	14
Feeling of boredom	5	7
Difficulty in concentration	5	7
Total	70	100

Source: Primary data

Explain that symptoms of occupational stress of the respondents in the study area. All the respondents are affected due to high work load, poor working conditions, low salaries, job insecurity and lack of provision for professional development that have a negative impact on the calibre of teachers. All these factors not only reduce teachers' potential but also make them stressful. When this stress approaches the extreme, it makes teachers less adjusted and de-motivated to do work.

SUGGESTIONS

- Orientation programmes should be conducted for younger and inexperienced teachers so that they can familiarize themselves with their work easily.
- Steps should be taken to increase the numbers of teachers to meet the teachers-class-ratio so as to reduce the work load of the teachers.
- Pre plan of work is very essential for proper execution of the task which avoids tension.

CONCLUSION

There is no denying the fact that human resource is the best resource among all the available resource of the world. It is the man who exploits all other resources and it is the school teacher who makes the best resource of a human being. At present the teachers both at government, government aided and private schools were depresses due to heavy workload, in secures job, social and occupational hazards, etc. and is leading a low profile life, creates full of stress and strain. If it is continues we may lose the future pillars (students) of the country. So, steps must be taken by the government to have a peaceful environment work spot for the teachers which enable them to work hard and help to strengthen the future pillars.

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Peer Reviewed Journal

A STUDY ON SOCIO-ECONOMIC CONDITIONS OF WOMEN TAILORS IN AYYAMPALAYAM VILLAGE-TIRUCHIRAPALLI – DISTRICT[49]

P. SUNDARI[50] & A. PAVITHRA[51]

INTRODUCTION

Tailoring is an important aspect of fashion designing course. https://designersinstitute.in/ which emphasizes more on the style or cut of the garment and then sewn as per the fitting and body measurements. It can mean a whole new wardrobe for women who feel like they never have the right fit. It is the process of making adjustments, by or small, to a piece of clothing in order to give the clothing the best fit. It is because tailoring possesses some part of Fashion Designing, where Fashion Designing is a broader and higher level of understanding of fabrics, pattern and fit as per the size. Though tailors can never be compared to that of a fashion designer or a tailoring course to that of a fashion designing degree, but tailoring is included in fashion designing because of its important topics covered like- understanding body shape, its measurements and fit. The keywords that possess similarity between the two or make them gel together could be- clothing, fit, measurement, size chart, pattern, draping, cutting, fashion design etc, Keeping in this view a micro level attempt has been made in the study area.

OBJECTIVES

- To study about the socio economic conditions of women tailors in Ayyampalayam Village.
- To find the problems faced by the women tailors.

REVIEW OF LITERATURE

Thomas and Padmakumar (2013) in their article of, "Entrepreneurship in India", he found that a large number of individuals attending entrepreneurship development programmes at present are not genuinely interested in becoming industrialists. To inculcate entrepreneurial talents, to identify real potential individuals and to impart entrepreneurship development training through EDPs and to stimulate them to start new enterprises a definite shift in the emphasis and approach should be initiated.

METHODOLOGY

The present study is based on both primary data and secondary data. Primary data were collected through direct personal interview method with the help of structured questionnaire. Secondary data were collected from records of corporation office, statistical department, magazines, journals, books and website.

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SIZE OF SAMPLE

In order to study the socio-economic conditions of women tailors, 50 samples were selected through random sampling method. The Ayyampalayam village has Total population of 6,627 of which 3,297 are males and 3,330 are females as per population Census 2011.

AREA OF THE STUDY

There are more than 40 villages located in Mannachannallur Taluk. Ayyampalayam is a one of the largest village located in Mannachanallur Taluk. It is located from North of Mannachanallur, South of Thaluthalapatti, East of Thiruvallarai and West of Samayapuram. The area of the present study is Ayyampallayam village which comes under the Manachanallur, Tk of Tiruchirappalli district. It is 15 Km away from Chathiram bus stand. Ayyampallayam village consist of 5 sub villages namely, Arasamaram, North Salakkadu, South Salakkadu, Dhoppupallam, Murugan Kovil Stop.

ANALYSIS AND INTERPRETATION OF DATA

Analysis of sample survey on women tailors in Ayyampalayam village. The questionnaire method is followed to collect information relating to women tailors. The collected data were carefully classified, tabulated and analyzed. The interpretations of the tables are presented in order to draw meaningful inferences on socioeconomic conditions of the respondents.

TABLE NO.1
SOCIO ECONOMIC CONDITIONS OF THE RESPONDENTS

Characteristics	No. of Respondents	Percentage
Age Group		
Below-25	14	28
25-30	8	16
30-35	12	24
35-40	9	18
40-45	5	10
Above-45	2	4
Total	50	100
Religion		
Hindu	49	98
Muslim	1	2
Total	50	100
Community		
BC	25	50
MBC	25	50
Total	50	100
Educational status		
Literate	42	84
Illiterate	8	16
Total	50	100

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Characteristics	No. of Respondents	Percentage
Qualification		
Primary	20	40
Higher Secondary	11	22
Degree	11	22
Illiterate	8	16
Total	50	100
Marital status		
Married	44	88
Unmarried	6	12
Total	50	100
Family Type		
Joint family	8	16
Nuclear	42	84
Total	50	100
Family Members		
Below-6	49	98
Above-6	1	2
Total	50	100
Types of House		
Pucca	27	54
Semi-Pucca	21	42
Kutcha	2	4
Total	50	100
Nature of House		
Own	40	80
Rent	10	20
Total	50	100

Source: Primary Data

Table No.1 reveals that

- Majority of the respondents (90%) age group is below 45.
- It is shows that nearly 98 % of the respondents belong to Hindu religion and only 2% of the respondents belong to Muslim religion.
- In the sample size 50% of the respondents belong to backward community and another 50% of the respondents belongs to most backward community.
- The above table shows that majority of the respondents are literate and only 16% of the respondents are illiterate, literates are doing tailoring job as the main occupation after completing their Higher studies.
- 40% of the respondents have qualified in primary education and 26% of the respondents have qualified Higher Secondary education. Only 26% of the respondents are qualified in degree.
- Both married and unmarried responds are doing tailoring as a full time job.

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- 84% of the respondents live in nuclear family. In modern days people likes only nuclear family setup.
- 98% of the respondents family members is below 6. Only 2% of the family members size is above 6.
- 54% of the respondents have Pucca house and 42% of the respondents have semi-pucca house. Only 4% of the respondents have kutcha house. The respondents are doing their tailoring work at their house dose not have sufficient place. Because they felt type of house dose not matter, efficient job is very important to uplift their status in the economy.
- 80% of the respondents have their own dwellings and 20 % of them only are living in rental houses.

Table No. 2
WORKING CONDITIONS OF THE RESPONDENTS

Characteristics	No of respondents	Percentage
Nature of Working place		
House	44	88
Shop	6	12
Total	**50**	**100**
No. of Working Days		
100-150	26	52
150-200	13	26
200-250	10	20
250-300	1	2
Total	**50**	**100**
Working Time in hours		
Below-3	39	78
6-9	9	18
Above-9	2	4
Total	**50**	**100**
Pattern of Salary		
Daily	18	36
Monthly	32	64
Total	**50**	**100**
Working Type		
Regular	14	28
Contract	32	64
Both R&C	4	8
Total	**50**	**100**

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Characteristics	No of respondents	Percentage
Income (in Rs.)		
Below-2500	29	58
2500-3000	3	6
3000-3500	12	24
3500-4000	1	2
Above-4500	5	10
Total	**50**	**100**
Expenditure (in Rs.)		
Below-3000	12	24
3000-4000	18	36
4000-5000	12	24
Above-5000	8	16
Total	**50**	**100**
Borrowing (in Rs.)		
Below-3000	14	28
4000-4500	11	22
Above-4500	25	50
Total	**50**	**100**

Source: Primary Data

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Table 2 reveals that:

- 88% of the respondents are working in their home.
- Nearly 52% of the respondents are working more than 100 days per year, 26% of the respondents are working 150 to 200 days & 20% of the respondents are working 200 to 250 days per year. Only 2% of the respondents working more than 250 days because they are contract tailors.
- Majority of the respondents (78%) are working 1-3 hours per day. Only 22% of the respondents are working more than-6 hours per day, because they are doing work on contract basis. So they wants to complete their work stipulated time period.
- 64% of the respondents are working as monthly salary basis because they are contract tailors. Only 36% of the respondents earn salary on daily basis according to their ability to do work.
- 64% of the respondents are doing their work on contract basis i.e. stitching the government school uniforms. 28% of the respondents are doing tailoring work on regular basis, because they are stitching the women dresses, like chudithar, blouse. Only 8% of the respondents doing tailoring work on both contract & regular basis.
- 64% of the respondents are earn more than Rs.2500, by doing their tailoring job. Only 36% of the respondents earn above Rs.3500 by working overtime on festival period.
- 30% of respondents spend their money below-Rs.500 for purchasing raw material like thread, hocks, embroiding design. 20% of the respondents spend money between

Rs.500-Rs.1000 & 24% of the respondents spend money between Rs.1000-Rs.1500. Only 16% of the respondents spend money for above Rs.1500.

- 60% of the respondents are spend money Rs. Below - Rs.3000 to Rs.4000 for their consumption purpose. Only 40% of the respondents are incurred expenditure Rs.4000 to above Rs.5000.
- 28% of the respondents borrow money below Rs.3000, 22% of the respondents borrow money between Rs.4000-Rs.4500. Majority of the respondents borrow money above Rs.4500 for their tailoring work.

Table No.3
Problems faced by the Respondents

Problems	No. of Respondents	Percentage
Headache	13	26
Leg Pain	10	20
Stress	6	12
Back pain	11	22
Stomach Pain	10	20
Total	**50**	**100**

Source: Primary Data

Table 3 reveals that

- 26% of the respondents suffer headache problem.
- Nearly 20% of the respondents suffer leg pain,
- 20% of the respondents suffer stomach pain.
- 22% of the respondents are suffer back pain, and only 12% of the respondents suffer to much of stress.

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Suggestions

1. Through SHG, Non-Governmental Agencies can motivate the Women to Utilize various financial schemes &Programmes started by the Government.
2. By conducting Training Programme in Rural Areas, efficiency of the women tailors can be increased & modern techniques also used.

Conclusion

It is concluded that the socio-economic conditions of Women Tailors are substantially poor, because they are not aware of the Programmes implemented & Financial Assistance provided by Central as well as state Government for the upliftment of the Women Tailors. Now women are employed in large number and are also taking part in decision-making in recent years.

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A STUDY ON EDUCATIONAL STATUS OF MUSLIM GIRLS IN MELACHNITHAMANI – TIRUCHIRAPPALLI TOWN[52]

R. SRIDEVI KARUMARI[53]

INTRODUCTION

"It is through education that the daughter of a peasant can become a doctor that the son of a mineworker can become the head of the mine and a child of farm workers can become the president of a great nation. It is what we make out of what we have, not what we are given, that separates one person from another." - **Nelson Mandela.**

Education is the single most important tool for social and economic transformation. Modern studies suggest that female education is more important than male education for social and economic development. "Education is the great engine of personal development.

EDUCATIONAL STATUS OF INDIAN WOMEN

The female literacy rate in India is less than the male literacy rate. Fewer girls than boys are enrolled in school, and many girls drop out. In urban India, girls are nearly on a par with boys in terms of education. However, in rural India, girls continue to be less educated than boys.

NEED AND IMPORTANCE OF THE STUDY

Muslim women education was vulnerable in India. Since Independence the dropout rate among the Muslim girls was high but in recent years the situation has improved. According to 2011 census the illiteracy rate of Muslim women was 48.1 percentages which has decreased from 50.1 percentages in 2001 census. Therefore the researcher in the above study is interested to study the educational status of Muslim girls in Melachinthamani area of Tiruchirappalli town. In the above study the researcher has analyzed the socioeconomic conditions and the major factors influencing their educational status.

OBJECTIVES

1. To study the socio-economic condition of the Muslim girls in Melachinthamani.
2. To assess the educational status of the Muslim girls in Melachinthamani.

METHODOLOGY

The study is based on both primary and secondary data. Primary data has been collected through direct questionnaire from the 50 respondents from the area of Melachinthamani. The secondary data has been collected from books, theses, journals, magazines and research websites.

SAMPLING

Tiruchirappalli town is divided into many areas such as East Chinthamani, North Chinthamani, Sanjeevi Nagar, Teppakulam, Singarathopu, Chathiram and Pallakarai. Most of the Muslim population are settled in Pallakarai and Killa Chinthamani areas. Therefore the researcher has selected the North Chinthamani area for the above study. Killa Chinthamani

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also called as North Chinthamani has a population of 51,200 of which 23,200 are males and 27,000 are females as per population census 2011. The Muslim population in Killa Chinthamani is around 21,000 of which the female Muslim population is around 12,501 and male Muslim population is around 8,499. Random sampling method has been applied in order to select the 50 respondents from Killa Chinthamani area for the study.

PERIOD OF THE STUDY

The present study covers the period of 12 months that is from (2018-2019).

TOOLS

Simple statistical methods such as Tabulation, Pie – Chart and Bar diagram were used in order to describe data.

ANALYSIS AND INTERPRETATION

The aim of the present study is to analyze the Educational and Socio -economic status of Muslim Girls.

Table No: 1 Socio-Economic profile of the Respondents

Characteristics	No. of the Respondents	Percentage
Age group		
Below 18	9	18
18-21	19	38
Above21	22	44
Total	50	100
Marital status		
Married	11	22
Unmarried	39	78
Total	50	100
Type of family		
Nuclear	38	76
Joint	12	24
Total	50	100
Educational Qualification		
Secondary	9	21
Higher Secondary	10	24
Graduate	23	55
Total	50	100
Degree		
B.A	6	26
B.Sc.	10	43
B.Com.	5	22
Others	2	9
Total	23	100

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Characteristics	No. of the Respondents	Percentage
Technical Qualification		
Typewriting	9	34
Computer	58	58
Others	8	8
Total	50	100
Family income		
Below 10,000	13	26
10,000-20,000	19	38
20,000-40,000	13	26
Above 40,000	5	10
Total	**50**	**100**

The above table: 1 shows the various social characteristics of the respondents. From the table it is inferred that the highest 38 percentage of the respondents belong to the age group of 18-21 years and most of them are under graduate and college going students. 22 percentage of the respondents are married and 78 percentage of the respondents are unmarried. 24 percentage of the respondents belong to a joint family system while 76 percentage of the respondents are part of a nuclear family setup.

Table also reveals the qualification level of the respondents. From the table it is clearly revealed the only 21 percentage of the respondents have secondary education upto 9^{th} standard,24 percentage of the respondents have higher secondary education upto 12^{th} standard and the highest 55 percentage of the respondents are graduates .From the analysis it is clearly revealed that 43 percentage of the respondents have B.Sc. as their degree and 26 percentage of the respondents have B.A as their degree and 22 percentage of the respondents have B.com as their degree and only 9 percentage of the respondents have other courses such as diploma, hotel management as their qualification level. 38 percentage of the respondents family income level is between 10,000-20,000 rupees. 26 percentage of the respondents income level is between 20,000-40,000 rupees and also same percentage of the respondents income level is below 10,000 rupees.

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TABLE 2: MOTIVATIONAL FACTORS FOR EDUCATION OF THE RESPONDENTS

S. No.	Motivational Factors	No. of. Respondents	Percentage
1	Support from family	22	52
2	Teachers encouragement	4	10
3	Future job and career advancement	6	14
4	To change the financial situation of the family	4	10
5	Improve their standard of living	1	2
6	Gaining knowledge	5	12
Total		**42**	**100**

Source: Primary Data

The above Table: 2 reveal the motivational factors for education of the respondents. It is inferred that among 50 respondents, only 42 respondents are motivated for their education. Among 42 respondents, 52 percentage of the respondents are motivated by support from their family, 14 percentage are motivated for future job and career advancement, 12 percentage are motivated to gain knowledge, 10 percentage are motivated by teachers encouragement and only 2 percentage are motivated to improve their standard of living. This analysis shows that 52 percentage of the respondents have got education due to their family support and 14 percentage of the respondents get education for their future job and career advancement.

CONCLUSION

Education is the only mechanism that enhances the process of social, economic, and cultural development of communities. Among all the religious communities, Muslims are in the least educated section of Indian Society. The backwardness among Muslims in comparison with non- Muslims in India have become a matter of concern at present. There are several reasons for backwardness of Muslims in India such as large family size, lack of link between Madarsa education and modern education, economic poverty, negative attitude towards girl's education etc. From the study it is concluded that the trend of attitude and religious belief of Muslim family has been changed which is clearly analysed in the above study. In the above study 84 percentage of the Muslim girls are educated and they get full support from their family members. They also give more importance Arabic education rather than Academic education. Hence it is concluded from the above study that in Melachinthamani area of Tirchirappalli town there more number of Muslim population of which most of the girls are educated and they are graduates. But even though few women Muslim population is illiterate. Thus there is need to change the vision of Muslims from traditional to modern education. Therefore it is the need of the hour,that Government should move on and do something for development of Muslims girls.

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A STUDY ON SOCIO ECONOMIC CONDITIONS OF MGNREGA WORKERS IN VENGUR VILLAGE, TIRUCHIRAPPALLI DISTRICT[54]

P. SAILAJA[55]

INTRODUCTION

Rural development is a continuous and comprehensive socio-economic process aimed at improving all aspect of rural life. In order to make rural development a more broad based and balanced, major areas of concern have to be addressed. Rural infrastructure, technology and appropriate rural institutions are to be developed to ensure and sustain rural development. To accelerate the reduction of poverty and increase in employment, a number of poverty alleviation measures like employment generation schemes and basic services programmes are being strategically implemented.

Mahatma Gandhi Nation Rural Employment Guarantee Act [MGNREGA] is a job guarantee scheme for rural India. It was enacted by legislation on 25 August 2005. The scheme provides a legal guarantee for at least 100 days of paid employment in every financial year to adult members of any household willing to do unskilled manual work related to public works.

COVERAGE OF MGNREGA

The Mahatma Gandhi National Rural Employment Guarantee Act [MGNREGA] is a flagship programme of the Government of India. The Act was notified initially in 200 most backward districts of the country with effect from February 02, 2006 and subsequently extended all over India in two phases. The programme aims at enhancing livelihood security of the rural poor household by providing at least minimum 100 days of guaranteed wage employment in financial years.

SALIENT FEATURES OF MGNREGA

The salient features of MGNREGA are as follows:

- Decentralized planning
- Employment and wage payment
- Women employment
- Transparency and Accountability
- Reducing urban migration.

OBJECTIVES OF THE STUDY

- To study the socio economic Conditions of MGNREGA workers in vengur village.
- To find the relationship between family Income and expenditure of the MGNREGA workers.
- To identify the health problems of MGNREGA Workers.

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REVIEW OF LITERATURE

V. Rajalakshmi (2018) discussed the awareness level of MGNREGA beneficiaries in Vellore District of Tamilnadu during 2015-2016. The main objective of the study was to identify the awareness level of MGNREGA beneficiaries in Vellore District of Tamilnadu. One way ANOVA was used to impact of awareness level of beneficiaries in Vellore District. The MGNREGA beneficiaries had less awareness about the program in Vellore District. This study concluded that MGNREGA greater impact in Vellore District.

SCOPE OF THE PRESENT STUDY

Rural economy is the backbone of Indian Economy where the potential market lies. A sustainable economy requires a strong rural base. The government of India in its five year plan has initiated number of rural development programmes. These programmes ensured fuller opportunities for work and better living to all sections of the rural community and in particular to assist agriculture labourers. But the phenomena of underdevelopment and surplus population simultaneously manifested in the daily lives and living of the rural labourers. These labourers are likely to be worst hit, through adverse impact on wage and employment opportunities. So the present study analyses rural unemployment generation programme MGNREGA in vengur village panchayat of Tiruchirappalli District.

METHODOLOGY

Methodology plays a significant role in the research process. In order to arrive at a reliable as well as acceptable finding of a study it is essential to select the sample methodically to make it representative, construct reliable tools, Analyze the data collected systematically and draw conclusions carefully with reference to the objectives of the study. The research adopts the methodology on the basis of the type research study she engaged with. It does not only help the research to formulate the research question but also guides to adopt scientific methodology to answer the research concern she is investigating. This research is purely based on quantitative methodology. This chapter discusses location of study, sampling procedures, tools of data collection, major evaluation indicators, research design and fieldwork experience etc.

STATISTICAL TOOLS

The primary data was analyzed using statistical tools like Percentage, Pie Diagram, Bar Diagram, Karl Pearson's coefficient of correlation test.

Socio-Economic conditions of the MGNREGA workers

This study highlights the select socio-economic conditions of MGNREGA workers in Vengur village. The total sample size is 50 chosen randomly from the study area.

The study has presented the select socio economic indicators of the MGNMGNREGA programme in Vengur Village.

Table No: 1

Socio-Economic condition of the MGNREGA workers

Characteristics	No. of Respondents	Percentage
Age Group		
Below 30 years	3	6
30-50	28	56
50-70	19	38
Total	50	100

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Characteristics	No. of Respondents	Percentage
Sex		
Male	6	12
Female	44	88
Total	50	100
Community		
BC	42	84
MBC	2	4
SC	6	12
Total	50	100
Household Income		
1000-20000	36	72
20000-40000	6	12
40000-60000	8	16
Total	50	100
Household Expenditure		
3000-9000	24	48
9000-15000	18	26
15000-21000	7	14
Above 21000	1	2
Total	50	100

Source: Primary data

Age of the respondents is classified into four categories. The analysis found the three respondents are in the age category of less than 30 years and 28 respondents constituting 56 percent belong to the age group of 30-50. 19 respondents accounting about 38 percent belong to the age group of 50-70. It is inferred that majority of the respondents belong to the age group of 30-50 years, of which nearly half of them are middle aged and the other half of them belong to the post-menopause age group (50-70 years).It is seen that 88 percent of the respondents belong to female and only 12 percent of the respondents are male workers. It means that sample respondents are mostly females implying that MGNREGA workers are, by and large, rural women. The reveals that 12 percent of the rural women workers are from scheduled caste community. 84 percent belongs to backward community and remaining 4 percent belongs to most backward community. It is observed that majority of rural MGNREGA workers are from backward caste community. The range of Rs.1000-Rs.20000 per month and another 12 percent of respondents earn in the range of Rs.20000-Rs.40000 per month while 16 percent reports in the range of Rs.40000-Rs.60000 per month. It is observed that majority of the respondents have reported to have their household income less then Rs.20000 per month due to the contribution of other family members to household income but the lower household income may be the income of the women headed household. The reveals that 48 percent of the respondents reported to have household expenditures between Rs.3000-9000 per month.26 percent of the respondents have reported household expenditure in the range Rs.9000-15000 per month and 14 percent of the respondents have expenditure in the range Rs.15000-21000 per month. It is found that one of every tow respondents have reported to have their household income less then Rs.9000 per month.

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Table No: 2
Health Problems of the Respondents

Health Problem	No of respondents	Percentage
Leg pain	1	2
Blood pressure	4	8
Dust allergy	3	6
Back pain	2	4
No problems	40	80
Total	50	100

Source: Primary data

Table 2 shows that 2 percent of the respondents have reported leg pain and 8 percent of the respondents have blood pressure and 6 percent of the respondents have dust allergy while 4 percent of the respondents have back pain and other 80 percent of the respondents have not reported any health problems. It is found that most of women workers have reported health problems relating to aging.

SUGGESTIONS

- Government may take steps to improve the working conditions of the MGNREGA workers.
- Government may take steps to increase income of the MGNREGA workers.

CONCLUSION

The study has revealed socio- economic conditions of the women regularly working under the MGNREGA scheme in the rural area. They are really needy people. This study has concluded that the scheme does not improve the expected level of socio economic conditions of rural women. Through increasing number of working days and wages, rural workers may possibly improve their income level. To fasten the rate of improvement in rural women life, some development initiative can be integrated with the scheme mainly targeting rural workers who are working regularly under the scheme for long periods. A multiple schemes and multi agency approach could be integrated with MGNREGA scheme so as to give more number of days of employment with a hike in wage rate keeping in view with rising prices of essential goods as the strategy for the overall development of socio economic conditions of rural workers and mainly women workers.

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DOMESTIC AND FOREIGN TOURISTS ARRIVALS WITH SPECIAL REFERENCE TO TIRUCHIRAPPALLI DISTRICT OF TAMIL NADU[56]

B. SIBY[57] & Dr. N. PRASANNA[58]

Introduction

Tourism encourages the people moves from one place to another. According to WTO has defined a tourist as a temporary visitor staying at least 24 hours in a country. Tourism enhances the heritage sites, theme parks, beaches, preservation of monuments and eco-sanctuaries. In global economic level, tourism is one of the largest and fast growing Industries. It acts as an instrument for achieving national integration, international understanding and gives a benefit to improve the socio-economic development. As per the data, the foreign tourist arrivals in 2017 was 26.89 million and compared to the year of 2016 is 24.71 million. Regarding e-Tourist visa, total number of tourist arrived in the year of 2019 is 11,08,665 as compared to the year of 2018 is around 9,18,792. In Tamil Nadu, total number of foreign tourist's arrivals in the year of 2017 is 48,60,455 and in the year of 2016 is 47,21,978.In the year of 2015, financial performance of tourism turnover requires Rs.105cr and the net profit is 3.91 crores. Tourism describes in the form of increase in the development of Revenue, Foreign exchange earnings, Infrastructural Development, Transportation Facilities, Employment Generation, Quality of Environment in form of both natural and man-made these are all considered in form of socio-economic benefits. In the year of 2016, Chennai, Coimbatore, Madurai, Tiruchirappalli and Thanjavurthese are some districts are high in the domestic tourist arrivals in Tamil Nadu. Regarding foreign tourist arrivals, Chennai, Kanchipuram, Thanjavur, Madurai, Rameswaram, Kanyakumari, Tiruchirappalli these are some districts are very high in foreign tourist arrivals in Tamil Nadu. Chennai (34,315), Coimbatore (3185), Erode (1315), Kanchipuram (1552), Madurai (1931), Nagapattinam (1666), Tiruchirappalli (2559), Tiruppur (1063) and Vellore (6760), districts has very high total number of rooms of accommodation units in Tamil Nadu.

Statement of the Problem

Most of the tourists People have the transportation constraints, inaccessible accommodation, inadequate customer services and lack of infrastructure facilities. It is generally affects the growth of tourism especially like foreign tourist arrivals. It can also cause in the form of socio-economic, cultural and environmental hazards like pollution and the loss of natural habitats. If it is not maintaining in a proper way, it will create a problem for both domestic and foreign tourist. Tourists are facing the barriers in all these areas like transportation for shifting from one place to another also having the problem of communicating and obtaining information with other people. In the year of 2023, the estimated average level of foreign tourist arrivals will increase to 41,000 and the state is expected to attract 1.3 million domestic tourists (Vision Tamil Nadu 2023). Regarding the level of accommodation it is estimated around 30,000 additional rooms are required for every additional million tourists. Tamil Nadu

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tourism has experienced some major changes and also a change of quality in both the domestic and international level so there has been a growing concern in Tamil Nadu over the need for bringing about a change in the tourism.

Objectives

1. To analyze the domestic tourist arrivals scenario in Tiruchirappalli district of Tamil Nadu.
2. To analyze the foreign tourist arrivals scenario in Tiruchirappalli district of Tamil Nadu.

Methodology

The present study is entitled, "Domestic and Foreign tourist arrivals in Tiruchirappalli district of Tamil Nadu". All the necessary information has been collected from various sources of government from Tamil Nadu tourism, India tourism statistics, Ministry of Tourism, and Policy note of Tourism. Books related to Tourism Economics, An Introduction to Tourism, Tourism and Hospitality studies and Tourism Planning and Development. The present study describes in the form of both domestic and foreign tourist arrivals and also making this analysis by using of percentage method. This study is based on secondary data during the period of 2011-2017.

Analysis and Interpretations

1.1 Total Number of Domestic Tourist Visits inTiruchirappalli District of Tamil Nadu and Percentage share of Tiruchirappalli of Tamil Nadu during the period of 2011 -2017

Year	District	Domestic Tourist Visits		
		Number (Tiruchirappalli)	Number (Tamil Nadu)	Percentage Share (%)
2011	Tiruchirappalli	60,85,725	13,75,12,991	4.43
2012	Tiruchirappalli	33,09,706	18,41,36,840	1.80
2013	Tiruchirappalli	89,91,752	24,42,32,487	3.68
2014	Tiruchirappalli	70,48,669	32,75,55,233	2.15
2015	Tiruchirappalli	68,88,776	33,34,59,047	2.07
2016	Tiruchirappalli	74,88,989	34,38,12,413	2.18
2017	Tiruchirappalli	77,64,485	34,50,61,140	2.25
Source: Executive Summary – Tourism Survey of Tamil Nadu				

The above Table 1.1 represents the position of Tiruchirappalli district in terms of number of domestic tourist's arrivals along with the total number of Tamil Nadu as well their percentage share. The number of domestic tourist's arrivals in the year 2011 was 60,85,725 and it increased to 89,91,752 in the year 2013 and fell to 68,88,776 in 2015. Then there has been increase in the number of domestic tourist's arrivals with 74,88,989 in 2016 and 77,64,485 in 2017.For Tamil Nadu, the total domestic tourist's arrivals was 13,75,12,991 in 2011 and it increased to 34,50,61,140 in the year 2017 which is a considerable growth. The percentage share of Tiruchirappalli in total domestic tourist's arrivals in Tamil Nadu was 4.43 per cent in 2011 and it reduced to 1.80 per cent in 2012. Then during the years 2014 to 2017 the percentage share of Tiruchirappalli district in total domestic tourist's arrivals in Tamil Nadu was around 2 per cent.

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1.2 Total Number of Foreign Tourist Visits in Tiruchirappalli District of Tamil Nadu and Percentage share of Tiruchirappalli of Tamil Nadu during the period of 2011 -2017

Year	District	Foreign Tourist Visits		
		Number (Tiruchirappalli)	Number (Tamil Nadu)	Percentage Share (%)
2011	Tiruchirappalli	2,39,017	33,73,870	7.08
2012	Tiruchirappalli	1,97,237	35,61,740	5.54
2013	Tiruchirappalli	2,80,382	39,90,490	7.03
2014	Tiruchirappalli	87,941	46,57,630	1.89
2015	Tiruchirappalli	97,998	46,84,707	2.09
2016	Tiruchirappalli	1,10,030	47,21,978	2.33
2017	Tiruchirappalli	2,22,775	48,60,455	4.58
Source: Executive Summary – Tourism Survey of Tamil Nadu				

The above Table 1.2 represents the position of Tiruchirappalli district in terms of number of foreign tourist's arrival and their percentage share in total Tamil Nadu. The number of tourists arrivals from foreign countries in the year 2011 was 33,73,870 in Tamil Nadu and 2,39,017 in Tiruchirappalli which was 7.08 per cent of foreign tourist's arrival in Tamil Nadu. While there has been steady increase in the number of foreign tourist's arrival in Tamil Nadu during the study period, there is fluctuation in the foreign tourist's arrival in Tiruchirappalli. It reduced to 87,941 and 97,998 in 2014 and 2015 with 1.89 per cent and 2.09 per cent of share respectively. However in the year 2017the foreign tourist's arrival increased to 2,22,775 in Tiruchirappalli which was 4.58 per cent of total foreign tourist's arrival in Tamil Nadu that year.

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1.3 Ranking of the Number of Domestic Tourist Visits in Tamil Nadu and Percentage share of Tamil Nadu during the period of 2011-2017

Year	Rank	State	Number of Domestic Tourist Visits	Number of Foreign Tourist Visits	Total visits	Percentage Share of Domestic Tourist Visits (%)
2011	3	Tamil Nadu	13,75,12,991	33,73,870	14,08,86,861	97.60526285
2012	2	Tamil Nadu	18,41,36,840	35,61,740	18,76,98,580	98.10241505
2013	1	Tamil Nadu	24,42,32,487	39,90,490	24,82,22,977	98.39237687
2014	1	Tamil Nadu	32,75,55,233	46,57,630	33,22,12,863	98.5979983
2015	1	Tamil Nadu	33,34,59,047	46,84,707	33,81,43,754	98.61458124
2016	1	Tamil Nadu	34,38,12,413	47,21,978	34,85,34,391	98.64519022
2017	1	Tamil Nadu	34,50,61,140	48,60,455	34,99,21,595	98.61098741
Source: State/UT Tourism Departments						

The above Table 1.1 represents the position of Tamil Nadu in terms of number and ranking of domestic tourist's arrivals and their percentage share in Tamil Nadu. The number of domestic tourist's arrivals in 2011 was 13,75,12,991 in Tamil Nadu and also stated in the year of 2017 is 34,50,61,140.There has been a steady increase in the domestic tourist's arrivals of Tamil Nadu during the period of 2011 to 2017. During the period of 2011, ranking of Tamil Nadu was in 3rd place and 2nd in 2012 and in 2017 it held 1st place. The percentage share of Domestic Tourists arrivals was 97 per cent in 2011. Then during the year of 2011-2017 percentage shares of domestic tourist arrivals was around 98 Per cent.

1.4 Ranking of the Number of Foreign Tourist Visits in Tamil Nadu and Percentage share of Tamil Nadu during the period of 2011 -2017

Year	Rank	State	Number of Foreign Tourist Visits	Number of Domestic Tourist Visits	Total visits	Percentage Share of Foreign Tourist Visits (%)
2011	2	Tamil Nadu	33,73,870	13,75,12,991	14,08,86,861	2.39473715
2012	2	Tamil Nadu	35,61,740	18,41,36,840	18,76,98,580	1.897584947
2013	2	Tamil Nadu	39,90,490	24,42,32,487	24,82,22,977	1.607623133
2014	1	Tamil Nadu	46,57,630	32,75,55,233	33,22,12,863	1.402001704
2015	1	Tamil Nadu	46,84,707	33,34,59,047	33,81,43,754	1.385418759
2016	1	Tamil Nadu	47,21,978	34,38,12,413	34,85,34,391	1.354809775
2017	1	Tamil Nadu	48,60,455	34,50,61,140	34,99,21,595	1.389012587
Source: State/UT Tourism Departments						

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The above Table 1.2 shows the number of foreign tourist's visits in Tamil Nadu and ranking of foreign tourist's arrivals and their percentage share in Tamil Nadu. The number of foreign tourist's arrivals in 2011 was 33,73,870 which increased to 48,60,455 in the year of 2017. During the period of 2011, 2012 ranking of Tamil Nadu was in 2nd place and in 2014 and 2017 it held 1st place. The percentage level of foreign tourist's arrivals was 2 per cent in 2011 and it has a steady and fixed per cent of around 1 per cent.

1.5 District Wise Details of Total Number of Accommodation Units in Tamil Nadu

District	Total Accommodation Units	Total Rooms
Ariyalur	18	192
Chennai	896	34,415
Coimbatore	161	3,185
Cuddalore	30	364

District	Total Accommodation Units	Total Rooms
Dharmapuri	30	340
Dindigul	45	743
Erode	67	1,315
Kanchipuram	93	1,552
Karur	41	975
Krishnagiri	30	212
Kanyakumari	40	656
Madurai	108	1,931
Nagapattinam	96	1,666
Namakkal	30	484
The Nilgiris	30	321
Perambalur	30	341
Pudukkottai	30	253
Ramanathapuram	30	214
Salem	36	791
Sivaganga	30	266
Thanjavur	30	362
Theni	30	336
Thoothukudi	23	407
Tiruchirapalli	**58**	**2,559**
Tirunelveli	38	683
Tiruppur	45	1,063
Tiruvallur	60	780
Tiruvannamalai	34	544
Tiruvarur	60	720
Vellore	340	6,760
Viluppuram	41	717
Virudhunagar	13	256
TOTAL	**2,643**	**65,403**
Source: Executive Summary –Tourism Survey for Tamil Nadu		

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The Table 1.3 depicts in the form of District Wise Details of Total Number of Accommodation Units in Tamil Nadu. It explains the total number of accommodation facilities and the total number of rooms available in some of the districts of Tamil Nadu. Chennai (34,315), Coimbatore (3185), Erode (1315), Kanchipuram (1552), Madurai (1931), Nagapattinam (1666), Tiruchirappalli (2559), Tiruppur (1063), Vellore (6760),districts has very high total number of rooms. This does not include Company Guest houses, Guest houses run by trusts, Dormitories, free Dharamshalas, tourist bungalows and free accommodation units in the state of Tamil Nadu. Pudukottai (253), Sivaganga (266) and Virudhunagar (256) these are some districts are low in accommodation especially Ariyalur (192), Krishnagiri (212) and Ramanathapuram (214) districts are very low in total number of rooms in accommodation.

Major Findings of this Study

1. Tiruchirappalli were taken for describing the various level of tourism pattern in Tamil Nadu. The majority of tourists are very high in foreign tourist arrivals compared to domestic tourist arrivals especially in the district of Tiruchirappalli.

2. In Tiruchirappalli, total number of domestic tourist's arrivals in the year 2011 was 60,85,725 and it increased to 89,91,752 in the year 2013 and fell to 68,88,776 in 2015. Then there has been increase in the number of domestic tourist's arrivals with 74,88,989 in 2016 and 77,64,485 in 2017.
3. The percentage share of Tiruchirappalli in total domestic tourist's arrivals in Tamil Nadu was 4.43 per cent in 2011 and it reduced to 1.80 per cent in 2012. In the year of 2014 to 2017 the percentage share of Tiruchirappalli district in total domestic tourist's arrivals in Tamil Nadu was around 2 per cent.
4. There has been steady increase in the number of foreign tourist's arrival in Tamil Nadu during the study period but in foreign tourist's arrivals there are some fluctuations especially in Tiruchirappalli. It reduced to 87,941 and 97,998 in 2014 and 2015 with 1.89 per cent and 2.09 per cent of share respectively. However in the year 2017 the foreign tourist's arrival increased to 2,22,775 in Tiruchirappalli which was 4.58 per cent of total foreign tourist's arrival in Tamil Nadu that year.
5. The percentage share of Domestic Tourists arrivals was 97 per cent in 2011. Then during the year of 2011-2017 percentage shares of domestic tourist arrivals was around 98 Per cent. Regarding the foreign tourist's arrivals it was 2 per cent in 2011 and it has a steady and fixed per cent of around 1 per cent. Tiruchirappalli is very famous for Pilgrimage sites especially tourist from both domestic and foreign tourist are very high in visiting the historical monuments like Temples also have Eco-sanctuaries and Parks.
6. Regarding the accommodation of rooms, Chennai (34,415), Coimbatore (3185), Erode (1315), Kanchipuram (1,552), Madurai (1,931), Nagapattinam (1666), Tiruchirappalli (2559), Tiruppur (1063), Vellore (6760) districts are very high. It has very high in the number of rooms but in Ariyalur (192), Krishnagiri (212), Ramanathapuram (214) has very low in the number of rooms in accommodation of Tamil Nadu.

Conclusion

In this regard tourism plays a vital role in Tamil Nadu. With regard to tourism development, Tiruchirappalli has the high status of attracting foreign tourists and large number of tourism development activities taking place because of particular tourist destinations. From the arrivals of tourists, tourism should be developed in such a way that it accommodates and entertains visitors in both the domestic and foreign tourists' arrivals. It has vast potential for increasing both domestic and foreign tourist arrivals also have the major changes of quality in both domestic and international level. It generates the employment and earning large number of foreign exchange earnings to the country's overall economic and social development. It also opens up the tourists to the wider world for getting new ideas and new experiences. Since it is a multi-dimensional activity, and basically a service industry, tourism can generate and earn more revenue for the state.

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A STUDY ON WOMEN AGRICULTURAL LABOURERS IN KULUMANI AREA OF TIRUCHIRAPPALLI DISTRICT[59]

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ABSTRACT

Role of women in agriculture sector cannot be ignored they comprise 33 per cent of the agriculture labor force and 48 per cent of the self-employed farmers. The central role of women in any society ensures stability, progress and long-term development of a nation. In agriculture sector primary focus is given to only one gender. Male is the dominant decision maker of this industry and benefit seeker of the policies. The nature and extent of women's involvement in agriculture, no doubt varies widely among different region, ecological sub-zones, farming systems, castes, classes and stages in the family cycle. In this study area heterogeneous people have been living like different socio-economic conditions, rituals and customs, roster, social habits etc. and the standard of living of the people is not up to the scale for that reasons the researcher has selected these study areas.

Keywords: women, agriculture, labourers, problems, status and growth.

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Introduction

Women play a significant role in agriculture development and allied fields like livestock production, horticulture, forestry, fisheries etc. It is a fact long taken for granted but also long ignored. Studies on women in agriculture are conducted in India and other developing and under developed countries all point to the fact that women contribute more to agriculture production but the recognition of their crucial role in agriculture should not obscure the fact that farmwomen continue to be concerned with their primary functions as wives, mothers and home makers. The nature and extent of women's involvement in agriculture, no doubt, varies greatly from region. Even with in a region, their involvement varies widely among different ecological sub-zones, farming systems, castes, classes and stages in the family cycle. National commission for women also report (1994) there is exploitation of women agricultural workers and discrimination in wage in spite of the hard work done by them. This does affect their motivation to engage in different types of income generating activities. Therefore, this study is analyzing the contribution of women in agriculture production in the study area.

Statement of the Problem

Since agriculture the role performed by women has been neglected and they have faced many problems in all fact of life-culture social, economic and political in their working space. Women agricultural labourers have been suffering from poverty, inequality, famine, low social status, etc., and it pulls their growth to down. Women agricultural labourers have spent their time for house management and agricultural work and their contribution is really

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good but our traditional ritual and concepts is not accepting their growth and performance. The study has been analysed on women agricultural labourers in Kulumani area of Tiruchirappalli District" which has mainly taken to consider the socio-economic conditions, standard of living income, employment and their problems.

Objectives

1. To study the socio-economic conditions of the women agricultural labourers
2. To identity the occupational patterns of the women agricultural labourers.
3. To identify wage differentiation among men and women agricultural labourers.
4. To suggest the measures for the development of women agricultural labourers.

Methodology

The study on women agricultural labour in Kulumani area of Tiruchirappalli district has purposely taken for the study. The researcher has been selected Somarasanpettai, Allunthur and Pllathuppatti for the study. In this study area heterogeneous people have been living like different socio-economic conditions, rituals and customs, roster, social habits etc. and the standard of living of the people is not up to the scale, therefore, the researcher has been selected these study areas. The researcher conducted a pilot study for the preliminary research work, based on this three villages have been selected and based on the population size, the sample size have been allocated in each village viz., (Somarasan-23 sampling, Allunthur-23 sampling and Pllathuppatti-24 sampling), 70 sampling have been collected based on the systematic random sampling method from this study area. The research has been collected the data by the personal interview methods through detailed questionnaire from the women agricultural labourer in this study area. The data have been classified, tabulated, interpreted and analysed. Secondary data collected from the magazines Journals, weekly, and also various officials' sources are used supplement for the primary data.

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Review of literature

Baijnath Sings, explains the women from the landless households hire out their personal labor on the fields, sweating lower wages to supplement household earnings. Women belonging to small and marginal farm households, work not only on their own uneconomical fields but supplements family earnings by working on others field too. In agriculture sector women have performed most of the backbone breaking work.

Jeemol Unni, explains the Women's participation in the work is dependent on the economic/ social status of the households to which they belong and the position of the household in the rural hierarchy. It better endowed household women work to increase household income. Poor households use female in the work force as a strategy for survival to maintain their total household real incomes.

Manjit Singh Capitalism grows out of disparities and in the process of its expanded reproduction. In India, women play an important role in agriculture. In most part of the country the jobs done traditionally by women are generally those of transplanting, sowing, weeding, harvesting, winnowing and threshing. The fact that the proportion of women wage labourers is much higher that of men.

Problems of Women's Participation

Agricultural women may feel inhibited to participate for reasons such as lack of confidence, family pressure, costumes etc., In these rural areas all were mainly male dominant

families where their husbands were not interested in sending their wives to venture in such new occupations. The women are lagging behind in developing their skills due to some social hazards like male chauvinism compulsory responsibilities of domestic affairs on women and more persons are not aware of the opportunities offered to them.

Result and Discussion

Table 1
Age wise distribution of the women agricultural workers

S. No.	Age	No. of Respondents	Percentage
1	10-20	10	14.0
2	20-30	11	16.0
3	30-40	22	31.5
4	40-50	13	18.5
5	Above 50	14	20.0
	Total	**70**	**100**

Source: *Primary data*

The table1 explains the age wise distribution of the agricultural women labourers. The highest proportions of the respondents belong to the age group of 30-40 years i.e., 31.5 percent. 14.0 percent of the respondents belong to the age group of 10-20 which is lower.

Table 2
Educational status of the respondents

S. No.	Educational Qualification	No. of respondents	Percentage
1	Illiterate	12	17.6
2	Primary	31	44.3
3	Secondary	23	33
4	Higher secondary	4	5.7
5	Graduate	-	-
	Total	70	100

Source: *Primary data*

The table 2 explains the educational status of the respondents 44.3 per cent of the respondents have studied primary education and 33 per cent are secondary and 17.6 per cent have completed illiterate education and 5.7 per cent have completed higher secondary education and there were no graduates.

Table 3
Monthly income of the respondents

S. No.	Monthly Income	No. of Respondents	Percentage
1.	Below 5000	27	39
2.	5000-10000	21	30
3	10000-15000	16	23
4.	15000 above	6	8
	Total	**70**	**100**

Source: *Primary data*

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The table 3 explains the monthly income of the respondents. It indicates 23 per cent of the respondents earned income are Rs.10000-15000 and 39 per cent of the respondents earned income below Rs.500. 8 per cent of the respondent earned income above Rs.15000 above. There is the second position in the earning high monthly income is 5000-10000 they are 30 per cent of the people.

Table 4
Monthly expenditure of the family

S. No.	Monthly Expenditure	No. of Respondents	Percentage
1.	Below – 1000	3	4
2.	1000 – 2000	11	16
3.	2000 – 3000	21	30
4.	3000 – 4000	23	33
5.	4000 – 5000	8	11
6.	5000 and above	4	6
	Total	**70**	**100**

Source: *Primary data*

The table 4 explains the monthly expenditure of the family. 33 per cent of the family spends Rs.3000-4000 and very low proportion of the family at 4 per cent spends below Rs.1000. 16 per cent of the family spends Rs.1000-2000. 30 per cent of the family spends Rs.2000-3000. 11 per cent of the family spends Rs.4000-5000 in the study samples.

Table 5
Type of work of the respondents

S. No.	Type of work	No. of Respondents	Percentage
1.	Weeding	7	10
2.	Transplanting	29	41
3.	Threshing	9	13
4.	Harvesting	18	26
5.	Winnowing	3	4
6.	Irrigation	4	6
	Total	**70**	**100**

Source: *Primary data*

The table 5 explains the types of work of the respondents. 41 per cent of the respondents go for transplanting because they get more wages. And 26 per cent of the respondents go for harvesting and 13 per cent of the respondents go for threshing. Then 10 per cent of the respondents go for weeding and six per cent of the respondents go for irrigation. Remaining four per cent are engaged in winnowing.

Findings

1. Higher proportion of the women agricultural labourers belong to the age group of 20-30 years and 30 – 40 years of age group.
2. 48.5 percent of the agricultural women labourers belong to Backward caste. In the study area, the scheduled caste domination is high.

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3. 44.3 per cent of the women labourers have studied upto elementary level. 17.6 percent of the women labourers is illiterate.
4. Some of the women labourers are living in Brick houses but there is no proper sanitation facilities and ventilation facilities.
5. Large number of women labourers are doing the harvesting and transplanting in agriculture.
6. There is wage difference between the male and female in the study area.
7. The nature of work which determines the working hours per day. The transplanting and harvesting is the minimum 8 hours.
8. Women labourers are facing some kind of occupational diseases like pain and itch. The large number of respondents has affected hand and leg pain i.e., 31 percent.

Conclusion

From the analysis it is found that female agricultural labourers are getting lower wages when compared to the male agricultural labourers. So the government should take steps to eradicate such discrimination. The main feature of project work is to find out the problems of women in agriculture sector. The researcher has analysed using statistical tools in finding the problems faced by female agricultural labourers and has given valuable suggestions. The further analysis will strengthen the topic and more tools can be used to make it valuable.

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